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THE EARLY IRON AGE SITE OF NDONDONDWANE, KWAZULU-NATAL, SOUTH AFRICA: PRELIMINARY REPORT ON THE 1995 EXCAVATIONS*

LEN O. VAN SCHALKWYK

KwaZulu Monuments Council
Ulundi, South Africa

and

HASKEL GREENFIELD & TINA JONGSMA

Department of Anthropology, Fletcher Argue 435,
University of Manitoba, Winnipeg,
MB, R3T 5V5, Canada

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ABSTRACT

Large-scale horizontal excavations of the Early Iron Age (EIA) Ndondondwane-phase type site in the Thukela valley of KwaZulu-Natal (South Africa) were re-opened in 1995 in an attempt to increase our understanding of the intra-settlement economic and social organization of the EIA communities in southern Africa. Previous excavations of the EIA site of Ndondondwane indicated that it would be a prime candidate for such a research project. The site is largely undisturbed, has an extremely short occupation, and the deposits are close to the surface facilitating excavation of large areas of the site. The ensuing report places the resulting archaeological field work on the site of Ndondondwane in historical context, describes the fieldwork undertaken previously and during 1995 at the site, and presents the collected data necessary to begin testing the various models of EIA intra-community spatial structure.

INTRODUCTION

The appearance of food producing communities in eastern southern Africa occurs concomitantly with the introduction of iron metallurgy. In southern Africa, most EIA research has focused upon defining the culture historic sequence of EIA communities in the region. As a result, the general outline of the material culture sequence has been defined. However, relatively little effort has been expended until recently to reconstruct EIA social and economic organization. Various often contradictory models have been proposed to explain the nature of EIA community organization. Hall (1987) argues that EIA communities were organized at a household or domestic level of production, while Huffman (1993), Denbow (1984), and others have argued for more community-wide modes of production (such as the Central Cattle Pattern [*cf.* Kuper 1982]). However, the internal economic and social organization of EIA settlements and households remains inadequately understood (*cf.* Van Schalkwyk 1992; Whitelaw 1994b).

The Lower Thukela River basin, KwaZulu-Natal Province, South Africa (Fig. 1), is an appropriate region for the testing of such models because research to date in the area has yielded one of the most comprehensively defined regional EIA culture historic sequences. The EIA ceramic sub-phasing is anchored by radiocarbon dates and has a very narrow temporal range (100-150 years), allowing strict control over temporal variability within the region. This level of control is available in only a few other areas of the subcontinent. Regional survey has defined the larger EIA settlement system (Van Schalkwyk 1992, 1994a, 1994b, 1995) allowing preliminary evaluation of the position and representativeness of sites within the area.

The goal of the Ndondondwane research was to increase our understanding of the intra-settlement economic and social organization of the EIA communities in southern Africa. In order to effectively carry out this goal, we needed a site with a largely undisturbed and extremely short occupation, but where the deposits were close to the surface to facilitate excavation of large areas of the site. Investigations of intra-settlement community organization should ideally be conducted on single phase-single occupation sites in order to minimize the effects of temporal and spatial change (limiting settlement

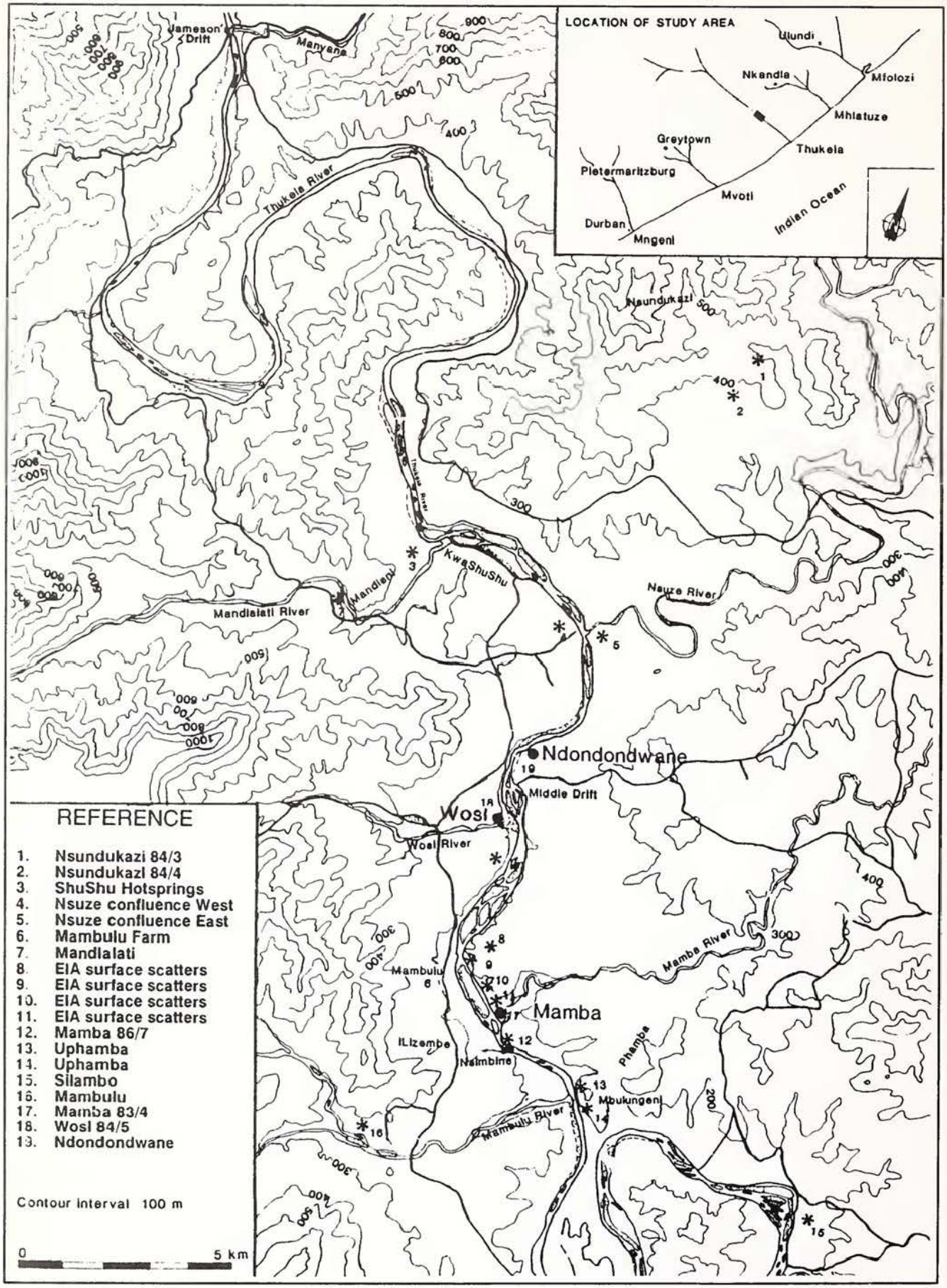

Fig. 1. Map of Lower Thukela basin survey area and locations of Early Iron Age sites. Inset is location of study area in relation to major rivers and urban centres in KwaZulu Natal.

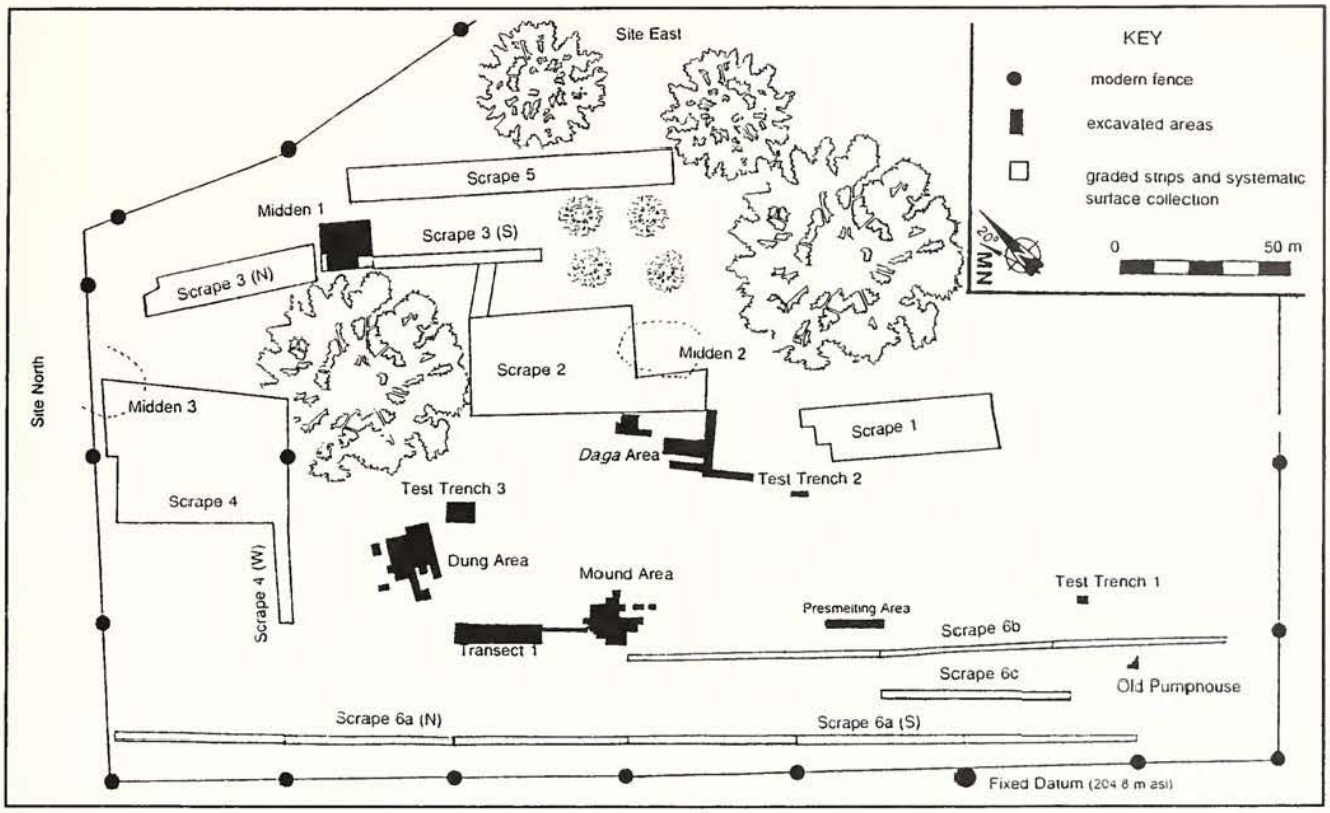

Fig. 2. Preliminary site plan of Ndondondwane, showing old and new excavation areas and scrapes.

