Southern African Field Archaeology 6:3-19. 1997.

JAKKALSBERG A AND B: THE CULTURAL MATERIAL FROM TWO PASTORALIST SITES IN THE RICHTERSVELD, NORTHERN CAPE*

LITA WEBLEY
Archaeology Department, Albany Museum,
Somerset Street, Grahamstown, 6139

*Accepted for publication March 1997

ABSTRACT

Radiocarbon dates from the open sites of Jakkalsberg A and B on the banks of the Orange River in the Richtersveld cluster closely around 1300 years ago, suggesting that they are broadly contemporary. Faunal remains are predominantly those of young sheep and the pottery may be characterised as typical of the Later Stone Age. Although the sites conform in certain respects to the pastoralist norms proposed by Smith *et al.* 1991 for the Western Cape, various discrepancies are discussed with the aim of expanding the debate on what constitutes a pastoralist site.

INTRODUCTION

Jakkalsberg A and B are two, large open sites on the southern banks of the Orange River (28.10.50S; 16.53. 15E), some 5 km from the gates of the Richtersveld National Park in the Northern Cape (Fig. 1). The background to the discovery of the sites in June 1992 and subsequent fieldwork in November 1992 have been detailed elsewhere (Webley in press; Brink & Webley 1996; Miller & Webley 1994). Although these sites are now open to the elements it is important to note that they were in the process of being first exposed by the wind when they were sampled. They had clearly been covered by the shifting wind-blown riverine sands soon after they were abandoned some 1300 years ago.

An initial appraisal of the sites with their large ceramic concentrations suggested that they represented pastoralist campsites. These open sites are also unique in the area in that they contained large numbers of faunal remains which presented an opportunity for examining the diet of the inhabitants. Furthermore, the distribution of stone and pottery remains over a wide surface allows an analysis of the spatial configuration of the sites with a view to comparing them to historical accounts and ethnographic observations on pastoralist camps. Since it is extremely difficult to locate and identify pastoralist campsites in the archaeological record, Jakkalsberg offered the possibility of resolving many unanswered questions.

One of the aims of the analysis was to test Smith *et al*'s (1991) claims with respect to identifying pastoralist sites based on criteria derived from excavating sites in the Western Cape. They have continued to assert (Yates & Smith 1993; Smith & Jacobson 1995;) their model of hunter-herder interaction over the competing views of

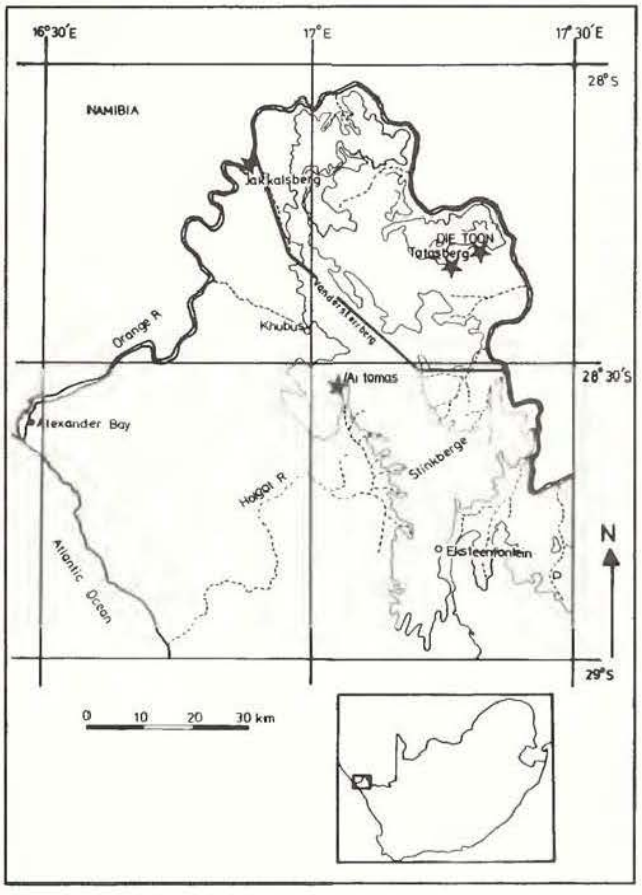

Fig. 1. Map of the Richtersveld, indicating borders of the National Park and the location of Jakkalsberg as well as other archaeological sites investigated in the area.

Schrire (1992; 1993) and Kinahan (1994-5; 1995). Smith *et al*'s (1991) view is that herders and hunters

represented two quite distinct groups who "followed different but interrelated orbits" (Yates & Smith 1993:99) over a period of 2000 years. They have postulated that the nature of the relations between hunters and herders would have been unequal. The incursion of herders into the Western Cape would have driven hunters either into refugia in the mountains or else they would have been absorbed as client herdsman. They characterise hunter sites as having relatively large numbers of formal stone tools with an emphasis on fine-grained raw materials, large numbers of game remains, small ostrich eggshell beads and small numbers of ceramics. Herder sites, on the other hand, have an informal stone tool assemblage manufactured mainly of quartz and quartzites, large ostrich eggshell beads and high densities of ceramics and domestic stock.

They reject the hypothesis proposed by Elphick (1985), namely that hunters and herders "were part of a single group in a cyclical economic system that varied with the fortunes of the actors" (Smith *et al.* 1991). Schrire (1993), in her critique of Smith *et al*'s (1991) model noted that the signatures of herders and hunters are not invariable, and that sites do not neatly fall into one group or the other. Yates & Smith (1993) have responded that while there was probably an exchange of material culture between hunters and herders, this would have been a one-way trade "across a permeable economic and cultural "boundary" from herders to hunters" (*ibid*:97). While larger beads or ceramics distinctive of herder groups may on occasion be found on hunter sites they are able to distinguish between them "on the balance of other cultural traits" (*ibid*:98). In this description of material culture from Jakkalsberg, the sites are measured against the criteria set out by Smith *et al.* (1991) in order to determine whether the archaeological signatures of herders and hunters, which they claim to have indentified in the Western Cape, has wider applicability to other areas where Khoekhoen pastoralists are known to have settled historically.

METHODS OF COLLECTION AND EXCAVATION

During the initial rescue work at the site, the burial as well as a total of 81 square metres of material was collected from the area of densest occupational debris at Jakkalsberg A (Fig. 2). Hearth 1, exposed by the wind while we were working on the site, suggested that there was at least ten centimetres of deposit beneath the surface material. On returning to the site in November, a further 18 square metres was collected from the surface of site A so that a total of 99 square metres is represented in Figure 2. During the four months since our preliminary work, more material had been exposed by the wind, including three hearths. During follow-up work at site A, we collected material from 26 squares which we named sub-surface (SS) material. The division between surface and sub-surface material is quite arbitrary as there is no stratgraphic layering which would suggest that we are dealing with successive occupation of site A.

While we were undertaking a surface collection of material at site A, we noticed a concentration of similar material some 40 m to the south. The B site is bounded to the north by a small hill and to the west and south by a dry river bed (Fig. 2). Material from 38 square metres was collected and excavations undertaken in those squares (rows K, J and I) which abutted the hill. Although no visible stratigraphy was observed during excavations, some hearths were superimposed one above the other, indicating that the site was occupied on a number of occasions over a relatively short period of time. It was observed that lenses of dense bone and stone fragments were separated from each other by several millimetres of sterile soil. For this reason, the soil was removed in 50 mm spits, termed MOU (minimum occupation units) until the basal sterile soils was reached.

The deposit at both sites consists of fine, quartz-grained river sands which is constantly being redistributed by the prevailing westerly winds and the sparse vegetation in this area means there is very little humic accumulation. The deposit was characterised by several large chunks of shiny, shale which closely resembles specularite. However, Prof J. Moore, Department of Geological Exploration, Rhodes University, maintains it is a naturally occurring shale (representing an old Pleistocene River terrace) found along the banks of the Orange River. Even though outcrops of this stone were observed some 2 km upstream of the site, there are no outcrops in or around the site and the conclusion seems inescapable that these shiny shale fragments were in fact collected and introduced to the site. Some of these shiny shale fragments are coated in red ochre powder.

Burial

A number of large quarzite and granite stones indicated the position of the burial but the wind had removed the underlying sand so that the stones were found lying directly on top of the human remains. Only fragments of the skull, a number of teeth, and the upper arm and a scapula were still recognisable. The teeth suggested that the individual was probably approximately 4-5 years of age. Fragments of the skull were stained red and there was was a very high concentration of ostrich eggshell beads around the burial, many being very weathered. A total of 27 complete and 29 broken beads from only one square suggests that these beads are in fact associated with the burial rather than being a spill-over from the occupation of the main site nearby. This conclusion is supported by the mean diameter sizes of the beads which is discussed further below. The large number of quartz chips found in some of the squares, suggest that some of the adjoining artefactual material from the main site has been incorporated with the burial. Unfortunately, the contemporaneity of the burial with the open site can only be established by dating the human bones but they are too poorly preserved to attempt this.

