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SPATIAL PATTERNING, CULTURAL IDENTITY AND SITE INTEGRITY ON OPEN SITES: EVIDENCE FROM BLOEDDRIFT 23, A PRE-COLONIAL HERDER CAMP IN THE RICHTERSVELD, NORTHERN CAPE PROVINCE, SOUTH AFRICA

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ABSTRACT

This paper raises the question of whether it is possible to recognise different cultural groups in the later prehistory of the Western and Northern Cape Provinces, and, if so, how to use the archaeological signatures as indicators of site integrity. To do this we have used a 300 year old open site at Bloeddrift along the Orange River which yielded a number of hearth features and cultural debris that were indications of discrete cooking areas, possibly associated with individual huts. The hearths at Bloeddrift 23 are indications of a limited occupation period and of places where social activity was focussed. Their survival and association with the rest of the cultural material is a key to the integrity of the site. Comparisons between Bloeddrift 23 and Jakkalsberg A & B, some 30 km upstream, suggest that it is associated with a pastoralist economy. While the sites appear similar, in both context and material culture, the radiocarbon dates indicate Bloeddrift 23 is 1000 years younger. Using data from coastal surveys, and guidelines from Bushmanland, as well as Western and Northern Cape Provinces, we believe we can separate hunter from herder archaeological signatures. Based upon this, we suggest that not all the cultural and faunal material from these sites may be contemporaneous with the hearths. By knowing what the pastoral signature should be, we have attempted to separate out those elements of cultural material that may be intrusive. This exercise warns us to be careful of mixture, and not to assume all materials on sites found on the Orange River floodplain are necessarily coeval.

Received January 2000. Accepted February 2001

Introduction

Although the earliest colonial commentators referred to all the aboriginal people of the Western Cape Province as 'Hottentots', they made a clear distinction between the Soaqua as hunters without domestic animals, and others, called Quena (Khoekhoen) who were herders (Schapera & Farrington 1933; Thom 1954). Revisionist histories would declaim any distinction between Soaqua and Khoekhoen (Wright 1996). Elphick (1977) was convinced that they were purely different ends of a cyclical continuum: when herders lost their stock through theft, drought or disease they fell back on hunting and foraging, and so were at the 'bottom' of the cycle. Once they recouped their stock losses they became herders on the 'up' part of the cycle.

Archaeological work on the Vredenburg Peninsula has demonstrated a clear distinction between sites occupied by hunters (such as Witklip), and those by herders (as at Kasteelberg) (Smith *et al.* 1991). This separation thus supports the view of the early Dutch colonists. We believe that the cultural identity and separation between hunter and herder sites is not limited to the Western Cape Province. It has also been suggested for Bushmanland, with the distinction between the Swartkops and Doornfontein Industries (Beaumont *et al.* 1995) and this paper will show that it can probably be seen along the Orange River in the Richtersveld and on the Namaqualand Coast. These archaeological distinctions are predicated on our ability to recognise different cultural groups in the landscape and to ascertain whether sites have a high integrity, i.e. are in primary context, and not subject to mixing by later occupations (Binford 1981).

Fig. 1. Map showing location of Bloeddrift 23 along the Orange (Gariep) River in the Richtersveld.

Bloeddrift 23

During a heritage resource assessment of the Trans Hex diamond concession undertaken in 1998, Bloeddrift (or Auchas, to use its Nama name) was surveyed by Halkett and Hart (Halkett 1999). They noted how well preserved the ash material was on site 23, and how spatially discrete the hearth features appeared to be. Such features are all too rare in the archaeological record, and, as accelerated erosion in the area today places them at risk, a brief investigation of

some of the spatial aspects of the site was undertaken in June 1999.

This site (Fig. 1) (28° 21.3'S; 16° 48.4'E) is one of several close to the drift, or ford, at Bloeddrift on the South African side of the Orange River, some 30 km downstream, as the crow flies, from the similar site of Jakkalsberg (Brink & Webley 1996; Miller & Webley 1994; Webley 1997), and is one of many discovered during the extended survey. The range of sites includes those containing formal stone tools and mineralised bones, but lacking pottery, to sites with large amounts of ceramics, few formal tools and a faunal spectrum that includes significant numbers of small-medium bovids. Bloeddrift 23 is one of the latter.

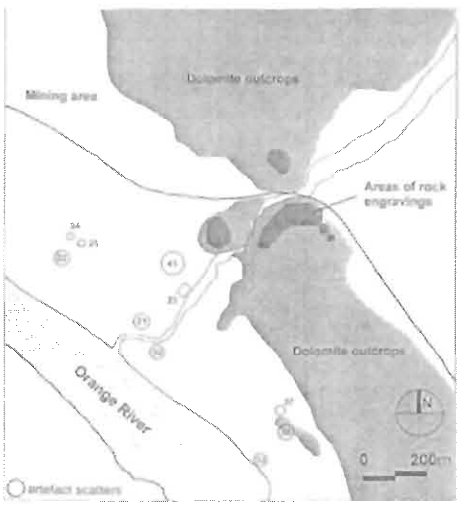

Fig. 2. Detailed location of archaeological sites around Bloeddrift (numbers refer to survey sequence).