drift). Previous excavations at Ndondondwane indicated that it would be a prime candidate for such a research project (Maggs 1984a; Loubser 1993). As a result, new large-scale multi-year excavation at Ndondondwane were planned. The first of these seasons occurred during the winter of 1995 by a joint team of Canadian and South African archaeologists to collect data to test models of EIA intra-community spatial structure. The ensuing report places the resulting archaeological field work on the site historical context, describes the fieldwork undertaken in 1995, and, on the basis of the archaeological finds, argues their cultural heritage significance.

PREVIOUS RESEARCH

As early as the 1930's, archaeological deposits with extensive iron working residues had been recorded at Hot Springs (Shu Shu), and at the Nsuze, Wosi and Mamba tributary junctions on the Thukela (Laidler 1938) (Fig. 1). These were ascribed to Bantu-speaking populations resident in the region between the late 16th and early 19th Centuries (Schofield 1948:158-162). For the next thirty years, within a socio-political milieu that continued to reinforce the myth of a concomitant arrival of Blacks and Europeans in the sub-continent in the 15th Century, and one in which the former were denied any active participation in their own history, the dates and cultural affiliation ascribed to these sites remained unchallenged.

However, by the early 1970's, archaeologists had begun to contest the orthodox portrayal of Black African's origins. In a seminal Early Iron Age (EIA) research program in the KwaZulu-Natal region, Tim Maggs of the Natal Museum redefined the region's culture-historic sequence and was able to demonstrate a far greater antiquity for these and other related sites along the eastern seaboard (Maggs 1973, 1976, 1980a, 1980b, 1984a, 1984b, 1984c; Maggs & Ward 1984). On the basis of a series of confirmed radiocarbon dates, he firmly placed these Thukela basin sites within the first millennium AD.

The 1978 excavations

In 1978, the then owner of the Middle Drift trading store, Campbell Willmore, notified the Natal Museum of the presence of enigmatic clay mask and other ceramic fragments in a ploughed field adjacent to the Ndondondwane ford over the Thukela (Fig. 2). Maggs investigated the site and chose to excavate on what subsequently came to be recognized as a large mound or midden deposit of cultural debris, apparently associated with a variety of activities. These included iron smelting, ivory working, and ritual practices that were inferred by the excavator from the presence of further clay mask fragments reminiscent of the now famed Lydenburg Heads (Innskeep & Maggs 1976; Maggs & Davison 1980).

Maggs was primarily concerned with ceramic data from which he could build on his ceramically-seriated and radiocarbon-anchored culture historic sequence. He was further, clearly able to demonstrate that the ceramics

from the site comprised a new phase within the EIA sequence (*c.* AD 300-1100) that he had begun to map in the KwaZulu-Natal region (Maggs 1973; Maggs & Michael 1976). Ndondondwane thus became the type-site for the phase and by convention was named after it (Maggs 1984a). The site was subsequently dated by radiocarbon dating to *c.* AD 750 (Maggs 1984a:78). Within the regional ceramic sequence, the Ndondondwane phase postdates the *ca.* AD 500-700 Msuluzi phase (Maggs 1980b) and predates the later *ca.* AD 900-1100 AD Ntshekane phase (Maggs & Michael 1976).

Due to funding and personnel constraints (Maggs was one of only two archaeologists employed in the province at the time), these earliest excavations were, of necessity, confined to a number of test trenches and test squares on the identified mound area. His excavation strategy was designed to maximally recover ceramic and faunal samples in an attempt to further elucidate the regional culture-historic sequence and obtain insights into the economic life ways of what had now come to be recognized as the earliest indigenous farming communities in the region.

Standard recovery procedures for bone and plant remains (sieving and flotation) were employed during Maggs' excavations at Ndondondwane. The finds were unique in that they yielded the first large-scale faunal (Voigt & Von den Driesch 1984) and botanical (Maggs 1984a) data for the EIA of the region. Until then, most other EIA sites excavated had been either disturbed by multiple or later occupations and extensive soil erosion, thus limiting their potential yields. The Ndondondwane data thus served to provide significant new insights into the economy and ecology of the region's EIA inhabitants, including the first positive identification of *Pennisetum typhoides* (bulrush millet) as a cereal crop (Maggs 1984a, 1984c).

Maggs recognized the intrinsic value of the site and moved to have excavations conducted over a more extensive area of the settlement. This was largely motivated by the proposed construction of a series of dams in the Lower Thukela basin which would flood the valley above the 400 m asl. level (Thorington-Smith *et al.* 1978) and consequently destroy this, and a suite of associated sites in the vicinity.

The 1982 excavations

In October 1982, J.H.N. Loubser, then a Masters graduate of the University of the Witwatersrand, was seconded by the then South African Defence Force to the KwaZulu Homeland Government to extend Maggs' original excavations. These were initiated on the mound originally investigated by Maggs and were subsequently extended by Loubser (1993). He succeeded in excavating the entire content of the mound and was able to discern, in conjunction with Maggs' original excavations, three discrete activity areas. His extended excavations corroborated Maggs' contention that one of the prime activities associated with the mound area had been the smelting of iron. He was further able to convincingly demonstrate how the mound accumulated through a series of earlier activities that included hut construction, specialist ivory-working (bangle manufacture), and ritual activities - the latter being inferred from the presence of numerous clay mask fragments (Loubser 1993:141-148).

Subsequent to excavating the mound, Loubser identified the presence of a dung deposit some 40 m to the northeast in the process of a soil coring assessment of the surrounding area (Fig. 2). This area was sampled by means of a series of test trenches and further auguring. The dung area comprised two overlapping macro-stratigraphic units: an upper loose ash/dung horizon and a lower compact dung. On the basis of his sampling, he interpreted the deposit as a cattle byre that may have shifted slightly laterally over time. He reconstructed the presence of a double-row of interconnecting palisade poles around the dung area on the basis of the presence of two postholes (1 m apart) in one of the test trenches (Loubser 1993: 122). He also recorded the presence of a possible small stock enclosure at the west edge of the area, as evidenced by a series of small postholes and an associated channel.

Loubser cored the area between the mound and dung area and concluded the area was devoid of any deposits and culturally sterile. He also investigated the larger cleared area circumscribed by the field edge. He noted the presence of a number of surface concentrations of cultural debris (ceramics, daga, slag, *etc.*) distributed linearly across the site in a N-S line up slope and to the east of the mound. The surface scatters were recorded in a non-quantitative manner, merely noting the presence or absence of various artifact classes.

Several small test squares (1x1 and 1x2 m) were placed in one of the more visible concentrations of plough-scattered daga (fired clay). The remains of a daga floor and a small ash deposit were located and sampled. One of the basis of this, and the subjective recording of the surface scatters, he surmised that a linear arrangement of domestic units was probably associated with the cattle byre and mound area, and that the site was enclosed within the modern ploughed field (Loubser 1993:112). At the south end of the field, Loubser recorded the presence of furnace fragments and smelting debris. He ascribed these to the likely presence of an EIA smelting area associated with the main site. This has subsequently been shown to be incorrect (see further discussions below).

The ceramic samples and iron smelting evidence retrieved during the 1982-83 excavations have been described in detail (*op. cit.*), while the faunal samples are in the process of analysis by Elizabeth Voigt. The botanical samples retrieved still await detailed analysis and are currently housed at the Natal Museum, Pietermaritzburg.

In May 1983, in an act of bureaucratic bungling by the army, Loubser's term as field director was terminated even though the work at the site remained unfinished. He was replaced by an archaeology undergraduate with limited analytical experience who, subsequent to the departure of Loubser from the field, chose to extend the

excavations in the dung area. He worked at the site for an indeterminate length of time (possibly 3 months, from May until August). However, no field notes are available in the archives and only photographs were submitted to the military command in place of a report. All of the retrieved artifacts (pottery and stone) were curated without any associated provenience data. These have consequently had to be discarded from the analytical process. Fortunately, the faunal remains (with provenience information) were retrieved from the field by Elizabeth Voigt and Edward Watson (then of the Transvaal Museum) during a research visit. As with Loubser's faunal samples, these are in the process of analysis and are currently housed in the McGregor Museum, Kimberley. Excavations at the site were then erroneously abandoned and excavations at another EIA site in the vicinity were initiated (Van Schalkwyk 1994a).