Circular feature

The white 'dung' circle excavated in I34 contained small, worm-like tubes which may be due to the action of

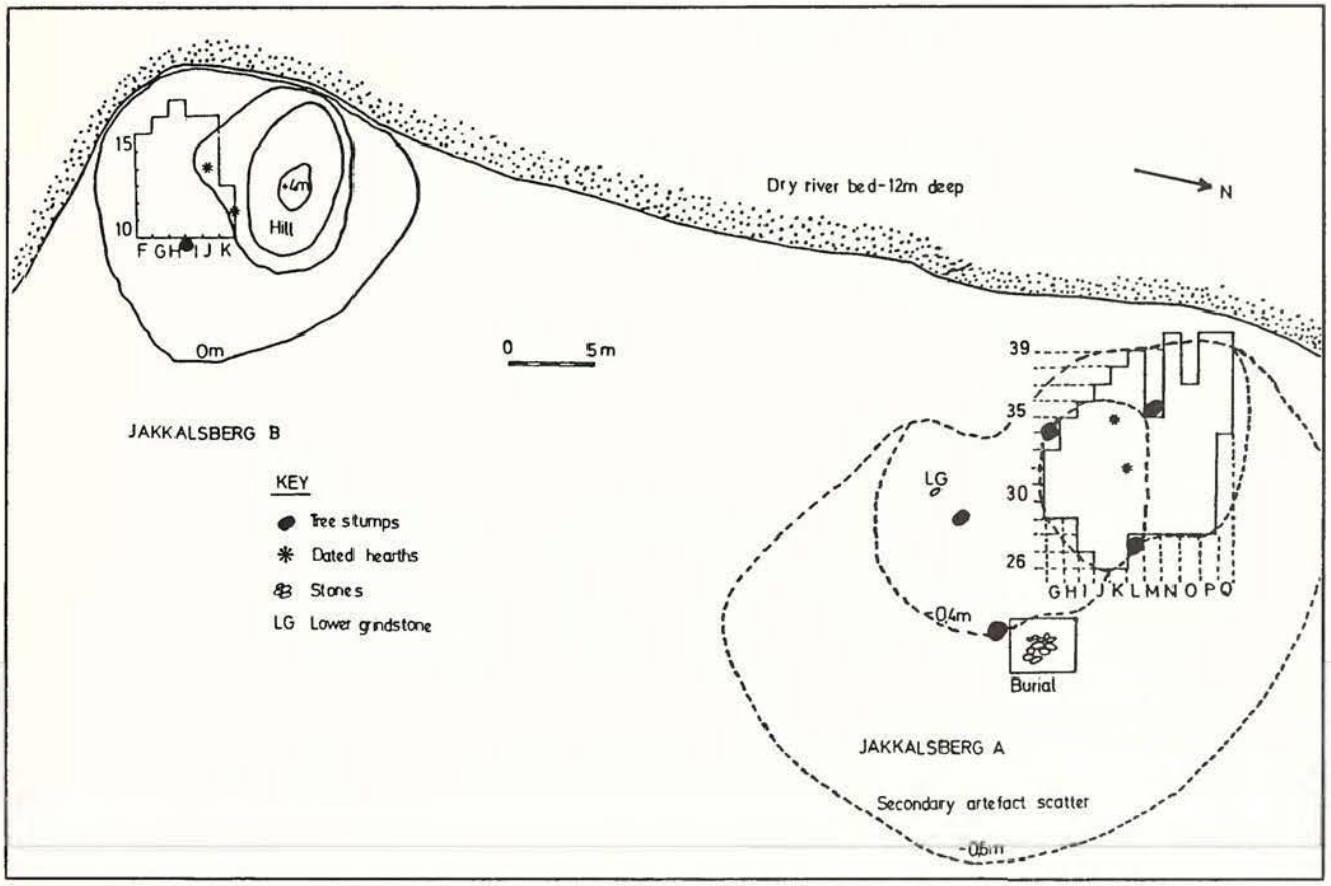

Fig. 2. Map of the location of Jakkalsberg A and B on the banks of a dry river bed, some 300 m to the south of the Orange River.

termites. The circle formed a crust, extending laterally beneath the loose brown soil and may be a small ash heap rather than a dung patch.

DATING

Hearth 1, exposed by wind during the initial visit to the site, was carefully cleaned out and the charcoal sent for radiocarbon dating. A date of 1330 ± 60 BP (Pta-5958), which calibrates to AD 664(691)783 was obtained. On re-visiting the site in November, it was observed that more objects on the sampled surfaces had been exposed by the wind, with a further three hearths being noted. They were plotted and charcoal collected. Hearth 2 dates to 1300 ± 25 BP (Pta-6100) and yields a calibrated date of AD 691(762)777. These two dates, from hearths only 4 m apart, suggest that the entire site represents a period of occupation in the 7th century AD. There is no evidence for earlier or later re-occupation of the site.

During preliminary collections at site B a hearth was observed on the northern edge of the small hill. After cleaning off the surface soil from this hearth in square K11, it was photographed and a charcoal sample taken for dating. It produced a date of 1420 ± 25 BP (Pta-6122), calibrated to AD 640(652)660. It is slightly older than the date obtained for hearth 2 lying across squares J13-J14 (MOU). A date of 1380 ± 50 BP (Pta-6101) was obtained from this hearth which is associated with a large fragment of iron (Miller & Webley 1994). The date is calibrated to AD 648(668)691 (J. Vogel pers. comm.).

CULTURAL MATERIAL

The stone artefact assemblage

The A site

The stone artefact assemblage from the A site contains very few formal stone tools. A total of 484 artefacts were found in the burial area (of 12 square metres) but no formal tools are present. The 99 square metres of the main site contained 9519 flaked stone tools and a further 333 manuports and river pebbles (Table 1). There are five (5) formal artefacts; two segments, two miscellaneous retouch pieces and one miscellaneous backed piece (Fig. 3) and their location with respect to the hearths appears to be quite random (see Miller & Webley 1994: Fig. 3). Formal tools amount to 0,05 % of the lithic assemblage. Two utilised flakes, three grindstone fragments and two flaked hammerstones were also recovered. A single large lower grindstone was plotted (Fig. 2) but not collected and a number of round, quartzite river cobbles, one heavily coated with red ochre, were found on the outer margins of artefact collection.

Table 1: Stone artefact frequencies and raw material from the main site of Jakkalsberg A.

	Quartz	%	Quartzite	%	Other	%	Total
Chips	5933	80,1	1144	56,8	40	9,3	7118
Chunks	110	4,5	138	6,8	37	6,3	285
Flakes	756	10,2	627	31,1	40	9,1	1423
Bladelets	7	0,1	-	0,1	-		9
Cores	578	7,8	91	4,5	-		669
River stones	-		-		200	45,6	200
Manuports	5	0,1	40	0,5	117	26,7	132
Ochre	-		-		3	0,6	3
Total Waste	7389		2012		438		9839
Utilised Flakes	1	100,0	-	25,0	-		2
Grindstone fragments	-		-	50,0	-	50,0	3
Hammer-stone fragments	-		1	25,0	1	50,0	2
Total Utilized	1		-		-		7
Backed flake	-	25,0	-		-		1
Segment	-	40,0	-		-		2
MRP	2	40,0	-		-		2
Total formal	5		-		-		5
Grand Total	7395	75,0	2016	20,5	440	4,5	9851

Stone artefacts consisted mainly of chips (75% of the total assemblage) and the greatest concentration of chips lies to the east of the existing hearths (Fig. 4). There are at least 96 artefacts per square unit from the surface area. One unusual artefact collected outside the gridded area by helpers during the first two day 'rescue dig' is that of a gun-flint of chalcedony or flint (Fig 3:6). It has characteristic bifacial crushing along its edges and microscopic examination of these margins confirms the presence of rust (Binneman, pers. comm.).

The stone artefact assemblage from the sub-surface unit consisted of 573 flaked pieces, and 31 river pebbles (Table 2). Only one formal stone tool, a segment, was recovered from this collection (0,1%), and no utilised pieces were found. The artefact density is highest on the surface while the sub-surface unit contains only 14 artefacts per square unit or 6,4 artefacts per bucket. This suggests that there has been some recent deflation of the intervening soil matrix.

With regard to the raw material, approximately 20% of the artefacts from the A site were on quartzite, the remainder being on quartz. Some 200 chalcedony or agate pebbles were recovered on the site, their function remains unclear as they clearly originated from the river but none had been flaked. Raw material frequencies from the burial area, which is slightly removed from the main concentration of occupational debris, resembles that of the sub-surface unit at Jakkalsberg A. Quartz comprised 51% of the artefacts, 39% were of quartzite and 9% consisted of silcrete, chalcedony, shale and granite.

The B site

No formal tools were recovered from this site (Table 3). Only MOU2 contained utilised pieces, in this case two upper grindstone flakes. The surface unit contained 2583 artefacts, excluding lithic manuports and ochre, which amounts to 22 artefacts per bucket. The densities for the other units are: 4,5 artefacts per bucket for