Sites with large numbers of ceramics, few formal tools and large ostrich eggshell beads are usually associated with high proportions of ovicaprid remains. The contrast with sites containing formal tools, few potsherds and small ostrich eggshell beads has been used as a relative indicator of pastoralist occupation (Sadr 1997). Using these criteria we can be reasonably certain that Bloeddrift 23 falls within the pastoralist end of the spectrum, similar, in many ways, to Jakkalsberg A & B further upstream in the Richtersveld (Webley 1997).

Bloeddrift 23 is located on a terrace above the present run-off levels of a tributary of the Orange River, some 300 m from the main channel (Fig. 2). It appears to be the spatial equivalent of other sites on the opposite bank of the tributary stream, where cultural material lies *in situ* within eroding silt columns. The radiocarbon date of 355±15 BP (Pta-7942) from a hearth at Bloeddrift 23 places the site within Period 3 of the palaeoflood sequence (AD 1453–1785) (Zawada *et al.* 1996). This period begins with the exceptional catastrophic flood of *c.*1450 AD, which accumulated silts in slack water areas to a depth of up to seven metres (Zawada *et al.* 1996). It is possible that overlying silts from later floods may have preserved the site at Bloeddrift 23, in particular the faunal material which is only now weathering and breaking up into small fragments. Observations made during the 1998 survey indicate that many sites, apparently preserved below slack water sediments, are slowly becoming visible as erosion removes this cover. The advent of large dams upstream has prevented silts from being replenished during modern flood events.

The terrace on which the site lies consists of reasonably consolidated river sediments with enough erosion resistance to prevent gulleying. The edge of the site is gradually being eroded back by the action of floodwaters in the tributary stream. This is evidenced by cultural material on the slope leading to the bed of the tributary. It is not clear how much of the site has disappeared, but the hearths are back far enough from the edge of the terrace to suggest that even today huts with their backs to the prevailing winds could still easily be accommodated on the platform behind the fireplaces.

The flat terrace close to the river would have been attractive to the people whose water and fuel needs could be easily met. In and around the site are stumps of very old trees, some of which could well have been alive when the site was occupied, providing some shelter in this hot, dry land.

The site is a virtual pavement of quartz and other stone pieces, bone chips, pottery and ostrich eggshell fragments and beads interspersed around consolidated ash features. One of the questions which will inevitably be raised, and which occupied our minds while doing the work, was the degree of overlap there might be with successive re-occupations. The discrete distribution of the hearths, which were visible and preserved across the site, would suggest that if re-occupation had taken place, the same hearths were used again. The fact that the hearths are composed almost entirely of ash, which would have been easily eroded if exposed for a long time, suggests the site was just becoming exposed. The discrete layout of the hearths on a single horizon would indicate either a single occupation or one where repeated occupation took place over a limited period, using the same fireplaces.

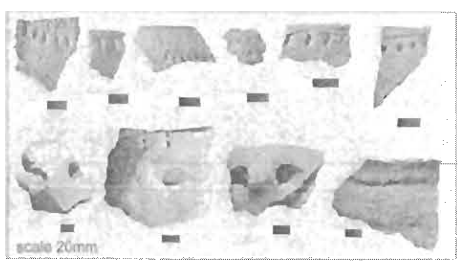

Fig. 3. Rim sherds and lugs from Bloeddrift 23.

Previous work on the layout of modern pastoralist camps in the Richtersveld (Robertshaw 1978; Mills 1995) and other Nama 'reserves' in Namaqualand (Webley 1982; Archer 1994) has shown a consistent pattern of spatial relationships between individual huts and their cooking areas. The same spatial relationship between hut and hearth is depicted in an early 19th century drawing by Bell (Penn 1995). This suggests a long established tradition of such layout, although there is some discussion of the influence of early trekboers on separate cooking areas outside the hut (Smith & Webley 2000).

This traditional layout seems to be maintained despite the fact that present day camps often consist of single family units, rather than whole clans as in the past, and nowadays the more traditional *matjies* or reed mat cladding of the huts has been replaced by plastic sheeting and hessian.

Method of Mapping

A grid with a permanent datum at the western corner was set up over the densest part of the cultural debris scatter, to include all hearth features. Due to time constraints, and because of the large numbers of artefacts, we did not point plot every single piece.

Table. 1. Stone artefactual material and raw material composition

	quartz	qtz crys	cor	b/stone	hornfls	quite	dolomite	shale	schist	specularite	%
chips	581						2		1		24.25
chunks	227					30	56	21	11	1	14.37
flakes	835	5	11		2	67	28	1			39.41
core	30					2					1.33
indet. waste	172		2			6	2	28	99		12.83
pebbles/ cobbles	9		86	27		27		4	11		6.81
crystal		2									0.08
Total Waste	1854	7	99	27	2	132	88	54	122	1	99.09
anvil							1				0.04
ground slab								8			0.33
pecked chunk							3				0.12
lower grind-stone						2					0.08
hammer stone						7					0.29
Total Utilised						9	4	8			0.87
backed blade		1									0.04
Total Formal		1									0.04
TOTAL	1854	8	99	27	2	141	92	62	122	1	100.00

Instead, we used a combination of sampling strategies. We divided each of 189 sq. m in the densest area of the site into four quadrants and an *in situ* analysis of the smaller stone items, ostrich eggshell fragments and undecorated potsherds visible on the surface was undertaken. At the same time, the less numerous artefacts, such as ostrich eggshell beads, manuports and decorated or lugged pottery, were point-plotted across the entire site. This was achieved by using an electronic tachymeter, which made it possible within the time available to record items both within and outside the boundaries of the main sampling area. Hearth outlines were also plotted by this method and their size orientation were individually recorded. In addition, decorated and lugged potsherds were photographed and drawn, and all ostrich eggshell beads measured.