Post-excavation deliberations

Subsequent to the publication of Loubser's report on his excavations at Ndondondwane (1993), Iron Age archaeologists in the province realized the intrinsic value of the Ndondondwane site and its remaining potential. Its potential value is enhanced particularly in light of its association with the suite of EIA sites along this stretch of the lower Thukela basin (Fig. 1). In 1993/4, the KwaZulu Monuments Council (KMC) requested a commission to assess this and other archaeological sites in the province for declaration as heritage sites. Subsequently, Ndondondwane was listed as having Provincial Heritage Site status and will be proclaimed under pending heritage legislation in 1997. In addition, the KMC has recommended the establishment of an archaeological conservancy area in this part of the lower Thukela basin (Whitelaw 1995:5-7).

THE 1995 SEASON - SURVEY AND EXCAVATION RESULTS

In 1992, Ndondondwane was identified during a CRM assessment as a potential site to be impacted by an impoundment on the Lower Thukela River proposed as part of a larger regional water augmentation scheme of the Department of Water Affairs and Forestry (DWAF). The perceived extent of Ndondondwane fell well within the demarcated 400 000 m^2 area of proposed construction activity. A rescue-excavation contract was awarded to the KMC in mitigation for the proposed destruction of all or part of the site. The results described below soon surpassed all expectations. Once the plough zone overburden had been removed from all of these areas, and the extent of preserved deposits and features ascertained, it became apparent that the site was far more intact over a larger area than had been thought by the previous excavators.

Excavations were initiated within two of the areas previously assessed by Loubser from which there were known remaining deposits (Dung Area and Daga Area - Fig. 2). In addition, other areas indicated by Loubser as having potential deposits, or declared sterile, were also tested, with often surprising results.

Survey

Topographic Survey

Upon our arrival at the site, we discovered that Loubser's (1993) map was inadequate for our research goals. For contour purposes, it was limited largely to the 1982-3 ploughed field areas. Our research quickly revealed that the site was in fact more extensive than previously thought (to the N and E), but smaller in extent along the southern axis. As a result, we began a new topographic survey. A preliminary map showing the distribution of features (excavation areas, activity areas, scrapes, *etc.*) was prepared (Fig. 2). However, the topographic map is still incomplete because parts of the site were inaccessible during the field season.

Graded strips

A Galion Road Grader was used to expose potential midden concentrations at the outset of excavations. This machine was employed to initially remove the bush thickets on the present up slope unploughed areas of the site. These areas were last ploughed in the 1950's (C. Willmore, pers comm.) and had become encroached by *Acacia* spp. and *Dichrostachys cinerea*. Due to this thick vegetation cover and consequent impenetrability, these areas had been inadequately surveyed by both the previous excavators.

After bush-clearing, the machine's blade was lowered to scrape away the top 0,1 m of the plough horizon. This method enabled the almost immediate identification of Midden 1 (see below) but yielded very few deposits over the remaining extent of the site. Where no underlying deposits were immediately apparent, the grader's tines were then employed to rip the soil to a depth of 0,4-0,5 m. This latter method proved to be extremely destructive unless closely monitored to prevent the tines from destroying underlying in situ deposits. Scrapes 1 & 2 yielded no evidence of underlying deposits even when subsequently tested by tining, coring and trenching. This implied to us that these areas were either beyond the borders of the site or constituted open spaces (*i.e.* non-activity areas) within the bounds of the original settlement (however, see Midden Deposit 2, below). Tining was successful in three scrapes (Scrapes 3-5), clipping the tops of subterranean deposits and bringing material to the surface, thereby allowing identification of Midden Deposits 1 and 3 (Figs 3 & 4). It was these initial indications that allowed us to begin ascertaining the real extent of the settlement and where to focus our excavation activities.

Surface scatter survey

Loubser's (1993) map also did not contain sufficient quantitative surface distribution data to enable objective interpretation of his identified surface "concentrations". We thus initiated a systematic collection of surface scatter debris based upon the new grid system within the graded and tined areas of the site. The other areas were inaccessible due to dense vegetation and will be investigated in future years. Previous research on the

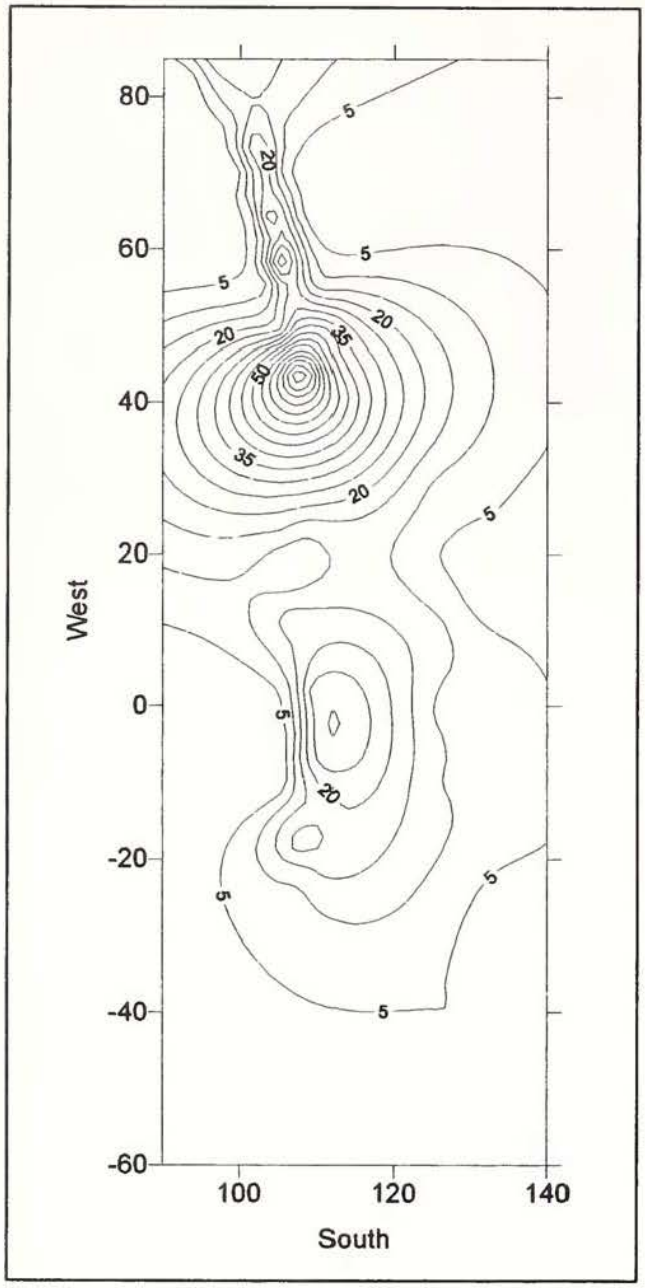

Fig. 3. Distribution of ceramic surface densities in Scrapes 2E, 3 and 5 (5 fragments per contour interval).

historical Royal Zulu sites of Ondini (Van Schalkwyk & Rawlinson, in prep.) and KwaBulawayo (Whitelaw 1994a) have shown that, even under circumstances of extensive ploughing, most cultural debris fragments are not moved more than *c.* 4-5 m from their original place of disturbance. This is a consequence of the bi-directional pulling effect of the plough successively removing and returning the material along the same plough cut. Larger artifacts, such as grinding stones and slag lumps, may however become caught up in the plough-discs and are then transported well away from their original contexts. Where these occur randomly and in isolation they need to be assessed within the possibilities of the above.

By quantitatively assessing the differential surface distributions of cultural debris over a site, a more objective indication of surface concentrations can be obtained. High density distributions are indices of possible subterranean concentrations (middens) and potentially features associated with the occupation of the site. Alternatively, low density distributions quantify the extent of plough disturbance and are potential indices of non-activity areas. In order to quantitatively test our visual assessments of the respective scrapes, and those surface "concentrations" subjectively recorded by Loubser (1993), we initiated our survey by laying out transect lines along the winrows thrown up by the grader blade within the graded strips (Scrape 1-5). We subsequently extended this to an area that we had ploughed in the southern sectors of the site (Scrape 6).

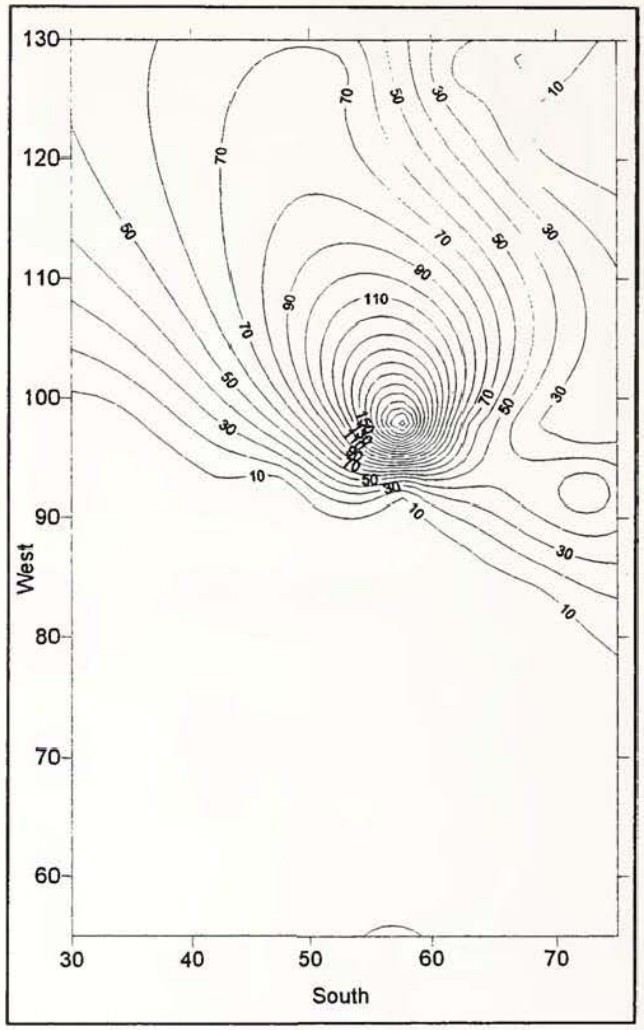

Fig. 4. Distribution of ceramic surface densities in Scrape 4 (10 fragments per contour interval).