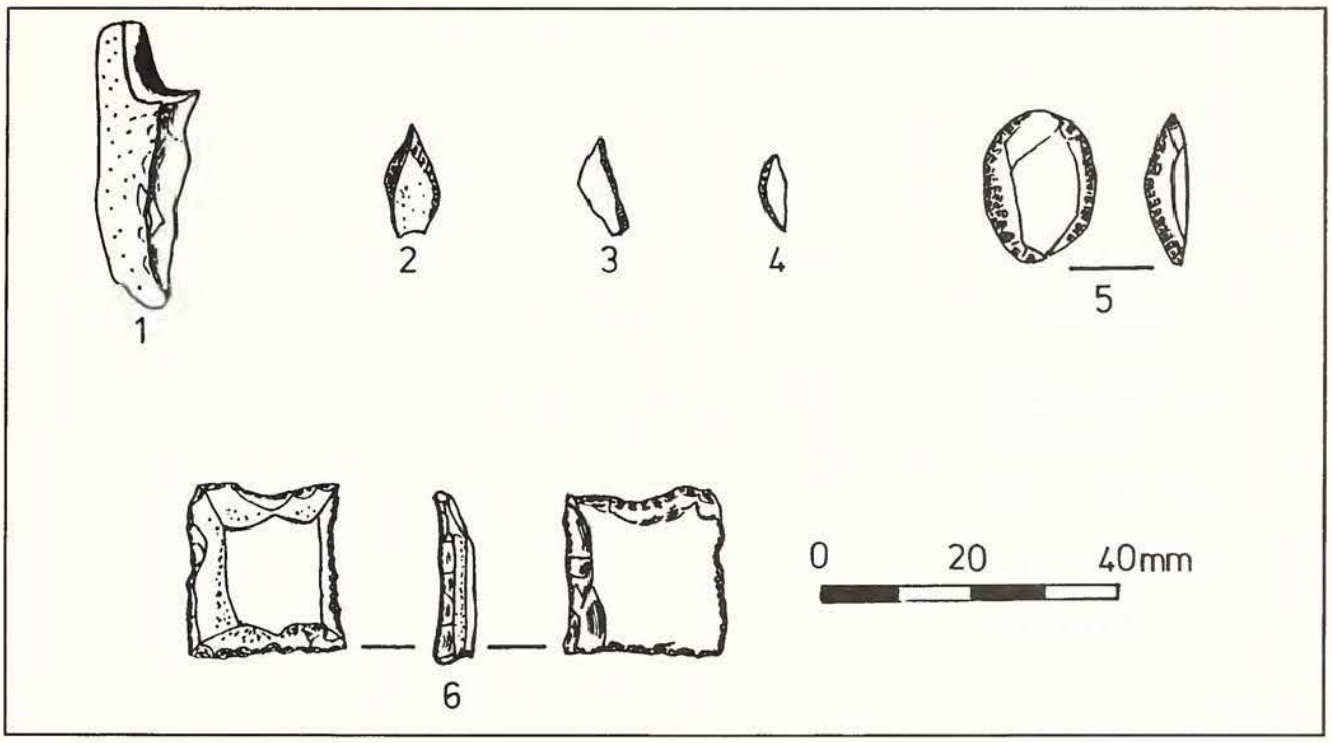

Fig. 3. Stone artefacts from Jakkalsberg A: 1 - quartzite cortical flake from Q37 S; 2 - quartz miscellaneous retouch piece from K37 S; 3 - quartz backed flake from P28 S; 4 - quartz segment from J26 S; 5 - chalcedony scraper from the surface collection along the outer margin of the site; 6 - flint/chalcedony gun-flint found along the outer margin of the site.

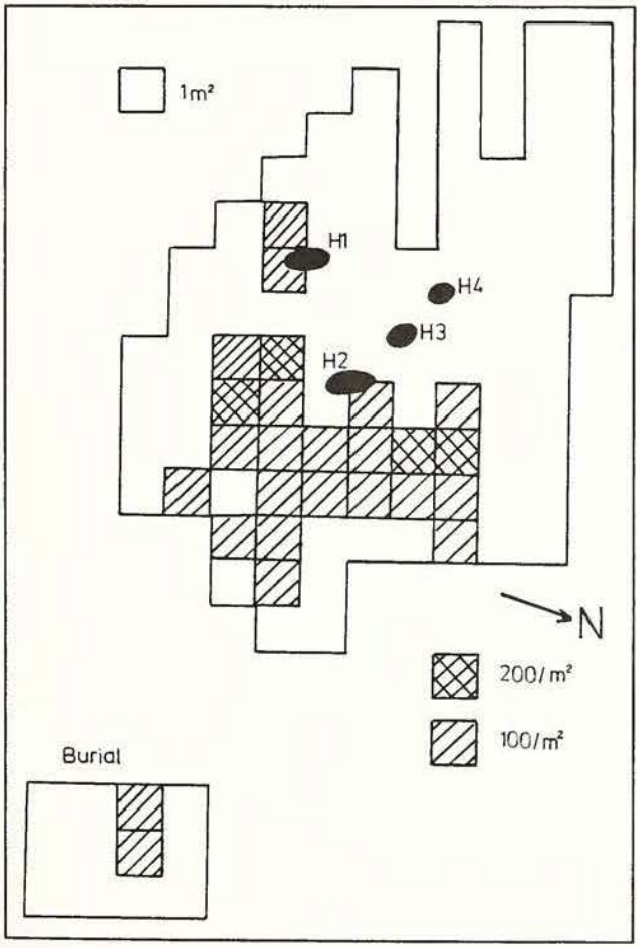

Fig. 4. The spatial distribution of quartz chips at Jakkalsberg A.

MOU, 5 artefacts per bucket for MOU2, 3 artefacts per buckets for MOU3 and 1,5 artefacts per bucket for MOU4.

Approximately two-thirds of the artefacts were manufactured on quartz, the other third on quartzite (Table 4). The source of the quartz is not obvious but the quartzite clearly derives from river cobbles. Small percentages of other raw materials were also recovered such as silcretes, granites, and shales. At least four of the shale pieces resemble palettes, one fragment containing ochre staining. Jakkalsberg B, like the A site, contained large numbers of small, unflaked river pebbles. Furthermore a few quartz crystals and crystal flakes were observed at the B site but not at the A site.

Ochre

Ochre fragments from the A site are quite scarce, with only three tiny pieces being recovered. Ochre staining was also observed: on the skull fragments from the burial; in the aperture of a single ostrich eggshell bead; on one animal bone; a bone peg and one *Unio caffer* fragment. In addition three lumps of white clay were recovered from square M33, heavily coated with red ochre. The *Amalda obtusa* shell recovered from the sub-surface unit also contained red ochre inside its apex.

Jakkalsberg B is distinguished from the A site by the abundance of ochre found in the deposit and adhering to the artefacts and bone. A 1,248 kg lump of fine-grained, powdery red ochre was found immediately outside the collection area (Fig. 2). Sixteen ochre fragments were found in the collection area (Table 4) but the majority are very small, less than one centimetre in size, and red.

Table 2: Stone artefact frequencies and raw material from the sub-surface unit at Jakkalsberg A.

	Quartz	%	Quartzite	%	Other	%	Total
Chips	192	62,3	112	46,8	-	1,8	305
Chunks	15	4,8	21	8,7	2	3,5	38
Flakes	51	16,5	92	38,5	15	26,8	158
Bladelets	1	0,3	-		-		1
Cores	49	15,9	11	4,6	1	1,8	61
Manuports	-		3	1,3	-	8,9	:
River pebbles	-		-		31	55,3	31
Ochre	-		-		1	1,8	-
Total Waste	308		239		56		603
Total Utilized	-		-		-		-
Total Formal	1	-	-		1		-
Grand Total	309	51,1	239	39,5	56	9,3	604

Table 3. Jakkalsberg B: Lithic artefact inventory.

	Surface	%	MOU	%	MOU2	%	MOU3	%	MOU4	%
Chips	1520	57,0	148	48,6	113	52,5	54	54,0	10	35,7
Chunks	130	4,8	11	3,6	10	4,6	3	3,0	3	10,7
Flakes	646	24,2	85	27,9	43	20,0	22	22,0	9	32,1
Bladelets	6	0,2	2	0,6	1	0,4	-	-	-	-
Cores	276	10,3	28	9,2	22	10,2	21	21,0	-	17,8
Manuports	64	2,4	25	8,2	17	7,9	-	-	-	3,5
Ochre	16	0,6	5	1,6	8	3,7	-	-	-	-
Q. Crystals Flaked	5	0,2	-	-	1	0,1	5	-	-	-
Total Waste	2663		304		215		100		28	
U.G. flakes	-	-	-	-	2	100,0	5	-	-	-
Total Utilized	1		-		2		-		-	
Total Formal	-		-		2		-		-	
Grand Total	2663		304		217		100		28	

* U.G. refers to Upper Grindstone

Only one fragment of yellow ochre was recovered. There is evidence to show that ochre was probably transported in ostrich eggshells and tortoise shells. Numerous fragments of ostrich eggshell were coated on their inner surface with red ochre. Furthermore, three tortoise carapace pieces were found in one square and a further eight in an adjoining square, at least half of which were thickly coated within with red ochre. The edges of the

Table 4. Jakkalsberg B: Lithic raw material inventory.

	Surface	%	MOU	%	MOU2	%	MOU3	%	MOU4	%
Quartz	1612	60,5	191	62,8	140	64,5	88	88,0	23	82,1
Quartzite	925	34,7	72	23,7	50	23,0	11	11,0	3	10,7
Sil./Chal.	3	0,1	1	0,3	1	-	-	-	-	-
Granite	5	0,2	6	1,9	1	-	-	-	-	-
Shale	6	0,2	-	0,9	1	0,5	1	1,0	-	-
Ochre	16	0,6	5	1,6	8	3,7	-	-	-	-
//khom	1	0,0	1	0,3	1	-	-	-	-	-
Other	26	1,0	-	-	1	-	-	-	2	7,1
River pebbles	64	2,4	25	8,2	17	7,8	-	-	-	-
Quartz crystal	5	0,2	-	-	1	0,5	-	-	-	-
Total	2663		304		217		100		28	

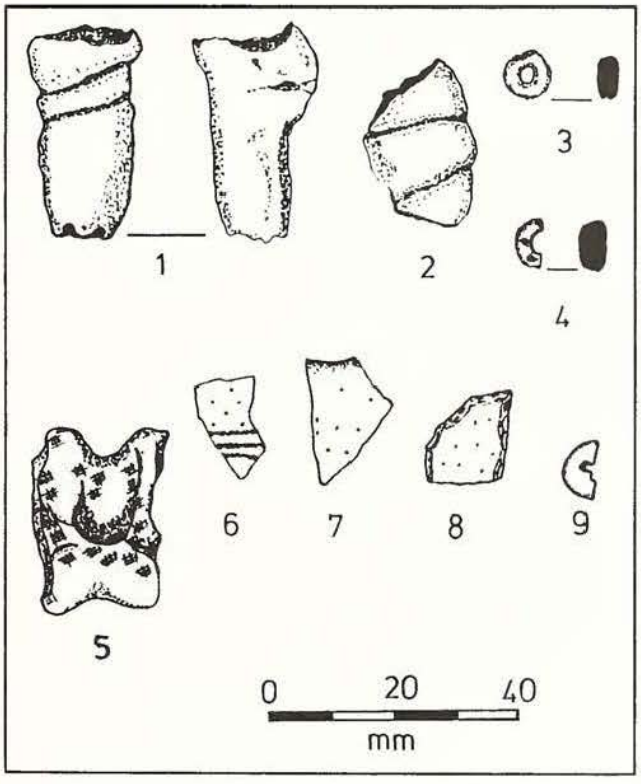

Fig. 5. Small finds from site B. 1 - ochre plug from J13 MOU; 2 - broken ochre plug from J13 MOU with string impressions clearly visible; 3 - ochre bead from I14 MOU; 4 - broken ochre bead from K12 MOU3; 5 - an *astralagus* from J12 S with hatching indicating red ochre; 6 - decorated OES from G15 S; 7 - an OES flask mouth from I11 S; 8 - an OES 'scraper' from G13 S; 9 - a broken *Unio* sp. button or pendant from H11 S.

tortoise carapace were not sufficiently rounded to suggest that they had been modified for use as a bowl, nevertheless they clearly functioned as some type of receptacle.