No material was removed from the site, except identifiable pieces of bone from within the sampling grid that could not be identified *in situ*. A single quadrant of hearth 3B was excavated to enable us to measure the volume of ash, and to see if there was any bone or artefactual material present. A sample of charcoal from the hearth was collected for radiocarbon dating, which produced the date of 355±15 BP (Pta-7942).

Cultural Material

All the stone artefacts, undecorated potsherds, ostrich eggshell fragments (as well as unidentifiable bone fragments) recorded were those seen on the surface, and left in place.

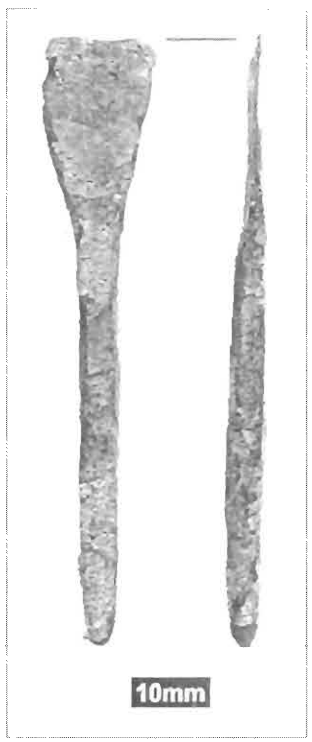

Fig. 4. Copper tool from Bloeddrift 23.

Stone

In all, 2408 pieces of stone were examined. More than 99% of this total consisted of waste. Most of the flaked stone was vein quartz (77%) (Table 1), with the addition of a few fine-grained rocks of jasper and banded ironstone (5.6%). Only one formally retouched tool, a backed bladelet made on crystal quartz, was seen. Larger pieces of stone consisted

of polished schist, flaked chunks, hammerstones, grindstone fragments and a few pecked slabs of dolomite.

Pottery

Of the 609 sherds, seven were decorated with punctate incisions immediately below the rim (Fig. 3). One small bowl fragment, three lugs, and one nipple base were also observed. Unlike at Jakkalsberg B (Webley 1997), no spouts were seen (although a broken piece of small diameter could have been the base of one).

Ostrich Eggshell

Eggshell fragments (n=802), water container fragments (n=4) and beads (n=153) were found. Unfinished beads, broken during the fabrication process, were also recorded, indicating these items were being made on the site. In all, 126 finished beads were measured using digital calipers. Measurements were made of both the maximum external diameter and minimum aperture of each bead. Outer diameters range from 3.4 mm to 11.8 mm. Only five beads measure less than 5 mm and only one is less than 4 mm. The mean outside diameter measures 7.6 mm (s.d. 1.6), and aperture 2.6 mm (s.d. 0.6). These measurements are consistent with those from the herder site of Kasteelberg (Smith *et al.* 1991). In that sample of 584 beads, the range of diameters was between 4.1 mm and 11.2 mm. The overall mean external diameter is 7.1 mm (s.d. 1.3), and mean aperture diameter is 2.7 mm (s.d. 0.4).

Metal

Metal objects were restricted to a single copper tool (Fig. 4), dimensions: 757 mm long, 146 mm blade width, and 56 mm shaft width. Duncan Miller (pers. comm.) believes this is a copper equivalent of iron knives/razors found in Botswana (Miller 1996).

Faunal Material

Identification of animals from the surviving bone on the site is listed in Table 2. The mammals are dominated by small-medium sized bovids (69.2%). Since these include ovicaprids, one of which has been specifically identified as a goat by Ina Plug from the Transvaal Museum, we suggest this strengthens the hypothesis that the site could have been occupied by small stock herders.

Table 2. Bloeddrift 23 fauna.

Species	NISP
Equus zebra	2
Equus caballus	1
Capra hircus	1
ovicaprid	4
Bov IV	3
Bov. I	1
Bov. II	13
small carnivore	1
tortoise	4
fish	19

The size of one of the Bovid II astragali found at Bloeddrift 23 is almost identical to that of a sheep identified from Jakkalsberg A (Brink & Webley 1996). Both are beyond the range of the comparative collection from the Spanish site of Cerro de la Virgen used by Brink & Webley. This indicates that the pre-colonial sheep of the Cape were taller than their European counterparts, as has been noted among Afrikaner sheep today.

Three of the mammal bones are from equids. Ina Plug (Transvaal Museum) has confirmed that two are from donkeys, and the third from a horse. Since these animals are neither indigenous to southern Africa nor known in the region before European contact, we must assume that they are not contemporaneous with the main occupation, and most probably date within the last 100 years.

The appearance of fish bone on the site indicates the continued use of the river's resources throughout the pastoral occupation of the Richtersveld from the time of Jakkalsberg (Brink & Webley 1996), through the occupation of Bloeddrift, up to the historic period. When Wikar (Mossop 1935) and Gordon (Raper & Boucher 1988) passed along the Orange River in 1778–9, they both described fishing activities among the indigenous people.

Contact with the coast was evident in the 10 pieces of marine shell found. These consisted of one *Patella granatina* fragment, one *P. argenvillei* fragment, one *Patella* sp. fragment, four *Conus* sp. shells (three with intentionally drilled holes) and three *Bullia* sp. shells.