The quantities of ceramics, bone and culturally modified stone were determined for each 5 m interval. The isopleths subsequently generated illustrate the location and extent of activity and non-activity areas within the site. Three previously undetected activity areas (Furnace 1, Midden Deposits 2 and 3; Figs 3-5) were located by mere coarse analysis of the survey data *in loco*. Each of the scrapes will be discussed further in relation to the excavations conducted in these respective areas.

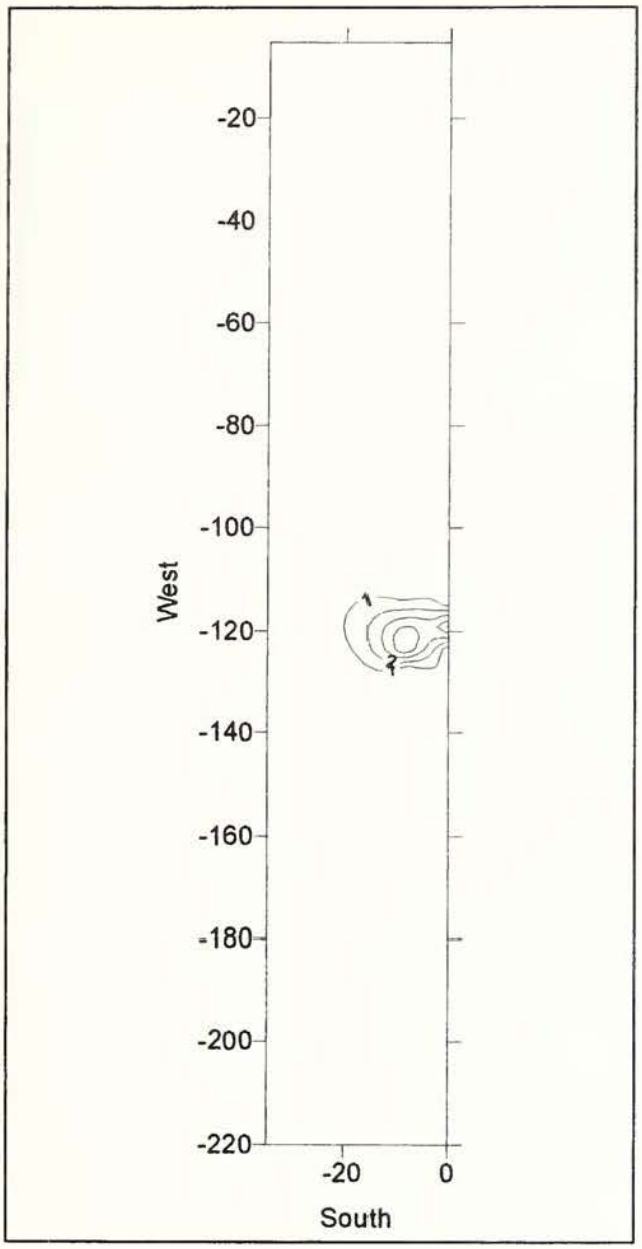

Fig. 5. Distribution of daga surface densities in Scrape 6 (1 fragment per contour interval).

Excavated Areas

Several areas of the site were excavated. Each provided an important insight into the spatial organization of the settlement, and will be discussed in turn:

Dung Area

This area was identified during the 1982-3 excavations and sampled by a number of test trenches. The original excavators exposed *c.* 112 m^2 of the deposit in an attempt to determine its extent, and the possible presence of any associated activity areas within or around what was then identified as being a cattle byre (Loubser 1993:121-123). It was characterised by thick and extensive deposits of ash and dung, and the occasional presence of surrounding postholes. Unfortunately, only part of the area had been previously tested by Loubser, and all of the subsequent excavator's data were lost. As a result, new excavations were extended in this area.

Fig. 6. Photograph (95-20-16) of excavations in Dung area (facing magnetic north). Note the unexcavated white ash concentration in the centre. This was the level at which the white ash appeared immediately beneath the plough zone.

Our excavations on the site were initiated in the Dung Area (Fig. 6) primarily to obtain supplementary and accurately provenienced faunal and ceramic samples to replace those that were caused to be discarded by the actions of the last excavator. Further, in the light of certain current theoretical positions, the cattle byre in Iron Age society is where high status individuals should be buried, and where the community's grain should be stored. We wished to test for this assertion.

We exposed a further *c.* 140 m^2 of deposit to an average depth of 0,65 m (91 m^3). Almost the entire extent of the dung and ash deposits were mapped. The deposit was excavated in its entirety to the N, W, and S. Only some areas to the east remain unexcavated. Although the maximal extent of the Dung Area was ascertained by coring and test trenching, it was not possible to excavate the entire deposit during this field season.

Beneath the plow zone, three horizons, with small localized deposits, were uncovered. The upper horizon was a thin deposit of almost pure ash (with a very low dung content), with few artefactual or bone remains. The middle horizon was a thick deposit, intermediate in colour between upper and lower, composed of ash mixed with dung, and with higher frequencies of animal bones and ceramics. The lower horizon was darker. It was composed of very thick dung in the NE quarter of the excavation area (Loubser's excavation area). In the rest of the excavation area, it was composed of dung mixed with charcoal and ash. Fewer ceramics and bones were found in this horizon. Beneath this lay a hard basal surface leading to the sterile substrate. The stratigraphy would appear to indicate at least three sequential phases of use of this area - the first as a livestock byre, with the livestock preferentially congregating downslope in the NE corner, where the dung was thickest. The second phase of use appears to indicate intensive dumping of ash, ceramics, and food remains into the western and southern parts of the byre.

Fig. 7. Photograph (95-22-12) of whole ceramic pot in quad T6, in centre of Dung area (facing magnetic SSW).

Fig. 8. Photograph (95-23-30) of burnt daga hut-floor in Transect 1. Note differential firing in the centre and around the edges. The pestles were not found on the *in situ* grinding stones, but were found in the 1x2 m square in which the grinding stone is found. Also note the thick white ash layer extending from the burnt floor into the NW and W profiles.

Livestock movements probably circulated and mixed the ash with dung over a larger area. In villages in the region today, the byre is where sizeable quantities of ash and other refuse are dumped. It is a ritually safe area to dispose of ash and the remains of other activities that could otherwise be used by others to harm its original makers and users. The third use was for dumping of ash, possible in anticipation of abandonment of the site.

Whilst we were able to confirm Loubser's observation of both a basal hard dung horizon and an overlying softer dung layer (our Lower horizon) throughout most of the area, the latter was replaced by a concentrated ash horizon in the centre of the deposit (Squares S, T, U, V:1-5). Excavation revealed that this layer filled a shallow basin, *c.* 2 m in diameter, that was apparently purposefully prepared. Substantial ceramic and faunal samples were retrieved and a number of discrete activity areas were discerned both within, and immediately adjacent to, the cattle byre. These included iron-smithing locales, hearth-fires associated with the cooking of meat, and the ritual burial of a whole pot at the supposed top entrance to the enclosure (Fig. 7). Tentatively, none of the ceramics from this area appear to have been used for cooking. Most appear to have been eating or drinking vessels. The S and SW perimeter of the basin yielded a rich concentration of faunal remains and ceramic vessels. In relation to most other excavated areas in the byre, the bones and ceramics associated with the basin exhibited a minimal degree of fracture, indicating limited post-discard trampling.

Transect 1

In light of recent interpretations of EIA settlement layout from sites excavated at Inanda in the Umgeni valley (Whitelaw 1993, 1994b), it was deemed expedient to test Loubser's (1993) vacant zone between the Dung and Mound Areas. Whitelaw (*op. cit.*) found remnants of floor areas in the centre of his sites, between the cattle byres and other associated specialist activity areas. To test the possibility that such a situation may exist at Ndondondwane as well, a linear series of test squares (collectively known as Transect 1) were opened in the intervening space. There was no indication, from a subjective evaluation of the surface topography and cultural remains prior to excavation, that any architectural features or artefact concentrations may have occurred in this area.

Although the plough horizon yielded randomly scattered and fragmentary pieces of cultural debris, these are interpreted as being plough-drag from the adjacent Mound and Dung areas. Excavation was started in square 1S/1W and excavated to sterile base. Alternate 1x2 m squares were excavated in two rows (A & B). Where no features or culturally intact deposits were discernible the next square was then opened. This continued for the first 10 meters. At 10S/1W a thick ash deposit, associated with substantial quantities of ceramics, bone, and *in situ* burnt daga was located at about the 0,8-0,9 m depth level. This area was consequently widened to expose an entire burnt daga circular floor located at *c.* 1,15-1,20 m below the current land surface (Fig. 8 & 9).