Many ostrich eggshell beads contained red ochre in their apertures, and interestingly many of the unfinished beads were also coated in ochre.

Red ochre was also combined with some bonding agent (possibly fat or tree resin) and one and a half red ochre beads were recovered (Fig. 5:3,4). They are very fragile and their preservation probably entirely due to the fact that they were buried. These beads differ from those found at other archaeological sites (frequently found strung on a necklace between ostrich eggshell beads - i.e. spacers) in being fairly large. Two unusual red ochre 'plugs' were recovered in a single square (Fig. 5:1,2), they too appear to have been manufactured of a combination of powdered ochre and some bonding agent. Flecks of white observed in one of the plugs suggests that the powdered ochre was combined with ash as well. The complete 'plug' shows signs of string impressions, suggesting that it was used to plug an object of fibrous origin, rather than hard objects such as an ostrich eggshell flask.

One *astralagus* and numerous bone splinters were found coated in red ochre. The splinters do not appear to have been used and the function of the red ochre is not known. Many of the shiny shale pieces recovered during excavations were found to be coated in red ochre. With respect to stone artefacts with red ochre coatings, two upper grindstone flakes of quartzite were found covered with red ochre. Ochre was also found on a number of flaked stone artefacts.

Pottery

The A site

Potsherd densities are fairly high, with the largest number of sherds recovered from one square metre being 55; 37 squares out of the 99 sampled contained 10 or more sherds. A great many fragments were found

Table 5: Potsherd frequencies from the burial, main site and sub-surface unit at Jakkalsberg A.

	Number	< 10 cm	Rims	Decorated Rims	Decorated pieces	Lugs	Mean thickness
Burial	12	1	1	-	-	-	5,9 mm
Main site	845	574	30	10	31	-	5,7 mm
Sub-surface	120	46	6	2	5	1/2	6,0 mm

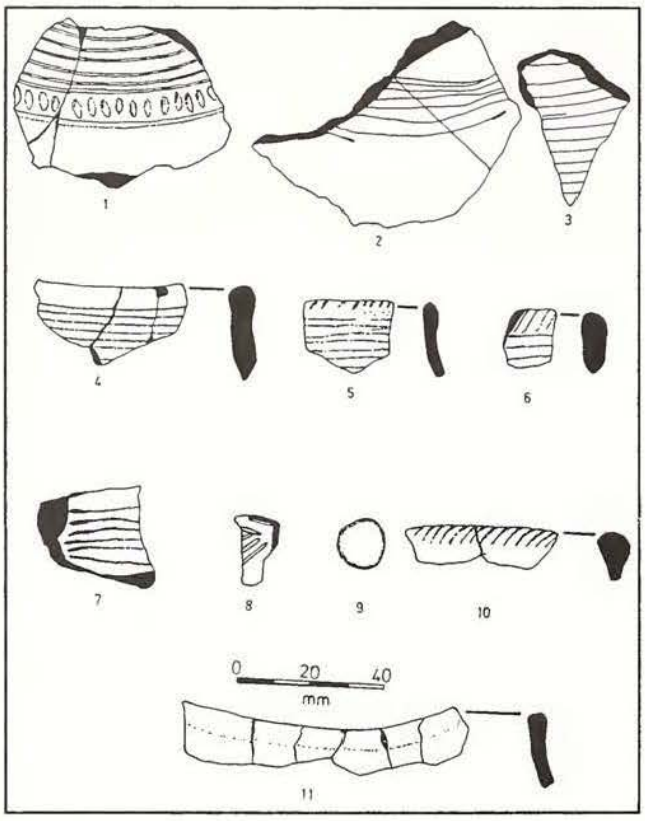

Fig. 6. Decorated potsherds and rims from Jakkalsberg A. 1 - J31 SS; 2 - G32 S & H32 S; 3 - G29 S; 4 - L32 S & M34 S; 5 - O33 S; 6 - O28 S; 7 - I34 SS; 8 - N30 S; 9 - P36 S; 10 - I34 S and surface collection; 11 - L34 S, L35 S, K34 S and K35 S joining to form a neck with a diameter of at least 90 mm.

measuring less than 1 cm in maximum dimension and these were not included in the final potsherd totals (Table 5). In addition to the systematic surface collection of potsherds, the local herdsman and his daughter also collected pottery and donated this to the warden of the Richtersveld National Park. This sample numbers some 680 sherds, but because the exact provenance of these sherds is not known, their analysis has not been incorporated with results discussed below and in Table 5.

The sherd thicknesses were measured and a mean of 5,7 mm was obtained. Some 68% of the sherds measured fell in the range 4,5 mm to 6,4 mm with only a few sherds measuring less than 4,5 mm or more than 7,5 mm in maximum thickness. The mean thickness for the pottery from the sub-surface unit amounted to 6 mm and for the burial area, with its 12 potsherds, 5,9 mm.

No obvious bases or spouts were recovered from site A. It proved difficult to reconstruct ceramic vessels because of the small size of the sherds. However, visual inspection suggests that many fragments were from the same vessels. Some success was achieved with six rim sherds which produced a rim with a diameter of 90 mm (Fig. 6:11). This particular vessel was thin-walled with a red outer burnish. A conservative estimate suggests at least 10 pots are represented on the A site.

Only 41 out of the total of 922 potsherds are decorated which amounts to 4,4%. The most common decoration is incised, horizontal lines; they appear on 26 of the 31 decorated sherds (Table 5). Circular punctate impressions are comparatively rare with only two sherds recorded with this motif. Two sherds contain incised, converging lines. Some 25% of pottery rims are decorated. The majority of rims are either rounded or flat. At least four out of the ten decorated rims contained incised diagonal lines on the lip, *e.g.* Figure 6:5,6,10. One sherd with a combination of incised lines and punctates was recovered in the sub-surface unit (Fig. 6:1). Five lugs were recovered while the herder's daughter collected another. Several sherds had been artificially rounded as if they were being prepared for pendants.

There appears to be an inverse relationship between stone artefact and potsherd densities, with potsherds (especially decorated ones) concentrated in the west of the collection area and stone concentrated to the east. However, it is important to note that the random collection of 680 potsherds discussed above represents 41% of the total potsherd sample from the site. This large collection, if mapped *in situ*, may have significantly altered the spatial patterning of potsherds. Furthermore, the large collection of unprovenanced material makes calculation of ceramic densities, either per cubic metre (Smith *et al.* 1991), or as the pottery index (P.I.) suggested by Yates & Smith (1993) extremely problematic.

Table 6. Jakkalsberg B pottery frequencies, rims decorated pieces, spouts and bosses.

	Number	< 10 cm	Rims	Decorated Rims	Decorated pieces	Bosses/spouts	Mean thickness
Surface	425	215	12	14	51	2,5 bosses, 1 spout	5,2 mm
MOU	26	-	-	-	4	-	5,4 mm
MOU2	27	-	1	-	-	-	4,9 mm
MOU3	4	-	-	-	-	-	5,3 mm
MOU4	3	3	-	-	-	-	4,1 mm

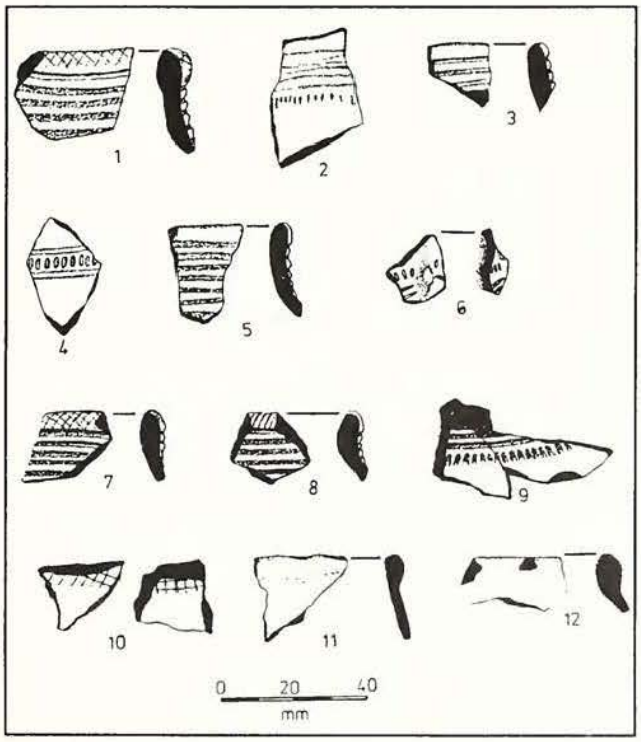

Fig. 7. Decorated potsherds and rims from site B. 1 - surface; 2 - G15 S; 3 - I13 S; 4 - G12 S; 5 - H10 S; 6 -J14 S; 7 - H10 S; 8 - I10 S; 9 - H12 S & F12 S; 10 - H10 & surface; 11 - G10 S; 12 - I14 MOU2.