Hearths

Hearths 1, 2, 3B, 5, 8, 9, 10 and 11 (Figs 5–8) all contained compacted ash deposits that could have taken several weeks to accumulate. Hearths 4 and 12 contained surface deposits of ash, while hearths 3A, 6 and 7 were areas of dark soil with some charcoal, but no ash (Table 3). These latter two categories were probably single or limited fire episodes.

Table 3. Bloeddrift 23: hearth measurements

Hearth	Area (mm)	Description
H1	600 x 300	orientated E—W
H2	500 x 300	orientated E—W
H3A		dark soil patch
H3B	600 x 450	orientated E—W
H4	550 x 380	orientated E—W, not deep ash
H5	550 x 480	round
H6		dark soil & charcoal, no ash
H7		dark soil & charcoal, no ash
H8	600 x 350	oriented NW—SE
H9	450 x 360	oriented N—S
H10	340 x 160	orientated E—W
H11	600 x 450	orientated E—W
H12	630 x 370	oriented N—S, not deep ash
H13	270 x 270	round, small ash patch

The clear outlines of hearth H3B made it the best example for measurement, and for dating. It appeared to have been placed in a shallow depression dug into the parent soil. Like all the other hearths, it was small in area, probably reflecting the conservative use of wood as fuel, as noted from other sources (Smith & Pheiffer 1993). It measured 0.27 m^2, with a maximum depth of 50 mm. This gave it a volume of 0.006 m^3 of ash. There was virtually no intrusive material within the ash, apart from a few bone fragments.

No ash dumps were recognised on or adjacent to the site. As women in the Richtersveld today usually clean their hearths on a regular basis, and dump the ash away from the werf, Bloeddrift 23 may thus represent a very short period of occupation.

Spatial Distribution

A number of authors have shown the importance of the fireplace as a centre for social activities. As Yellen (1976) puts it: "family group(s) activities are spatially localised around individual family hearths", and Lee (1993) says: "Directly in front of the hut mouth is the family fire, at which all food is cooked, where people socialise in the evening and around which the family sleeps at night". Although these refer to the Ju/'hoansi Bushmen, the same pattern of behaviour appears to have existed among the Khoekhoen. Schapera (1930) notes the importance of sitting at the fire by initiated men, and (Schapera 1930) how "older people assemble round one of the fires to smoke and to talk". Binford (1996) gives archaeological evidence for the central place of the hearth.

Discussion of the importance of the hearth and associated ash among modern Nama pastoralists by Smith & Webley (2000) has indicated that women have virtually complete control over the household space. The ash and ash dumps belong to an individual woman and no other would think of usurping the space that is hers (Archer 1994). Thus, in spatial terms, a woman has an identity that is recognised and accepted by all others, to the point that she can return to a site without fear that someone else has 'moved in'. This has implications for a mobile society which can stay in one place for a period of time, and move to other locales, leaving behind less portable items, such as grindstones, but structures, etc. They would then await a woman's return at a future date.

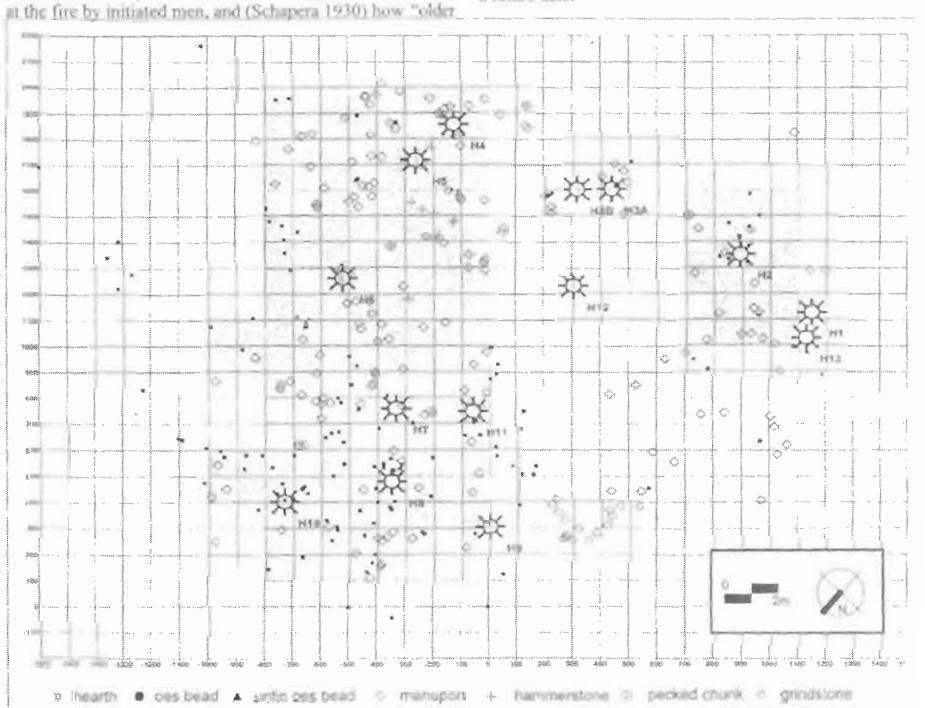

Fig. 5. Spatial layout of hearths, ostrich eggshell beads and stone artefacts at Bloeddrift 23.