The superstructure was probably beehived-shaped based upon the dearth of peripheral posthole remains, the presence of a single large posthole in the centre and reed impressions in the burnt daga, and the nature of and the distribution of intensely burnt floor daga. It was most intensely burnt in the centre of the floor, indicating the collapse of a beehive structure. The floor was baked when the house burnt down. The season of its burning could be determined by the unidirectional nature of the ash deposit, which extended to the north and northwest of the hut floor. It is thickest in the northwest profiles of the area. The prevailing winds in the Thukela are from the southeast, only, in the winter.

Associated with the floor were a number of flat grinding stones and typical EIA upper grinders. The remains of at least six whole ceramic vessels were clustered along the N and NE extremity of the floor and a large flat stone (suitable for sharpening iron tools) was found toward the centre of the floor. Few artifacts were recovered from the surrounding area. It would seem that

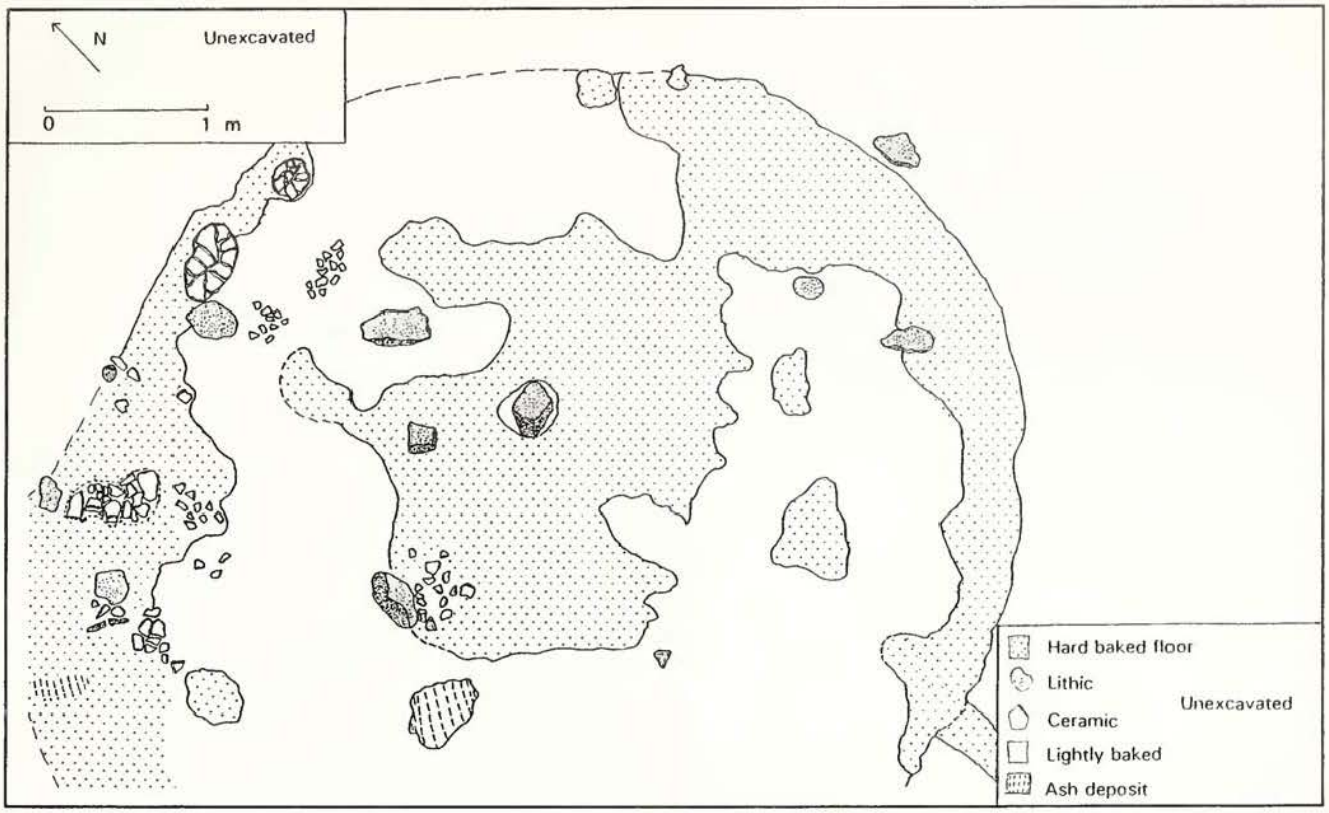

Fig. 9. Drawing of burnt daga hut-floor in Transect 1.

the house and its contents were entirely abandoned as it caught fire. It is hypothesized that this is the remains of a men's hut based upon its proximity to the iron working areas and the byre, the presence of iron tool sharpening stones, ceramic used mostly for vessels for eating and drinking, and its restricted location with respect to other identified domestic complexes.

Except for the *in situ* ceramics visible in the photographs, all artefact classes associated with the floor feature were retrieved and bagged for curation and further analysis. The *in situ* remains were left in place to allow for the possible future development of an interpretive centre over the structure. At the conclusion of the contract the feature was overlain with a geotextile blanket and backfilled. Due to their depth below the current surface, future agricultural activity (specifically ploughing) is unlikely to disturb the underlying deposits.

Once the extent of the burnt floor feature had been determined, Transect 1 was extended for a further 15 m to intersect the remaining peripheral deposits of the Mound Area. The objective here was to investigate the stratigraphic relationship between the floor feature and the Mound area, and to discern the distribution of features and artifacts in the intervening space. No architectural features were encountered north or south of the floor feature. All of the *in situ* artifacts were found associated with a single thin cultural horizon in this area. The preserved deposits over the entire length of Transect 1 were deeply buried by colluvial deposits beneath the modern surface. In total, some 48 m^3 of overburden were manually removed to expose the underlying cultural horizon. The preserved cultural horizon began 0,6 m beneath the modern surface and extended to a maximum depth of 1,2 m. It appeared to gradually rise from the north (*c.* 1,0 m) to the south (*c.* 0,6 m) as the Mound area was approached. This reflects the original EIA topography. Subsequent topographic analyses indicate that the base of the Mound area was the highest feature on the EIA landscape. Due to their depth below the modern surface none of these basal deposits had been disturbed by latter day mechanical ploughing activities.

A relatively uniform low density of artifacts were noted in the open excavated spaces immediately to the north and south of the floor feature. The only visible concentrations were noted as the trench connected to the peripheral deposits of the Mound area. The squares were excavated in 1x2 m collection units because of their exploratory nature and the material was bagged by stratigraphic horizon. Detailed discussion of these finds awaits laboratory analysis.

Based upon the limited area of excavation in Transect 1 and subsequent coring, it would appear that the burnt floor feature is the only large architectural feature in the intervening space. Most of this space appears to be represent a large open-area within the settlement.

Furnace 1

During the preliminary surface scatter assessment within the confines of the present-day field, a concentration of burnt daga fragments, raw ore, and culturally modified stone cobbles were observed on a slight topographic rise towards the south end of the site

(*c.* 110-130 S) on the N-S axis (Fig. 2). The area was initially investigated by three widely-spaced 1x1 m test squares. Excavations at 124S/1E (expanded to 2x2) encountered evidence of high temperature burning of the horizon immediately beneath the plough zone and overlying a bowl-like depression (1.5 m diameter) filled with carbonized material (Fig. 10). The stratigraphy in this area comprised a very thin plough zone horizon (*c.* 5-10 cm), and a thicker underlying cultural horizon which terminated on a hard reddish-brown pre-EIA substrate.

Fig. 10. Photograph (95-20-1) of burnt earth horizon and bowl-like feature in Furnace 1 area.

Subsequent coring in all directions from this trench indicated that the underlying hard sterile substrate formed a natural slight topographic rise in the EIA landscape. This rise is between two modern adjacent winrows and was exposed by erosion and ploughing. Two further test squares (112S/1E; 118S/1W) confirmed the extent of the topographical feature and the nature of the activities conducted here. There was only a thin preserved cultural horizon between the plough horizon and the sterile substrate. Most of the cultural horizon in these squares had been incorporated into the plough zone, consequently decontextualizing the cultural residues, and leaving only a basal remnant. This was indicated by the contiguous distribution of large charcoal fragments (>5 mm) and burnt daga flecks (*c.* 5-15 mm) through the plough zone and into the cultural horizon.

The rise had been appropriated as a specialised activity area of the EIA settlement. The nature of the cultural horizon suggested a number of pre-iron smelting activities. First is the crushing and preparation of raw ore as evidenced by the large hammerstone cobbles and small residual raw iron ore fragments. The latter were distiguished from iron ore fragments in the Mound and other areas by the substantial inclusions of nonferrous impurities (*eg.* quartz and gneiss). The other areas of the site where iron working activities were encountered characteristically contained relatively purer iron ore residues.

The presence of hammer and anvil stone-cobbles provided further evidence in support of this inference. These artifact types are also not found in such quantities associated with other iron-working areas of the site. Secondly, the small bowl-shaped depression was found almost in the centre of the baked earth horizon's spatial distribution. The sediments in the depression appear to have been baked at higher temperatures than normal domestic fires. Given the size of the baked soil distribution around the depression (*c.* 10 m diameter) and the presence of charcoal fleck concentrations together with small fragments of burnt daga in the depression, these suggested that the basin area may have been associated with the base of a charcoal preparation area. Iron production in the Iron Age is known to have required large quantities of charcoal (*cf.* Killick & Van der Merwe 1977).