The B site

A total of 505 potsherds (with a further 102 from the local herder collection) were recovered from the surface of the B site and 65 of these were decorated. This amounts to some 12,8% which is more than the the 4,4% decorated sherds for the A site (Table 6). Mean sherd thickness for the surface unit amounts to 5,2 mm compared to 5,7 mm for the A site. Of the 26 rim sherds, 14 (54%) are decorated. The majority of the rims are rounded although tapered and externally thickened examples also occur. Decorated rimsherds commonly contain diagonal incised lines on the lip and incised horizontal lines on the neck (Fig. 7:8). There are two examples of rimsherds with cross-hatching on the lip (Fig. 7:1,7). Twenty out of the 51 decorated sherds contain horizontal incised lines while the others have punctations or a combination of horizontal lines and punctations, mainly from the neck area (Fig. 8:2). Compared to the A site, punctations at the B site occur more frequently and combinations of parallel lines and punctations are also found.

No lugs were recovered from this site but 2 1/2 bosses (*e.g.* Fig. 9:3) and one spout (Fig. 8:5) suggest that a different type of vessel is represented. Since more of the fragments could be conjoined (*i.e.* Fig. 9:1) it would appear that the artefacts in this area had not been as disturbed and were in better primary context than at the A site. With respect to Figure 9, all the fragments illustrated appear to represent a single vessel and the interesting thing about this vessel is that the decoration seems to cover a fairly large area of the vessel surface rather than being restricted to the neck area. The red ochre adhering to the punctations suggests that it was applied after firing. This vessel varies between 3,5 - 5,5 mm in thickness. Figure 8:1 illustrates the partially reconstructed neck of another vessel with diagonal incisions on the externally thickened lip. The diameter of this neck varies between 70 - 80 mm. The incised lines on the lip also contain red ochre. The temper of this vessel is slightly gritty and the mean thickness of the sherds varies between 4,0 and 5,3 mm. The spout (Fig. 8:5) has a diameter of 30 mm. There would appear to be a greater proportion of potsherds from the B site with red ochre applied to the finished vessel than at the A site. From the decoration and temper, it would appear that a minimum of 8 vessels are represented at the site.

Ostrich Eggshell

The A site

Ostrich eggshell densities were generally fairly low with only a few squares containing more than ten fragments (*i.e.* about 3 g). There is little thus evidence to suggest that ostrich eggs formed an important part of the diet at this site. Densities of ostrich eggshell fragments are low when compared with other open sites along the Orange River such as FR1 (Robertshaw 1979). It would seem that the ostrich eggshells were being used for containers (Fig. 10) and in the manufacture of decorative items such as pendants and beads (Fig. 10). A single ostrich eggshell 'scraper' (Fig. 10) was recovered resembling those from Frummel Bakkies in Bushmanland (Webley 1992). The number of complete, broken and unfinished beads from the grid of 99 square metres of

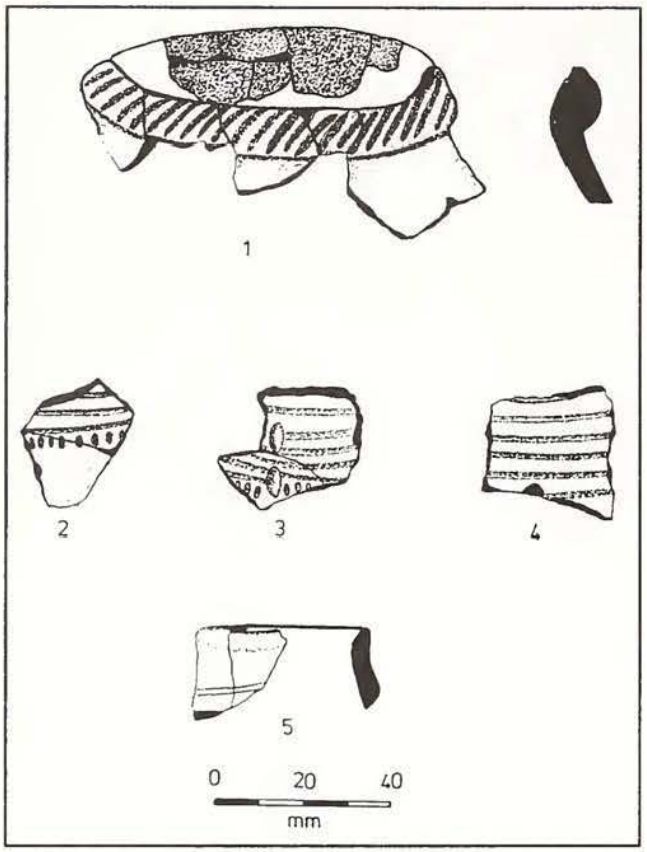

Fig. 8. Decorated pottery from site B. 1 - partially reconstructed rim of a vessel showing decoration consisting of diagonal incisions filled with powdered ochre, the sherds are from I13 S, I12 S, G15 S, G14 S, I13 S, J13 MOU3 and J13 MOU2; 2 - surface and F14 S; 3 - surface and F15 S; 4 - surface; 5 - G13 S, I14 S & J11 S are from a spout.

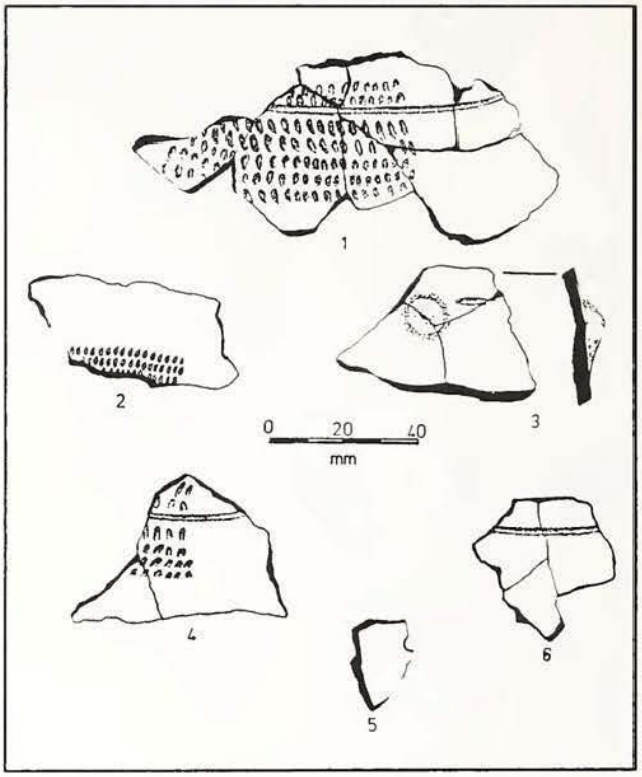

Fig. 9. Decorated sherds from site B. 1 - these sherds are from H14 S, H15 S, G15 S & H14 MOU; 2 - I13 S; 3 - a boss reconstructed from sherds from surface and H14 S; 4 - K12 MOU3 & J12 MOU3; 5 - J12 S contains portion of a drilled hole; 6 - G15 S and H15 S. Many of these sherds appear to belong to the same vessel.

surface material is shown in Table 7. However, one of my assistants during the excavations in November, who lived at a stockpost nearby had made a large collection of beads soon after the site was uncovered. She donated this collection to me and the values for these beads is also given in Table 7. Despite the large number of unfinished beads there were no grooved stones or borers to indicate how the manufacturing process was undertaken on site. Incomplete OES beads were found concentrated in four areas, three close to the hearths, the other overlapping the area of densest stone and bone concentrations.

The external diameters of the complete and broken beads were measured with calipers and a mean of 5,4 mm obtained (Table 7). The distribution of the various size categories is illustrated in Figure 11. The mean diameter measurement for the surface material is 5,4 mm, for the sub-surface sample 5,8 mm and the beads from the burial produced a mean of 5,2 mm (Table 7). However, the discrepancy between the mean of 5,4 mm for the surface unit and 5,8 mm for the sub-surface unit is unlikely, in this case, to relate to changes in bead sizes through time. It is most probably due to the informal collection of ostrich eggshell beads made by the local herdsman and his daughter. The mean external diameter of their collection amounted to 6,4 mm which is considerably higher than the mean for the material collected *in situ*.

It would appear that the herder and his daughter collected the larger beads from the site as their collection includes 28 beads greater than 8,5 mm in external diameter whereas my collection contains only one. When the results of their collection are combined with mine, the mean bead size for the entire Jakkalsberg A surface site is 6,0 mm. When the distribution curve for these new values is plotted, it is clear that while the lower portion of the graph are not substantially affected by the addition of the herder collection, the tail of the curve tends to slope more gently to include a larger percentage of beads greater than 7,5 mm (Fig. 11). Apart from the the fact that 15% of the beads are greater than 7,5 mm in external diameter, at least 2,6% are smaller than 3,5 mm. A total of nine beads, all measuring less than 3,0 mm in external diameter, were found clustered in three adjoining squares which may suggest that they are derived from a single beaded item. Sieves with a mesh size of 1,5 mm was used during the June collections and a 3,0 mm mesh was used in November.