We thus feel justified in assuming that the hearths at Bloeddrift would have served as identity points for social life and many of the activities that took place while the site was occupied would have focussed around the fires. Figs 5–8 show the distribution of cultural material across the site in relation to the hearths, with the area we mapped shaded.

Although it would have been desirable to extend the ar the sample to demonstrate the patterning more fully, ostrich eggshell beads and manuports are good indicato the spatial distribution and density of materials. They plotted across the entire site, and not just within the piing grid, as was the case of the stone debitage. As c seen in Fig. 5, the greatest density of beads is aroun hearths 8–11, with only four near hearth 1, eleven a

hearth 2, and three around hearth 3. The remaining beads are more than one metre from other ash patches and hearths. Large parts of the site have no beads or manuports (Fig. 5), and there was little other cultural material in these spaces. By way of contrast, there appears to be a close correlation between the distribution of ostrich eggshell fragments (Fig. 6) and quartz fragments (Fig. 7). Pottery (Fig. 8) and the relatively small number of quartzite fragments were evenly distributed across the main part of the site, but were almost absent around hearths1–3. This contrasts with the distribution of ostrich eggshell fragments (Fig. 6), which were as numerous around hearths1–3 as the rest of the site. Fine-grained rocks, such as ironstone, jasper and crypto-crystalline silicates (ccs) show a concentration on the eastern side of the site, close to the largest number of unfinished and broken beads (Fig. 6).

Ostrich eggshell and quartz fragments are inversely correlated with the main concentration of beads in proximity to hearths 8–11. The few unfinished and broken beads, that presumably indicate place of manufacture, are found away from any hearth (Fig. 5).

As a clue to the number of bead makers that might be represented among the Bloeddrift 23 ostrich eggshell beads, we conducted an exercise on measurement and fabrication control on two unprovenanced ethnographic strings of beads. These were once part of the Goodwin collection in the Department of Archaeology, University of Cape Town and now retained as departmental teaching collections. From the consistent size of these strands we assume they were made either by two different individuals, or at different times. Sample 1 was from a two metre long strand of some 1200 beads, from which we measured 138 beads at random along the strand. Sample 2 was a string of 57 beads, all of which were measured.

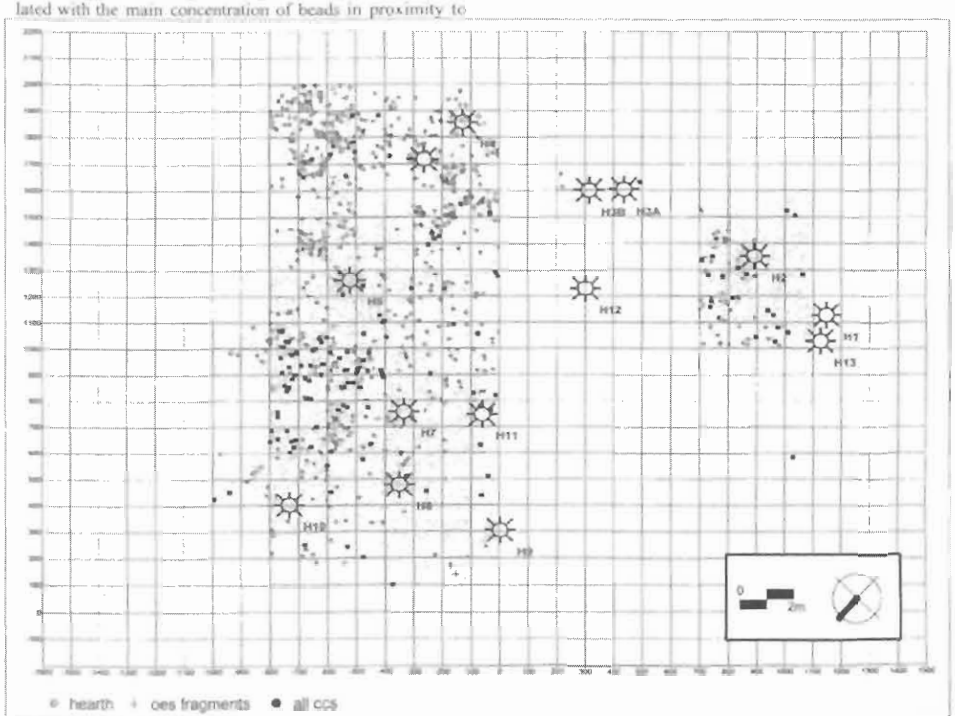

Fig. 6. Spatial layout of hearths, ostrich eggshell pieces and crypto-crystalline silica at Bloeddrift 23.

As can be seen in Fig. 9, a bead maker can control over 75% of the outside diameter of the beads to within 0.5 mm, and over 92% to within 1 mm. The range of ostrich eggshell bead sizes from Bloeddrift, between 3.4 mm and 11.8 mm (n=123, mean 7.6 mm), is far greater than could be expected from a single strand. If we select the bead sizes from around hearths 8–11, we find that there are two dominant groups: (a) 6.4–7.5 mm (24 beads, 15.5% of the total), (b) 7.7–8.9 mm (27 beads, 17.4% of the total). This means that one third of the beads from the site could come from a minimum of two strands.

Hammerstones were found closest to the densest concentration of quartz fragments near hearth 5. Filling in the gaps where there were few other items of material culture are large stone chunks and the pieces of what appear to have been grindstones (Fig. 5).