Finally, ceramic remains are characteristically sparse in this area and comprised largely of EIA undecorated bowl fragments. Only a single herring-bone pattern neck shard was recovered during surface collection of the area. The total absence of bone residues and other ceramic vessel classes suggests that minimal or no food preparation and consumption was conducted at this locale. The bowl fragments appear to be of small vessel size, suggesting that they were probably drinking vessels. This makes sense considering the heat generating nature of the activities postulated for this area. In sum, we postulate that this specialised activity area was at the south edge of the settlement. This is tentatively further corroborated by the provisional results of the surface scatter analyses undertaken.

Pump House

Loubser (1993:fig. 1) indicates a surface scatter of burnt daga furnace fragments at the southern edge of the ploughed field. These surface fragments were relocated in 1995 using his location criteria and two noncontiguous test trenches were excavated in the area (test trench 1 and pump house; see our Fig. 2) where the concentrations appeared most dense. The trenches were excavated to a maximal depth of 30 cm beneath the surface. In Test Trench 1, two major stratigraphic horizons were noted, the modern plough zone (*c.* 0,2 m) and the hard reddish brown sterile (pre-EIA) basal horizon. Excavation was then moved to a second test trench (Pump house) where the same two horizons were again observed. However, in this test trench, concentrations of baked daga fragments were found in the plough horizon. Consequently, the excavations were laterally expanded to ascertain their nature and extent. Upon a closer examination of the burnt daga fragments it was realised that these were in fact baked red brick fragments, cemented together with a lime mortar. Subsequent enquiries with the previous landowner revealed that the feature identified by Loubser was in fact the remains of a modern water pump house platform. It was gutted by fire in the late 1960's and subsequently abandoned. As a result of our investigations in this sector of the site, we concluded that there are probably no in situ EIA cultural remains in this area. The surface scatter analysis data indicate that the area appears to lie beyond the south edge of the EIA settlement.

Daga Area

This was another of the areas of the site tested by Loubser (1993) on the basis of a relatively high density of surface scattered fragments of fired daga in this area. He suggested that these might be the remnants of plough-damaged EIA hut floors and concluded that they occurred in a probable area of domestic residence. We excavated a series of exploratory trenches (175 m^2), to a maximum depth of 0,60 m (*c.* 70 m^3), over an area of some 500 m^2 within which the greatest surface density of daga fragments were present. As over the rest of the site, the plough zone was observed to a depth of *c.* 0,2-0,25 m. Both this, and the underlying horizon, proved to be culturally sterile. By extending our excavations to the vicinity of Loubser's (1993:123) test trenches we exposed a small intact ashy midden containing cultural debris (ceramic, bone and *Acatina* sp. disc-beads). This feature, centred on 50S/60E, was *c.* 2.5 m^2 in extent and located 0,3-0,4 m below the present day surface. Although the depth of colluvial overburden is markedly shallower on this up slope part of the site, the feature was sufficiently deeply buried to not have been affected by ploughing. The midden was excavated in its entirety and all the artefacts were retrieved.

Further lateral excavations and subsequent coring failed to locate any further features or artifact clusters associated with either the midden or the surface scattered daga fragments. Mechanical scraping to the NE of these excavations also failed to reveal any further evidence of EIA activity. A surface concentration of EIA cultural debris was exposed at the southern extremity of Scrape 2. We postulate that the excavated ash feature and the surface scatters of baked daga immediately downslope in the Daga midden are all probably associated with the up slope Midden Deposit 2, and probably represent a discrete household cluster of the original EIA settlement similar to that in Midden 1(see below).

Midden 1

This area was first located on a foot survey of the site when a low density of scattered cultural debris was observed on the surface. Subsequent mechanical scraping and surface collection (Fig. 3) exposed further debris concentrations. A 2x2 m test trench, centred on 35N/ 110E, was excavated to sound the potential deposit (Fig. 11). An ashy midden (Ash 1) was located at *c.* 0,25-0,3 m below the surface and it was identified as the source of the plough dragged surface material. Subsequent excavation of the ash deposit indicated that it was a stratigraphically complex deposit, with at least three superimposed ash deposits, and at least two spatially separated lateral deposits (north and south of the intersection of squares). The ash deposits were probably sweepings from domestic hearths. Each was separately excavated. The ash was deposited into a artificially-made slight depression that was dug down to the rock substrate.

The area surrounding the midden deposit was then excavated (over *c.* 140 ^{3}m) exposing the presence of three grain-storage pits (Fig. 11). Each of the pits was re-used at the end of its storage pit life phase as a refuse pit, and filled with a variety of debris. The two deepest pits were found close together in the southern end of the area (pits 1 & 2). Pit 1 was the deepest (*c.* 1.4 m), and extended straight down through the rock substrate for most of its length. It seems to have slowly filled up over time. Pit 2 was much shallower (*c.* 0,90 m), but filled more rapidly as evident by the differing nature of the deposits and their content. Both pits were filled with domestic debris including both broken upper and lower grindstones, ceramics, ash and bone. They were both dung lined which indicated their prior function as grain storage pits. The fill of pit 2 reflected its final special history of use. The fill was a stratigraphically complex series of superimposed deposits (Fig. 12). At the bottom of the pit, four large cow bones were found. These appear to represent some kind of ritual activity signalling the advent of a new phase of use for the pit as suggested by the disposal of essentially unbroken and still useful mortars and pestles. The middle and upper horizons were rapidly deposited. They contained an unusually large number of large and unbroken upper and lower grinding stones, ceramics, animal bones, mixed with ash. Pit 1, by contrast, contained broken grinding stones but no large pieces of ceramics or bones. These deposits beg further interpretation.

Pit 3 was in the northern end of Midden Deposit 1 (Fig. 13). It was much shallower (*c.* 0,4 m) and contained two major horizons. The lower horizon contained large fragments of broken pots mixed with ash and animal bone fragments. The upper horizon contained a large inverted globular ceramic pot. Subsequent excavation revealed that the pot contained the burial of an infant. The infant was face-down in the deposit, implying that it was lying on its back in the pot with its face up toward the mouth of the pot, as the pot was being carried to the pit. The pot was inverted into pit and the infant fell forward (Fig. 14).

The cultural contents of the deposits in this area strongly suggest a domestic-type space. This was the first time that such an activity area has been identified and extensively excavated on the site. Further, Midden 1 yielded a large ceramic and faunal sample which will be of interest during later analysis for comparison between those occurring in the Dung and Mound Areas. Based on ethnographic models, the latter could be presumed to be essentially a male activity areas whilst Midden 1, representing domestic space, can be presumed to be a predominantly female locale. The presence or absence of specific vessel classes and faunal body parts within the respective locales can potentially provide valuable insights into gender and other social relations in EIA society.

The large ash deposit was probably the repeated deposition from a single kitchen area, that was probably located in the unexcavated areas to the south or west of the excavated area. It is likely that the structures associated with Midden 1 are located to the south or west of the excavated area. This conclusion is based upon the relative distribution of storage, refuse and living areas in ethnographically documented household compounds from