The B site

It is notable that the B site contained significantly larger proportions of ostrich eggshell fragments, the surface unit has some 250 g of OES while the A site site contains only a few fragments of OES per square. A total

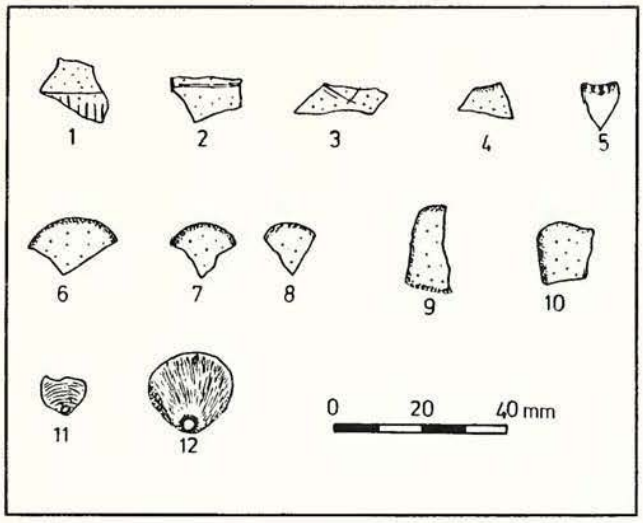

Fig. 10. Ostrich eggshell and marine shell fragments from Jakkalsberg A. 1 - decorated piece from N33 S; 2 - decorated piece from K35 S; 3 - decorated piece from P35 S; 4 - flask mouth from P34 S; 5 - 'scraper' from O30 S; 6 - broken pendant from Q39 S; 7 - broken pendant from J35 S; 8 - broken pendant from H33 S; 9 - rounded OES piece from L38 S; 10 - rounded OES piece from I34 SS; 11 - broken *Corbicula africana* with a hole drilled in the apex; 12 - weathered marine bivalve from N37 S.

of 35 complete ostrich eggshell beads were recovered from the surface of the B site with a mean external diameter of 5,7 mm (Table 8). There were only four broken beads. The most unusual feature of the site however, is the very large number of unfinished eggshell beads, a total of 317. This represents 9 unfinished beads to every one complete bead from the B site, a significantly larger proportion than at the A site where there is only one unfinished bead for every two complete beads. Three squares contained in excess of 20 unfinished beads each. Bead manufacture was clearly of considerable importance at this site although no stone borers or grooved stones were recovered to indicate the method of manufacture. A total of thirteen complete as well as unfinished beads from the surface unit were found covered in red ochre or contained ochre in their apertures.

Marine and freshwater shells

The A site

The most common shell fragments found on site are those of the freshwater mussel, *Unio caffer*, which occurs naturally in quantities in the river. Only 11 hinges of this species were recovered from the site, however, indicating that it could not have formed a significant part of the diet. The presence of a broken shell button and four shell beads (all measuring 4,0 mm in external diameter) suggests that these shells were being collected in order to contains only a few fragments of OES per square. A total of 35 complete ostrich eggshell beads were recovered from the surface of the B site with a mean external diameter measurement of 5,7 mm (Table 8). There were only four broken beads. The most unusual feature of the manufacture decorative items. A number of freshwater bivalve (*Corbicula africana*) fragments were also recovered from the site. One, with a hole drilled in the apex (Fig. 10:11), indicates that their function could also have been decorative. Other marine shells probably

Table 7. Ostrich eggshell beads from the burial, main site, the sub-surface unit and the collection made by the herder at Jakkalsberg A.

	Complete beads	Broken beads	Unfinished beads	Mean bead diameter
Burial	37	3	1	5,2 mm
Main site	84	185	151	5,4 mm
Sub-surface	53	7	13	5,8 mm
Herder collection	201	51	42	6,4 mm

Table 8. Ostrich eggshell bead distributions and bead diameters from Jakkalsberg B.

	Complete beads	Broken Beads	Unfinished beads	Mean bead diameter	Beads with ochre
Surface	35	4	317	5,7 mm	13
MOU	-	4	1	-	-
MOU2	2	4	13	-	2
MOU3	-	-	1	-	-
MOU4	-	-	1	-	-

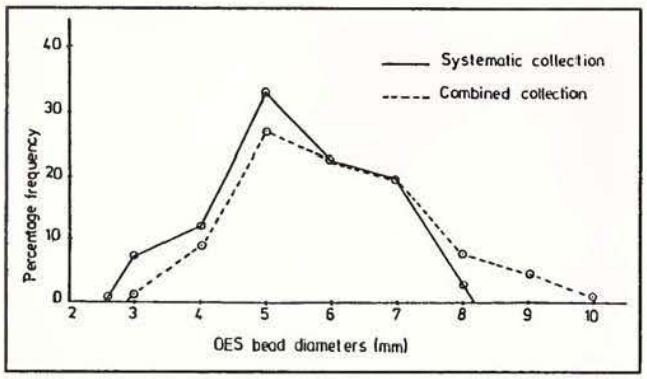

Fig. 11. Jakkalsberg A. Graph indicating the size distribution of ostrich eggshell beads.

introduced for the same reason include two compete shells of the *Marginellidae* family with holes drilled in their apices. These tiny white shells, as well as fragments of two others, were found close together on site. A fragment of a *Cypraea* sp. shell, as well as that of a *Conus* sp, an unidentifiable gastropod, an unidentifiable bivalve, and a fragment of *Haliotis* sp. from the burial area suggest a fairly wide range of marine species. A very worn portion of *Amalda obtusa* with a coating of red ochre in its interior, was recovered from the sub-surface unit. A number of charred fragments of *Patella* sp. were recovered, they appear to be of the *argenvillei* species. This is interesting in view of the large number of *Patella* sp. fragments recovered at the open site of Arrisdrift sampled by Wendt some 30km inland along the Namibian side of the Orange River (Vogel & Visser 1981). One unusual discovery was that of a single, highly polished shark's tooth from square O35 S.

The B site

One small fragment of a cowrie shell (*Cypraea* sp.) was found in G14 S, it was not possible to identify whether it was a warm water species. A small piece of a *Donax serra* bivalve was found, covered in red ochre, in K12 MOU2. Otherwise all the other fragments of shell belonged to *Unio caffra* or *Corbicula africana*. Only three *Unio* sp. hinges were recovered. They were probably used to manufacture decorative items like the *Unio* sp. button found in one square. The *Corbicula* sp. shells, on the other hand, do not contain any suspension holes.

Bone tools

The A site

There is no evidence for an extensive bone industry being practised but sufficient pieces of worked bone in various stages of completion suggest that bone was being worked on site to produce a variety of items. There are no obvious bone points, the majority of polished bone tips are very small (Fig. 12) and could have broken off an awl rather than a point. At least three complete awls were recovered as well as one worked, bone tube. There

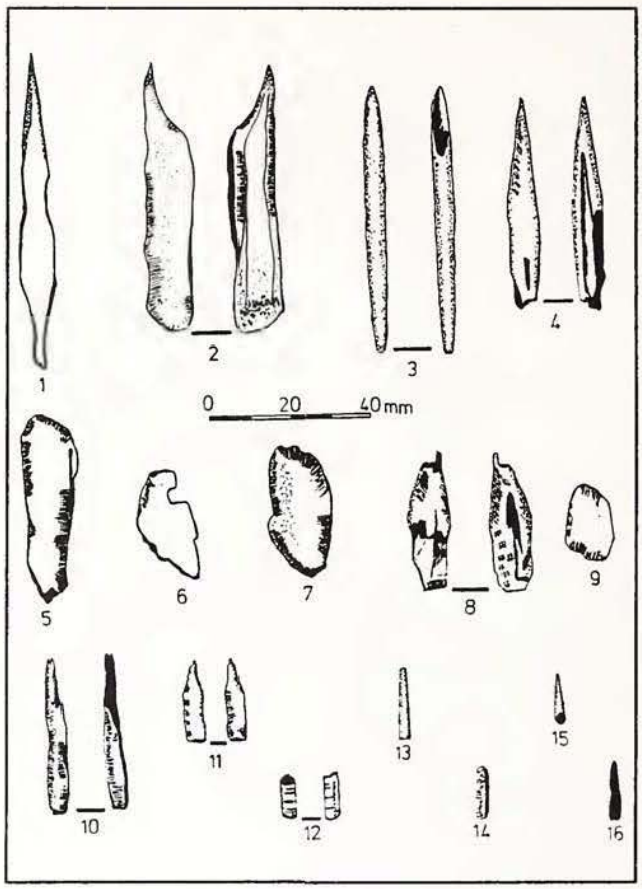

Fig. 12. Worked bone items from site A. 1 - awl from J32 SS; 2 - awl from L35 S; 3 - linkshaft from G31 S; 4 - awl from M33 S; 5 - worked bone flake from N33 S; 6 - L33 S; 7 - worked flake L37 S; 8 - bone peg with hatching indicating the position of ochre from P32 S; 9 - worked bone flake P33 S; 10 - K31 S; 11 - P34 S; 12 - notched worked bone J29 S; 13 - N37 S; 14 - P32 S; 15 - K35 S; 16 - charred bone/wood tip from L31 S.

is also a small fragment of bone with horizontal notching and broken bone peg. The identification of this item as a peg is suggested by its size and shape which resembles wooden pegs used for skinwork among present-day pastoralist groups in Namaqualand (Webley pers. ob.). The peg contains clear patches of red ochre along its base (Fig. 12:8). Finally, there are four worked bone flakes. Although they appear to be incomplete, their shape suggests that they would not have ended up as a bone awl or point. They may well have been intended as bone pendants. The distribution of worked bone items appear to cluster around the hearths and to the western portion of the site.

One decorated bone linkshaft was found in the sub-surface unit. The zigzag pattern running along the length of the implement is interesting as it is not very common to encounter decoration on bone implements (Fig. 13). The decoration may signify ownership.