The spatial distribution of items appears far from random. While not all the artefacts cluster around fireplaces, there are some interesting associations. The area around hearth 5 is richest in stone flakes, while around hearth 2 and hearths 8–10 there are more beads. The fact that there were so few potsherds around hearths 1–3, compared with the other hearths, is anomalous, and raised a question whether all the materials were exposed on the surface. However, the large number of ostrich eggshell fragments in the area of hearths 1–3 is of similar density to the rest of the site. This offers support for our contention that although we were mapping only surface material, very little existed beneath the surface. This was confirmed when we scraped around hearth 3 to cut a quadrant for dating.

The hearths and material culture as indicators of site integrity and identity

Important in the discussion of identity is to recognise how undisturbed a site might be. The integrity of the site requires that it be in primary context and not subject to subsequent mixing by later occupations, and is equally not a palimpsest of occupations by different agents (Binford 1981). As the Bloeddrift 23 hearths consisted almost entirely of ash, they could not have been exposed for a very long time. It is probable, therefore, that we were witnessing patterning on the site through a window of limited duration. The hearths were all on a single horizon, adding credence to our conclusion that they were contemporaneous. If we are correct, then we can postulate that other cultural remains are likely to be associated.

We cannot entirely rule out the possibility of some overlap with earlier occupations. However, we believe that there are distinct archaeological signatures, which can be used to identify different economic and social groups and changes that occurred to these over time. Along the Orange River in the Richtersveld there are different patterns in the size of ostrich eggshell bead, frequency of formal tools and raw materials, and pottery to be found on sites.

We will argue that the lack of formally retouched tools (with the exception of the single backed blade), coupled with other factors, suggests that Bloeddrift 23 represents the remains of a pastoralist campsite.

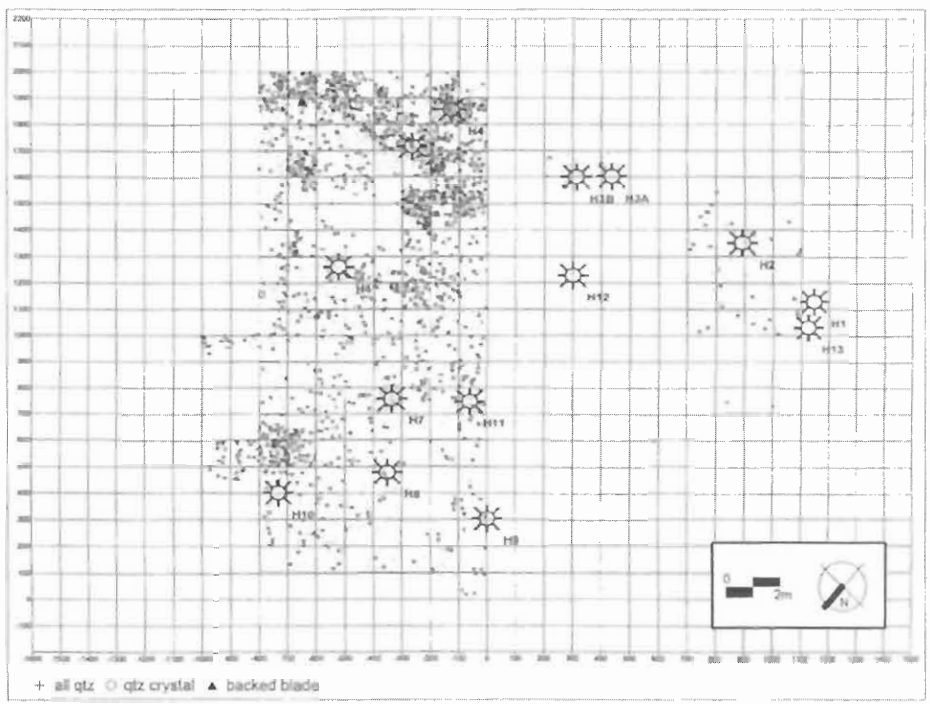

Fig. 7. Spatial layout of hearths, all quartz, quartz crystal and backed blades at Bloeddrift 23.

Discussion

Observation of deflating silts along the river show that there are often multiple horizons embedded in the deposits, with the possibility of mixture once the sediments have become deflated. This makes our ideas of cultural distinction all the more pertinent for distinguishing those sites that maintain cultural integrity from those that are poten-

tially mixed. We have argued that the site at Bloeddrift retained its integrity and offers an example of the spatially coherent layout of a pastoralist camp. The spatial layout of the hearths suggests an occupation horizon of limited use that has only recently been exposed by erosion of Orange River silts deposited during flood events.

We would like to know who the previous occupants of the site were. To do this we can turn to a number of economic and cultural indicators. Previous work on the dimensions of ostrich eggshell beads has shown that they are particularly important as cultural markers (Jacobson 1987; Smith *et al.* 1991). Beads with external diameter measurements of less than 5 mm in diameter are found on sites characterised by a hunting and gathering economy, both pre- and post-dating the introduction of domestic stock and ceramics. Bead assemblages with mean diameter values larger than 5 mm in diameter are associated with herder sites after 2000 B.P. (Smith *et al.* 1991). At Bloeddrift 23 the main occupation area has produced ostrich eggshell beads, over 96% (n=123) of which have external diameter measurements greater than 5 mm.