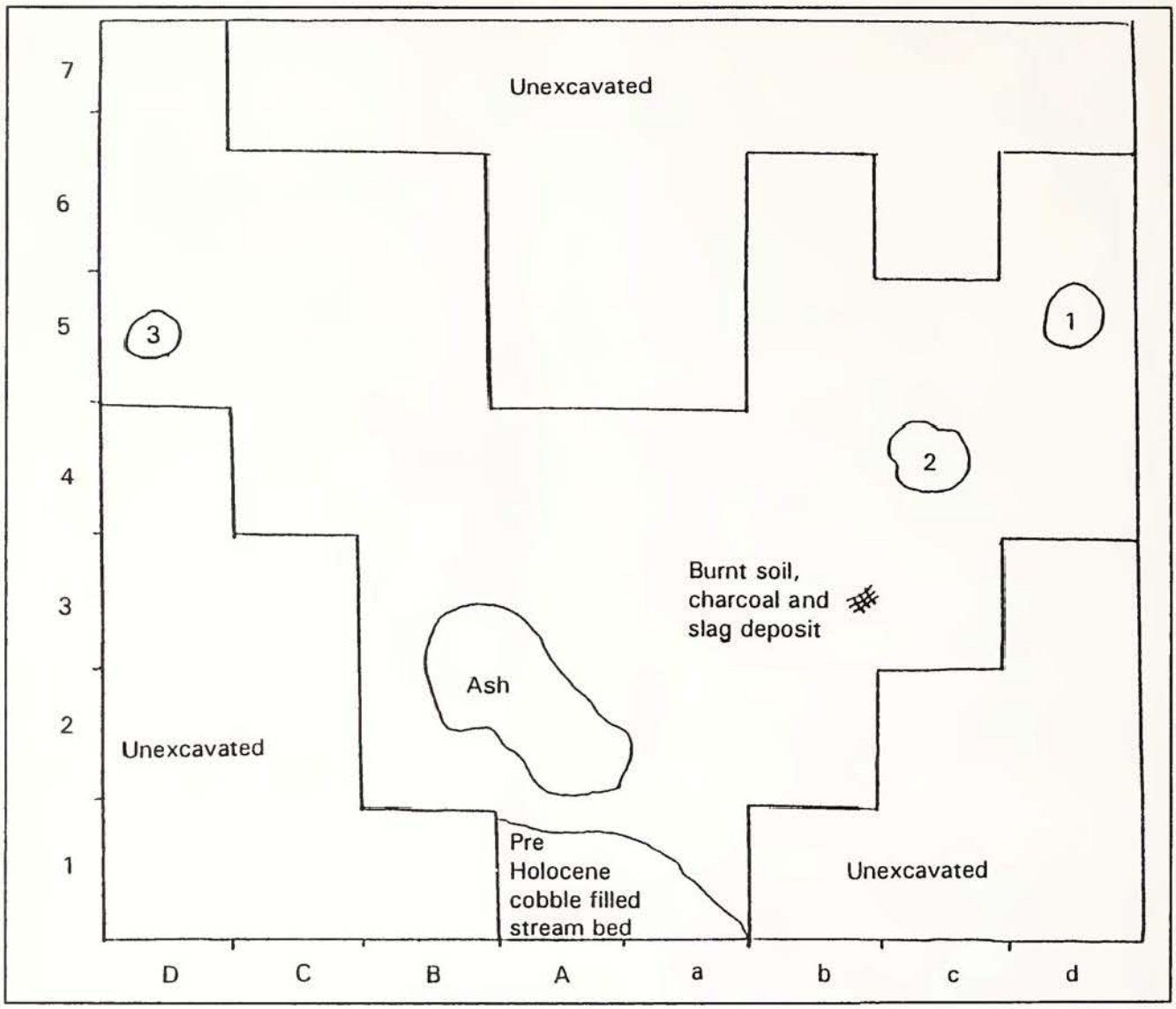

Fig. 11. Plan of Midden 1.

this region, given the nature of the slope (sloping from west to east) and the semicircular distribution of pits and ash deposit. This possibility will be investigated in future seasons. There is little likelihood that the this domestic area extended to the north or east based upon the surface collections since scrapes 3 and 5 yielded little cultural debris to the north and east of Midden 1.

Midden Deposit 3 (Ivory Midden)

A third potential domestic activity area was identified during the course of the systematic surface collection of scrape and ploughed area 4 (Fig. 4). This surface hot-spot is located in the NE sector of the site (*c.* 100N/60E) and was identified as a domestic area on the basis of the surface artefact classes - typical EIA grinding stones, and a range of ceramic vessel types used for food preparation and storage. This area is an equivalent distance from the Dung and Mound Area as the other already identified domestic activity areas (Daga Area/ Midden Deposit 2 and Midden 1). The former, we now believe, are centrally located in the layout of the site.

An enigmatic find in this area was a split hippopotamus canine tooth. Maggs (1984a) and Loubser (1993) have recorded hippo remains at the site and, given its riverine locality, exploitation of hippopotami for meat and ivory by the inhabitants of Ndondondwane can be expected.

Coring has indicated that *in situ* deposits are present below the plough zone (± 0,3 m) and are thus spared from potential damage by ongoing ploughing activities. The Ivory midden (Midden 3) is located close to the northern boundary of the field and we suspect may extend partially beyond the existing collapsed fence-line. It will be the focus of excavation in proceeding field seasons.

Site Taphonomy

Pre-excavation attritional processes

During the foregoing survey and subsequent excavations, a number of processes were identified as affecting the stratigraphic integrity of deposition, and assemblage

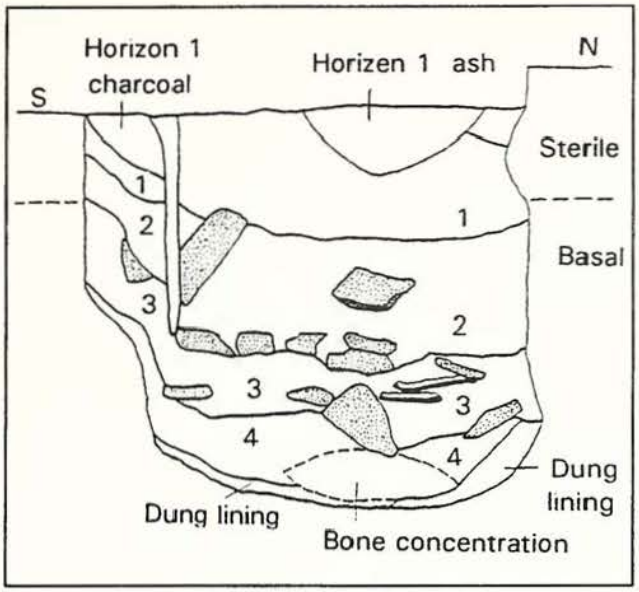

Fig. 12. Profile of pit 2 in Midden 1.

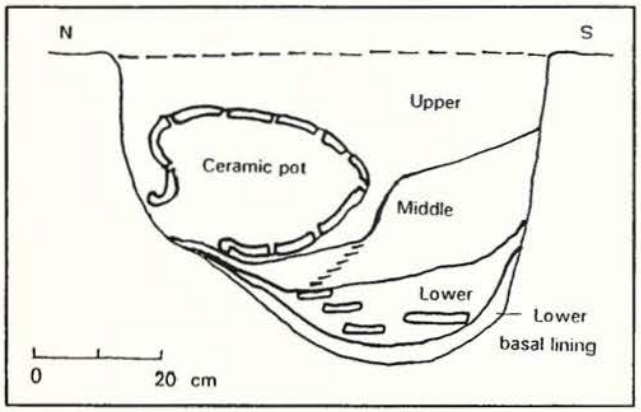

Fig. 13. Profile of pit 3 in Midden 1.

attrition. These are important to identify in order to understand the ways in which deposits and assemblages have been modified since they were original formed.

The local soils are intrinsically acidic and consequently organic remains tend to be poorly preserved, except in midden and/or ash deposits where an alkaline micro-environment is created. Thus, organic remains that have been disturbed by plough actions and have subsequently become incorporated in the plough zone suffer relatively rapid deterioration. There is also little evidence of organic remains in the cultural horizon beyond the midden/ash deposits. This is not a reflection of depositional behaviour, but reflects local soil pH. Pits, because of their use as domestic debris dumps, including hearth-ash, tend to have relatively alkaline deposits and consequently good organic preservation. However, even those bones that were recovered in the ashy deposits were extensively leached and were, as a result, very fragile. If handled roughly they simply begin to fragment and disintegrate.

Fig. 14. Photograph (95-22-32) of burial pot and infant skeleton in the upper horizon of Pit 3. The lower horizon is fully visible since the overlying upper deposit was mostly removed. Facing magnetic NE.

Downslope erosion and the formation of colluvial deposits have, contrary to the situation in most other EIA research areas in the province (Maggs 1984b, Maggs and Ward 1984), had a positive effect upon preservation of the site. A substantial deposit has accumulated in the lower NW sector of the site above the cultural horizon, sealing and preserving the cultural horizon (Transect 1). In the SW sector of the site (Furnace 1), erosion has brought the base of the cultural deposits almost to the modern surface. In the eastern half of the site, with its more substantial slope, downslope erosion does not appear to have damaged the cultural horizon as there has been a continual replacement of the A-horizon from deposits further up slope.

The major taphonomic agent across the site has been, and remains, modern mechanical ploughing. The entire site-area within the modern fence was first ploughed in the 1950's (C. Wilmore, pers. comm.) and subsequently only the lower half of the site was ploughed with any regularity. These activities have created a plough zone of variable thickness, its maximum depth being 0,30-0,40 m over the burnt floor feature, and it is at its thinnest over Furnace 1 (50 mm). The thinness of the plough zone here is due to the proximity to the surface of a hard baked cultural horizon in this area that sits atop a natural hardpan rise in the local topography.

On the upper slopes or east half of the site, the thickness of the plough zone is also affected by site topography. This area has a substantial slope and consequently colluvial deposition has been limited. This in contrast to the situation on the lower or west half, where the terrain is more level, and the colluvial overburden was observed to exceed 0,80 m in places. Ploughing has thus caused greater destruction of the upper part of the cultural horizon in the up slope areas, decontextualizing embedded artifacts and effecting substantial assemblage attrition. Relatively fewer bones were recovered in the plough horizon here, and ceramics were more fragmentary than in the corresponding plough zone/cultural horizon interface further down-slope.

All of the excavated deposits experienced a varying degree of bioturbation, the principle agents being tree roots and burrowing rodents. These were mapped whenever identified. For example, a number of charcoal concentrations within the cultural horizons may well be derived from the root stock of post EIA occupation clearing and burning of the succeeding woodland cover. These charcoal concentrations were occasionally sampled for later species identification.

The use of unskilled labourers and the hard nature of the sedimentary matrix in the cultural horizons resulted in unavoidable damage to much of the retrieved bone samples. This was exacerbated by the need to use picks, geological hammers, and other coarse tools in order to separate bones from their hard matrix. During formal faunal analysis the extent of this damage will be have to be monitored.

Post-Excavation Taphonomic Strategies

All sediments from the cultural horizons, pits, and associated deposits were sieved daily immediately after retrieval through 3-5 mm meshes ensuring the systematic recovery of remains. Only the plough zone sediments were not sieved. This ensured that differential collection by artifact class or size would not be a factor in the eventual analysis.

In the ceramic class, all diagnostic shards were measured by volume and retained. At the beginning of the field season (April-June), the miscellaneous and nondiagnostic shards were measured by volume per excavation unit and discarded. Culturally-modified stone was recorded, significant type-pieces selected for curation, and the rest discarded after being measured by volume. This practice was undertaken in order not to burden limited curation space in the housing institution of the collections.However, this practice was abandoned and all nondiagnostic ceramic shards were retained during the second half of the field season (July-August) after agreement with the Ondini Cultural Museum to curate all the materials.