The B site

There is one complete (Fig. 14:1) and three fragments (Fig. 14:3,6,8) of bone points from this site. Two awls

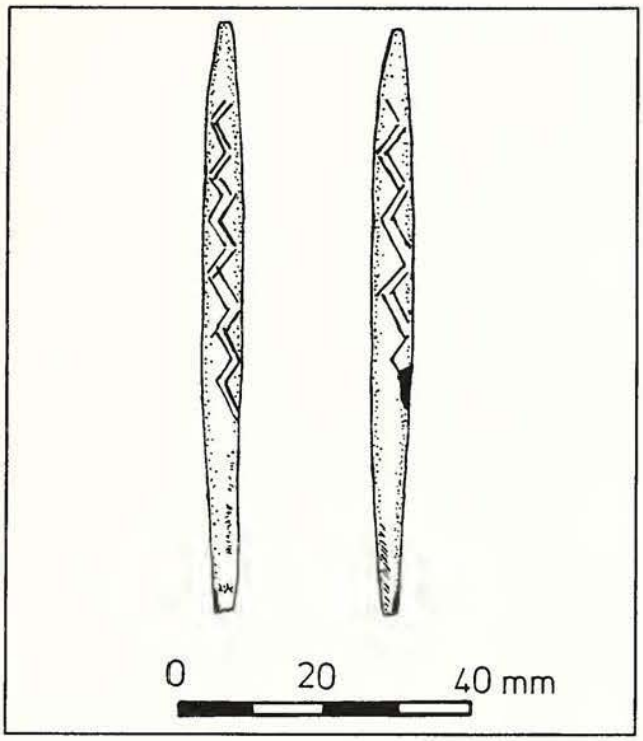

Fig. 13. A bone link-shaft from Blok 1 with zigzag motif along its length.

(Fig. 14:2,5), one broken bone tube (Fig. 14:7) and one bone 'borer' (Fig. 14:4). The point of the latter seems to have been deliberately shaped, perhaps it was used to puncture leather. It is interesting that site B does not contain any of the shaped and worked bone flakes recovered from the A site.

SPATIAL LAYOUT OF THE SITE

A grid was set up over the two sites before surface collection and excavations in order to facilitate spatial analysis. It was recognised that the *in situ* placement of hearths and the distribution of large numbers of stone artefacts, pottery and bone over a wide area meant that Jakkalsberg (A in particular) offered archaeologists the opportunity of recognising activity patterning. Archaeologists concerned with the ceramic L.S.A. have frequently noted that if they want to examine pastoralist patterns, such as the large Khoekhoen encampments described during the 17th century, then they will have to excavate large areas of a site. However, while some 99 square metres were sampled at Jakkalsberg A, this represents only a quarter of the total site. The distribution of stone artefacts, quartz chips, ochre fragments, identifiable bone and worked bone, ostrich eggshell fragments, unfinished and complete beads were all plotted on maps in order to look for patterning. One of the most puzzling features of the spatial layout was the clustering of the four small hearths at the A site - they formed a rough semi-circle a few metres apart. If one considers the modern-day pattern among contemporary pastoralists in Namaqualand, then one would expect the hearths to be at least 10 m apart (Webley 1992). The

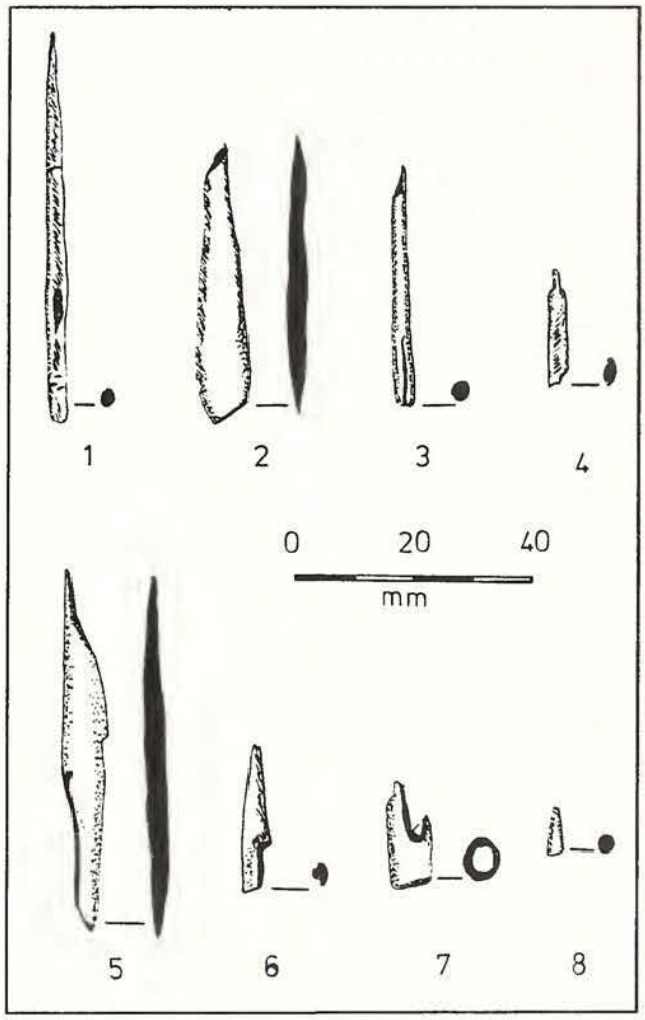

Fig. 14. Worked bone from site B. 1 - a bone point from J13 MOU, the slightly horizontal scoring at the base seems to suggest a position for attachment; 2 - an awl from J15 S; 3 - a broken bone point from H15 S; 4 - a bone 'borer' from I14 S1; 5 - a bone awl from K12 MOU2; 6 - a broken bone point from I12 S; 7 - a broken bone bead from J11 S; 8 - a broken bone tip from G15 S.

distribution of food debris (*i.e.* bone remains) suggests that the consumption or disposal of food took place around and to the east of Hearth 2. High bone concentrations coincide with the greatest concentrations of lithic remains. There are three potsherd concentrations, with the greatest percentage of decorated sherds occurring to the west of Hearth 1. Unfinished ostrich eggshell beads tend to concentrate around the hearths, as do the worked bone fragments. It would appear that the occupants of the site were living in fairly restricted area, although it is possible that a portion of the site has been lost through erosion. Furthermore, it does not appear as if they were living in 'matjies houses'. *i.e.* the spatial layout is not consistent with contemporary settlements.

DISCUSSION

This paper describes the cultural material from excavations at Jakkalsberg A and B. The radiocarbon

dates from the sites (two from each of the A and B sites) confirms that they are in fact broadly contemporary. The sites are unique among open site along the Orange River in that they have excellent preservation of organic material such as bone and charcoal. This appears to be related to the fact that the sites were covered by wind-blown riverine sands soon after they were abandoned, some 1300 years ago. It is not readily apparent, however, why the sites should have remained covered until now. The answer may lie with the several large dead tree trunks observed on the site (Fig. 2). These large trees, which may have grown on the sites during or after their occupation, probably prevented wind erosion in the past.

Subsistence information is discussed in detail in a separate paper (Webley & Brink 1996). Briefly, the small faunal sample is dominated by sheep remains while game was of little importance in the diet. Small numbers of hare and a single equid (the plains zebra) are present. Large numbers of fish remains, the majority still unidentified, indicate that other sources of protein were exploited. The more recent (AD 1750 to 1850) open site of FR1 at the confluence of the Fish River and Orange River sampled by Robertshaw (1979) also contained large numbers of fish bones. His analysis concluded that FR1 was occupied during the mass spawning migration of freshwater fish which occurs at the onset of the rainy season in February or March. The carbonised *Euclea* sp. fruits found in the hearths at both Jakkalsberg A and B suggest an occupation date between December and February (Archer 1994), adding weight to the view that the sites were occupied in summer.

More recently, small-stock herders in the Richtersveld have been reported (Kröhne & Steyn 1990; Mussgnug 1995; Archer pers comm.) to make use of the grazing along the Orange River in summer, when sheep may drink twice a day from the river, while moving to the foothills of the mountains in winter. However, other transhumance patterns have been recorded historically (see Webley 1992). Ethnographic work among descendants of Nama herders in the Leliefontein and Steinkopf Rural Areas (Webley 1986; Webley 1992) indicated that herders generally disperse for part of the year when resources such as grazing and water are plentiful and aggregate when they are scarce. In the Richtersveld, however, stockposts consisting of individual or extended families were probably dispersed along the Orange River during the dry summer months as the vegetation cannot support large numbers of domestic stock for extended periods of time. Winter grazing on the Sandveld and the foothills of the mountains would have allowed larger aggregations.

It is clear from a percussion cap recovered from site B (Miller & Webley 1992) and the gun-flint found along the outer margin of site A, that the area had been visited by mid-nineteenth century travellers/hunters. It is unlikely, in view of the preservation of bone and charcoal, that the sites had been exposed to the elements during these visits. Items dropped by visitors on the surface of the site would have gradually became incorporated with the earlier material due to the action of the wind. While it is possible to explain away the iron fragments found at the A and B site in a similar fashion, one fragment was in fact found *in situ* associated with a small hearth which dated to 1380 ± 50 BP. Furthermore, the metallurgical analysis of small fragments of iron from both the A and B sites suggest (Miller & Webley 1992:91), "that these are no different in composition or structure from numerous examples of indigenous metal working". In addition they have observed, that "there is nothing to distinguish the bulk of this material from iron found at other Early Iron Age sites like Divuyu (Miller 1992) and it may well relate to the associated Jakkalsberg radiocarbon dates of circa AD 690" (Miller & Webley 1992:92). If the iron fragments are accepted as relating to the rest of the assemblage, then the absence of formal stone tools at both sites suggests that iron may well have replaced stone for certain functions. The large assemblage of unretouched stone flakes, however, confirms that stone was still an important raw material.