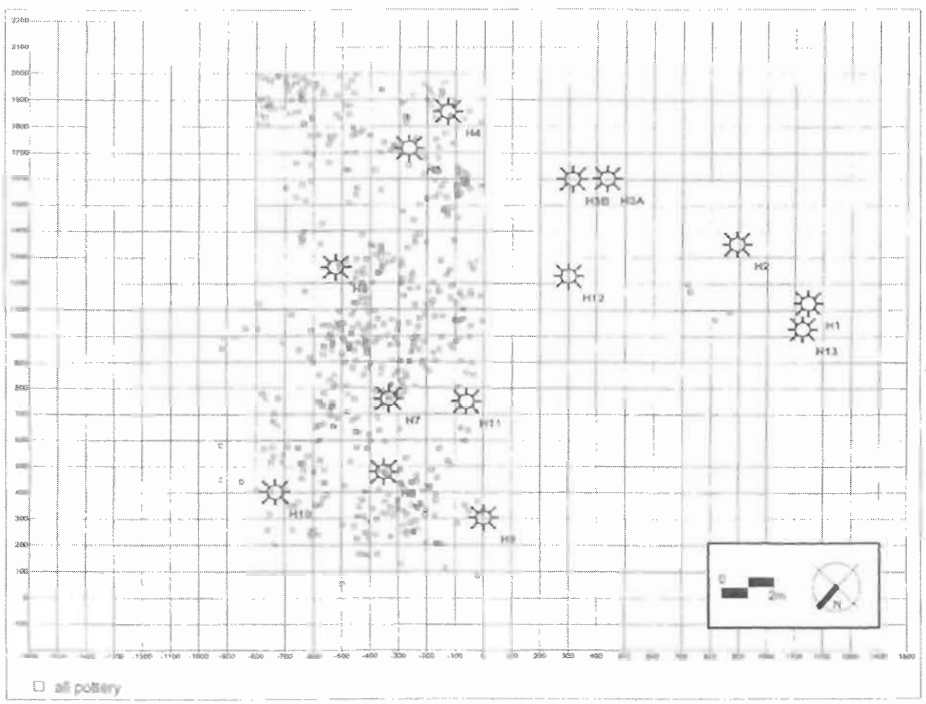

Fig. 8. Spatial layout of hearths and pottery at Bloeddrift 23.

The pattern of bead sizes on sites characterised by a hunting economy becomes more complicated in the later period, coeval with occupation at Bloeddrift. At Droëgrond in Bushmanland, some 350 km east of Bloeddrift (Smith 1995), and at Voëlvlei in the Western Cape Province (Smith *et al.* 1991), both sites dated to c. 400 BP, the cultural material includes microlithic stone tools. However, none of the ostrich eggshell beads are smaller than 4.3 mm (max. 11.5 mm). Thus, we have hunter sites with large beads. A similar, albeit changing, pattern is evident from two other hunter sites on the Vredenburg Peninsula, namely Witklip and Die Kraans (Smith *et al.* 1991, Smith 1998). These latter sites retain very small beads up to c. 500 BP, after which there is a slight shift, and even though the majority of the beads are still small, beads larger than 5 mm become part of the assemblage. It is possible that the herder cultural size preference had by this time been taken up by hunting people, or that they were getting their beads from the more dominant group in the landscape. Either way, there was a change in the cultural pattern that may indicate a shift in the relations between the two economic groups. The above observations do not, however, affect our interpretation of the material from Bloeddrift 23. This is because the measurements of the ostrich eggshell beads from this assemblage are shown to be quite tightly clustered, with 96.1% of the beads falling within the herder range of greater than 5 mm outside diameter.

In addition, there is only one formally retouched stone tool (among 2408 pieces of stone), and most of the raw material is either quartz or fine-grained river cobbles. A reasonably high incidence of pottery, with both decorated rims and

lugs, was also recorded. The fauna is primarily small-medium bovids (including one goat), with the addition of hunted game and fish. This signature suggests that it most probably derives from people practising a herding economy, and has a close similarity to Kasteelberg in the Western Cape (Smith *et al.* 1991), and the Doornfontein Industry described by Beaumont *et al.* (1995).

On the edge of Bloeddrift 23 are items (one backed bladelet and one ostrich eggshell bead smaller than 4 mm) which we would consider to be out of place within a pastoralist occupation. We would argue that these are part of a hunting and foraging signature conforming to that noted at the site of Witklip in the Western Cape (Smith *et al.* 1991) and to assemblages of the Swartkop Industry found further east in Bushmanland (Beaumont *et al.* 1995). During the Trans Hex survey a number of sites were observed which contained distinctly different assemblages from that described here for Bloeddrift 23. Most often these were assemblages devoid of ceramics, and containing larger numbers of formally retouched artefacts on fine-grained raw materials (Halkett 1999).

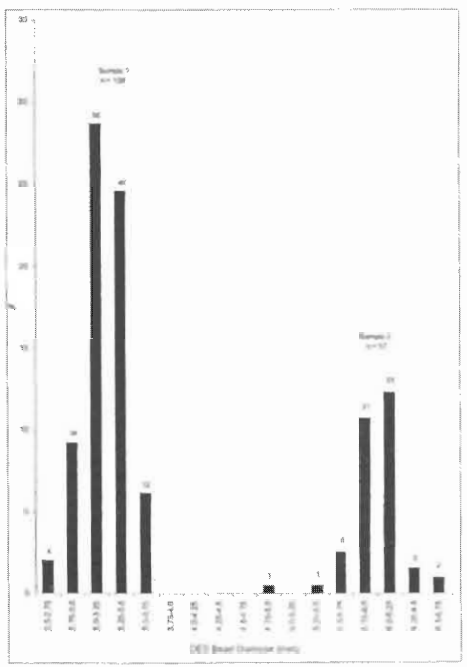

Fig. 9. Ethnographic bead collection: external diameters.