Maggs' and Loubser's collections are currently housed in the Natal Museum, Pietermaritzburg and all the retained excavated remains from the 1995 project have been transferred to the Ondini Cultural Museum for curation and analysis. It is planned that their ultimate storage destination be in Pietermaritzburg in order that all the collections from the site be housed together.

DISCUSSION AND CONCLUSION

A rapidly expanding local population's increased needs for subsistence agricultural land and the increasing tempo of sorely needed infrastructure development have begun to place growing demands on the integrity of a number of major archaeological sites in the Thukela Basin in the last decade. The lower basin in particular contains some of the best preserved EIA village settlements in South Africa and these consequently constitute a major cultural resource of national significance. These, however, are now under ever escalating threat of destruction[1].

The 1995 excavations clearly indicated that the site still has a vast and yet untapped potential for enhancing our understanding of EIA life ways. However, in order to achieve this, more extensive investigation of the site was deemed necessary in order to properly excavate the identified deposits, adequately recover the material, and analyse the results. This was not possible to fully accomplish within the 1995 season. By the end of the field season, our excavations had confirmed the uniqueness of Ndondondwane. It was clearly a single occupation site spanning possibly only a few decades and only a single ceramic-phase (Fig. 15); a rare occurrence on sites of this nature in the region.

As such, it forms an important test case for eventually discerning which of the proposed modes of social and economic organization is representative of the EIA of southern Africa. Most other comparable large and intact EIA settlements in the region exhibit multiple occupations, often spanning more than one ceramic phase and several hundreds of years. This invariably results in a juxtaposition of cultural evidence, which often confounds interpretation of the relationships between various phenomenon on the site. The situation is obviously compounded when dealing with more complex issues, such as intrasite social and economic organization.

The preliminary results of the excavation indicate the existence of a well-ordered community. At the centre of the community lay structures and activity areas associated with a variety of what are considered to be male-associated activities in traditional eastern Bantu culture (a large men's hut, a live-stock byre, iron furnaces, and iron and ivory working areas). Around this core area, moving up-slope from the river, was a large open area, with very little debris and no evident features. It is feasible that this may have been the location of kitchen gardens and fields, the extent of the settlement providing a barrier, and hence protection for crops, from wild ungulates and graminivorous birds. It was probably an area where the community as a whole could gather.

At the north end of the site, still relatively isolated from the domestic complexes, lay a charcoal preparation (pre-smelting) area. It was also probably associated with male activities, given its isolation and the ethnographic association of males with iron production. At least three domestic household complexes were found in a large semi-circle (NW, W, and SW) around the central open area. They are equidistant from the activity areas at the centre of the site. The three domestic midden deposits are areas where household activities took place (*viz.* food processing and storage, sleeping, tool repair, ceramic production, *etc.*). Such domestic complexes are the traditional domain of women in eastern Bantu ethnographic contexts. This spatial distribution of activity areas appears to tentatively support Huffman's Central Cattle Pattern model (1993) for the Early Iron Age in its broad outlines - with a central area dominated by male activities (cattle keeping, iron production), surrounded by a plethora of domestic (female focused) compounds. The domestic compounds are distributed in an arc from the central area of the site and are almost equidistant from

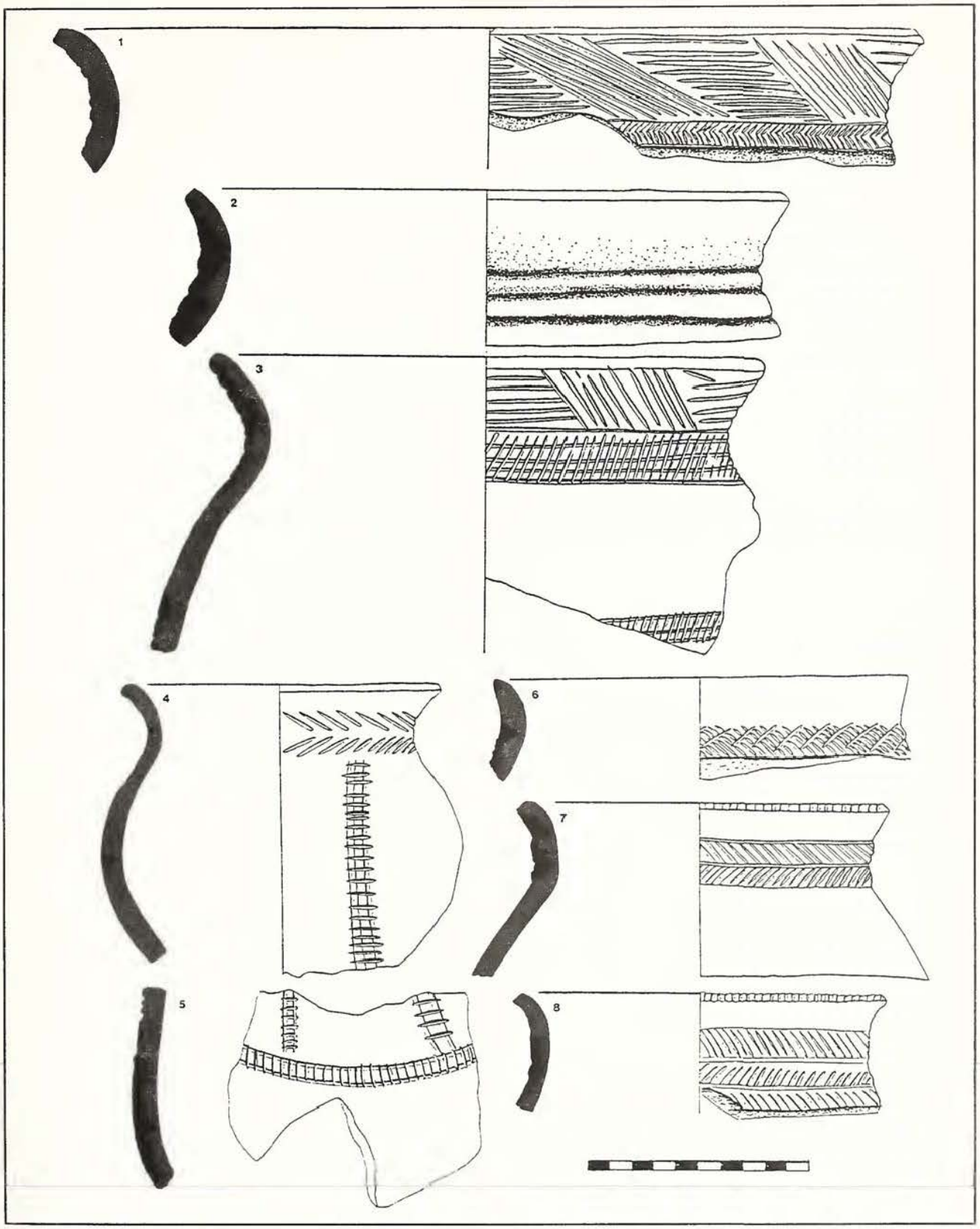

Fig. 15. Drawing of some of the EIA ceramic diagnostic types characteristic of Ndondondwane found during the excavations.

the central hut. Further research at the site should provide a more comprehensive test of the model.

Ndondondwane's uniqueness lies in its relatively undisturbed state of preservation and its apparent short term occupation[2], thus providing an opportunity to elucidate the spatial organization of a single community during the Early Iron Age of the region. This uniqueness is further illustrated by the number of separate teams that

have attempted to explore it (five different teams over 17 years)[3].

ENDNOTES

1. Informed by this, and the previous archaeological research in the lower Thukela region (Maggs 1984; Loubser 1993; Van Schalkwyk 1994a, 1994b, 1995), the KwaZulu Monuments Council saw fit to provide seed finance for an extended multi-year research programme to ascertain the extent of these cultural resources and what conservation strategies should be put in place. This drew the attention of international research workers and in June 1994 the KMC approved a collaborative research project with the Department of Anthropology, University of Manitoba, Canada, in which it was hoped that international funding could be secured to finance the project for the long-term. The inception of the international project began in July 1995, just as the CRM contract was winding down. At that point, the Canadian team arrived in the Thukela basin and participated in the Ndondondwane research project from July 15 until August 30, 1995.

2. Whitelaw's (1995) report to KMC on the statutory recognition of archaeological sites recommended that the three major EIA sites of the Lower Thukela River basin (Mamba, Wosi and Ndondondwane) be declared as provincial monuments (Provincial heritage sites) and to be jointly conserved within an historical preservation area or cultural conservancy. He further proposed that an EIA site museum/interpretive centre be located at Ndondondwane in the light of the proposed new Maphamulo-Eshowe transport axis. These sites, located at accessible distances downstream of the presently rustic tourist resort of Shu Shu Hot Springs would further, attract even greater public focus; particularly if the latter's development potential were soon realised, and they accepted by the KMC which is proceeding with the envisaged proclamations. It is clear that Ndondondwane still retains enormous potential. It would then be an undeniable shame if this scientific and community resource were to be destroyed under the guise of "development". The site's merit do not however merely lie in its value as a research resource, but also as a marketable tourist asset in a local development *scenario*. It has a very real potential as a resource of both seasonal and permanent employment in a presently impoverished local community.

3. Investigation of the site has never been able to be brought to a successful conclusion for a number of logistical reasons, such as size and the lack of sufficient long-term support funding, which may finally be assured through the international collaboration of the present research team.

ACKNOWLEDGEMENTS

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