Stone knapping was clearly being performed at both sites. No formal retouched scrapers were recovered, suggesting that skin-working activities did not take place at the sites or that other artefacts were used instead. Excavations at Spoegrivier Cave, further to the south along the Namaqualand coast, indicates that microlithic scrapers disappear from lithic assemblages with the introduction of pottery. A rough, sandstone scraper (called a *//khom* stone) was recovered from one of the upper units at Spoegrivier Cave (Webley pers. observ.) dating to 1300 BP. Similar *//khom* stones are still used by contemporary Nama-speakers to work animal skins (Webley 1990) but none were securely identified from Jakkalsberg. The absence of adzes is not surprising since they are not common in the L.S.A. of Namaqualand (Webley 1992). The only formal tools which do occur on the A site are segments and miscellaneous retouched and backed pieces. If they were inserts for arrowheads, then the occupants of the sites were remarkably unsuccessful as hunters, as virtually no game remains are represented on the site. The occupants of the sites, but particularly the B site, were grinding up large amounts of red ochre (locally available). This activity, however, is common to both herder and hunter sites.

One of the criteria Smith *et al.* (1991) have proposed for identifying a hunter site is "a high percentage of formal tools," and "a reasonably frequent use of silcrete raw material" (Yates & Smith 1993). A pastoralist site, according to this definition, would display the inverse of this signature. Kasteelberg B, which they take to be their yardstick for a pastoralist site, has a large lithic assemblage but the formal tool component amounts to 0,2% which they contrast with the hunter-gatherer site of Witklip (also in the Western Cape) which has a formal tool component of 4,9%. If one considers the formal tool component of 0,05% from Jakkalsberg A and the complete absence of formal tools from the B site, then according to the criteria designed by Smith *et al.* (1991), the open sites of Jakkalsberg are indeed pastoralist sites.

The decorated linkshaft from the sub-surface unit at the A site is of great interest both because of its scarcity

and because the faunal sample suggests that hunting did not contribute substantially to the diet of the site's inhabitants. It is not unique as a linkshaft or arrow of ivory decorated with zigzags and hatching was discovered on a midden inland from Melkbosch Strand during the 1950s (Rudner 1953). Nevertheless, the decoration does point to some underlying symbolism associated with hunting which is of interest to archaeologists. The absence of bone fish hooks suggests that the fish may have been trapped in fibre nets or baskets. A greater incidence of worked bone was recovered from the A site (with evidence of bone manufacture on site) but no significant observations can be made from the small collections.

A large sample of Later Stone Age pottery was collected from the two sites. The decoration on potsherds from the A site consists almost entirely of parallel, incised lines while those from the B site show a greater incidence of decoration and different decorative motifs (primarily punctate impressions). Lugs are common on the A site while spouts are found on the B site. However, while decoration and vessel shape distinguish these two sites from each other, they share similar sherd thickness and temper. The punctate decoration distinctive to the B site is also found at /Ai tomas further to the south-east (Webley 1992). The shell-edge stamped designs so common at Kasteelberg (Sadr & Smith 1991) were not found at Jakkalsberg although the cross-hatching and diagonal incisions on the rim seem similar. Pastoralist sites, according to the Smith *et al.* (1991) definition, should have high ceramic densities which they measured originally as sherds per cubic metre, but later Yates and Smith (1993) devised a pottery index which is calculated by dividing the number of potsherds by the total number of flaked stone. In Table 1 (Yates & Smith 1993), post-pottery hunters are defined as having a P.I. of less than 1, while the index of post-pottery herders exceed 1. The ceramic index for Jakkalsberg A amounts to 0,09 and even when the 680 sherds collected by the local herdsman is added, the index amounts to 0,14 which is still much lower than the figure for post-pottery herders accepted by Yates & Smith (1993).

Kinahan (1994-5) has observed that small rockshelters dating to the last 2000 years frequently contain a high number of decorated sherds relative to the total ceramic collection suggesting that individual sherds rather than complete pots were introduced to the site, perhaps for ritual reasons. This does not appear to be the case at Jakkalsberg where large numbers of potsherds, clearly relating to individual pots, could be recognised although no sustained effort was made to reconstruct complete vessels.

The mean diameter of ostrich eggshell beads of 6,0 mm from the A site and 5,7 mm from the B site, is similar to bead sizes documented for the period after c. 1600 BP from the Western Cape (Yates 1995). Yates further notes that a diameter of 6,0 mm is only exceeded after c. 1300 BP. Kasteelberg B in the western Cape, which also dates to 1300 BP, has a mean bead diameter of 7,0 mm (Smith *et al.* 1991) which is significantly greater than the mean for Jakkalsberg. The variability in bead sizes observed by Yates (1995) between sites in the Western Cape and Namibia during the period 2000 to 1000 BP may also apply to sites in the Northern Cape. The fact that beads did not increase in size simultaneously throughout Namibia and the north-western Cape suggests a gradual adoption of a pastoralist elements among hunter-gatherers, or alternately a gradual transformation of hunters to the herder way of life, rather than a rapid incursion of herders into the region.

The ochre beads and plugs from the B site hints at a society with a wealth of organic items which have largely disappeared from the archaeological record. The site covers a smaller area than the A site, even when the area under the little hill is taken into account, which suggests that it does not represent a site settled by a group of equivalent size to that which lived at Jakkalsberg A. One explanation may be that site B represents a specialised activity area, reserved for a certain group in society such as the women or a high status individual such as a chief. The large number of unfinished ostrich eggshell beads, the complete lack of formal stone tools and the greater incidence of ground ochre suggests the former to be the more likely (Webley in press).

CONCLUSIONS

The archaeological material from the two contemporary sites of Jakkalsberg A and B suggest that different activities were being performed at these sites. The B site differs from the A site in having larger numbers of ochre fragments, extensive evidence for the manufacture of ostrich eggshell beads on site and a greater number of decorated ceramic vessels displaying different decorative motifs. The A site on the other hand, is much larger and exhibits a greater range of domestic activities. The evidence seems to suggest that Jakkalsberg B represents a specialised activity area, and I have argued elsewhere (Webley in press), that this was a specialised women's area.

Jakkalsberg was occupied at the same time as Kasteelberg B in the Western Cape, i.e. approximately 1300 BP although its ceramics more closely resembles that found at Kasteelberg A (Sadr pers. comm.). If Kasteelberg is taken as the pastoralist 'type site', then how does Jakkalsberg compare? Jakkalsberg is of great significance to archaeologists because of its implications for those concerned with identifying pastoralist sites. Although a number of open sites have been identified along the banks of the lower Orange River (*e.g.* Robertshaw 1979), in the majority of cases bone is not preserved.

The faunal material from Jakkalsberg points unequivocably, I would contend, to a pastoralist occupation. In support of this claim I refer to Smith *et al.* (1991) who explicitly note that sites with a significant numbers of domestic stock in the faunal remains, indicate a herding economy (*ibid*:71). The low percentage of lithic formal tools would appear to be in line with the one of the criteria which they have identified for pastoralism.

However, the ostrich eggshell beads are not quite as large as those of Kasteelberg and the pottery index falls lamentably short. Thus while the economic indicators suggest that inhabitants of Jakkalsberg were pastoralists, at least some items of their material culture (ostrich eggshell beads and ceramic density) differs from the norms established for the south-western Cape.

While Yates and Smith (1993:99) acknowledge that it is unrealistic to expect the cultural signatures of hunters to be "absolutely different" from those of herder in the south-western Cape, their model postulates a one-way exchange of material culture items from herders to hunters rather than *vice versa*. In other words, while the norms for a hunter signature may be expected to vary, those for herders should conform, in the main, to the type site of Kasteelberg. This expectation is reflected in the attempt by Wilson (1996) to determine whether the Late Holocene occupants of Die Kelders cave in the Southern Cape conform to Smith *et al.*' (1991) criteria for a pastoralist site. The results from Jakkalsberg suggests that pastoralist sites, too, may be expected to exhibit variability in their material culture remains.

The presence of a decorated linkshaft and the small number of backed artefacts suggest that the occupants of Jakkalberg did hunt although this is not supported by the fauna from the sites. However, if the sites along the Orange River were only occupied during the summer months as part of a seasonal transhumance pattern which included either the mountains or the sandveld in winter, then it is clearly possible that these winter settlements could contain larger numbers of game. Ethnographic research amongst small-stock herders in the Leliefontein Rural Area (Webley 1986) confirmed that winter and summer settlements would have differed in location, size and structure as well as in the relative percentages of domestic stock. I would concur with Kinahan (1994-5:221) that defining a pastoralist site only on the basis of livestock remains "does not take into account the practical arrangements of herding". The fact that a site contains only small numbers of domestic stock should not automatically preclude the possibility that it could be a pastoralist settlement. In conclusion, the results from Jakkalsberg on the Orange River suggests that while our understanding of the archaeological identity of pastoralist groups has increased significantly due to recent research in the Western Cape and Namibia, the introduction of pastoralism was indeed a complex process and we may expect a great deal more ambiguity as more archaeological sites are excavated and the data published.

ACKNOWLEDGEMENTS

This project could not have been undertaken without the financial assistance of the National Parks Board. I should like to thank Mr N. Geldenhuys of the NPB as well as Mr H. Braak of the Richtersveld National Park for supporting my application for further research. I also wish to thank the Richtersveld Rural Community for their permission to excavate on community lands. Members of the Richtersveld National Park and of the community were extremely helpful and hospitable and I should like to thank everyone who facilitated my fieldwork during 1992. I am also grateful to the manager of the Reuning Mine, Mr H. Dippenaar, for granting me permission to work in a restricted area. My field assistants were : N. & W. Cloete, D. Moos, P. Rahloa, M. Joseph and R. Saal and they are thanked for their diligent work during difficult conditions. Dr J. Vogel of the CSIR kindly provided the radiocarbon dates and Fiona Archer provided much of the logistical support.

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