A similar range of cultural patterns can also be seen in sites located in the De Beers diamond area on the Namaqualand Coast (Halkett & Hart 1997). As Fig. 10 shows, over 60% of the 729 sites recorded along the coast had no ceramics on the surface. As ceramics appear on the Namaqualand Coast around 2000 BP (Webley 1992), we can use this as a chronological marker. The remaining 268 sites contained ceramics, and therefore had some occupation after 2000 BP. Of these, 219 sites contained no formal tools. The remaining 49 sites produced formal tools, but, of these, 34 showed less than 10 sherds on the surface. Thus, only 15 ceramic bearing sites had more than 10 sherds, along with formal tools. We would suggest that there is a strong tendency for sites with formally retouched stone tools to contain little or no ceramics. Conversely, sites with formal tools should have low numbers of potsherds, as can be seen at Spoegrivier Cave, located on the Namaqualand coast (Webley 1992) to the south of the area where the De Beers survey was undertaken. The assemblage from this site produced low numbers of potsherds and a formal tool component making up 1.8% of the stone assemblage. Such findings in Namaqualand are consistent with Sadr's (1997) analysis of Later Stone Age sites throughout southern Africa, in which he concludes that "sites rich in formal tools and/or poor in potsherds are interpreted as hunter-gatherer sites; sites with many potsherds represent herder-hunter sites" (Webley 1992).

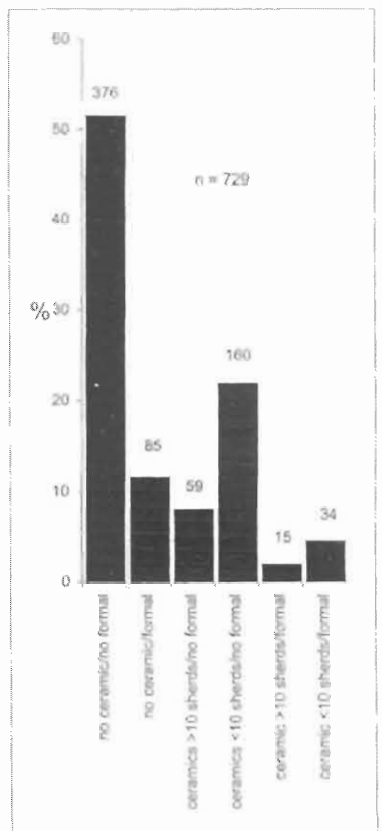

Fig. 10. Artefact content of De Beers coastal sites.

As is evident from Rudner's (1968) compendium of pots from the coasts of western South Africa, spouts and lugs do not occur on the same pots. An analysis of Karoo pottery (Sadr & Sampson 1999) suggests that there is a chronological shift, with spouted wares being earlier. In our experience at Kasteelberg, spouts are only to be found at the bottom of the sequence (Sadr & Smith 1991) and lugs at the top. Equally, in the earlier sites of the Doornfontein Industry in Bushmanland (before 1200 BP) there are no lugged ceramics (Beaumont *et al.* 1995).

Comparisons between Bloeddrift 23 and Jakkalsberg a & b

Bloeddrift 23 and Jakkalsberg A each exhibit discrete hearth layouts on a single horizon. These show the fireplaces often to be close together, i.e. within one metre of each other (Webley 1997). The fauna from both these sites shows high ratios of ovicaprid remains.

Jakkalsberg A & B and Bloeddrift all contain high proportions of quartz, and concomitant low percentages of fine-grained rocks. Jakkalsberg B does not have formally retouched stone tools, whereas Jakkalsberg A has five, and Bloeddrift 23 one. In addition, Jakkalsberg A produced one gunflint.

Although the pottery decorations from Jakkalsberg A and B are similar, there is an inconsistency in the spout pot from Jakkalsberg B and the six lugs from Jakkalsberg A. The spouted and decorated wares would conform to Sadr & Sampson's (1999) SPINC pottery, consistent with the dates of between 1300 and 1400 BP from the Jakkalsberg sites (and from Kasteelberg A/ Lower Kasteelberg B) (Sadr & Smith 1991). The lugs are probably from later (and often undecorated) forms (Sadr & Sampson's 1999 LUND), dated to around 1000 BP at Kasteelberg B (Sadr & Smith 1991).

The range of ostrich eggshell beads at Jakkalsberg A is between 2.6 mm and 10 mm. From Webley (1997) we can see that at least 20% of the 375 beads are smaller than 5 mm. The mean diameter is given as between 5 mm and 6 mm for both sites (except for a collection made by a local herder from the site which yielded a 6.4 mm mean) (Webley 1997). By contrast, Bloeddrift 23 has only five beads smaller than 5 mm (4% of total), but a mean of 7.6 mm.

There are similarities between all three sites and the indications are that the cultural and faunal materials would mostly fit with the herder end of the spectrum. However, Jakkalsberg A and Bloeddrift 23 both have materials that might be considered out of place on herder sites. These include formally retouched stone tools and small ostrich eggshell beads. Equally, both sites have later materials, such as a metal percussion cap and gunflint from Jakkalsberg A and domestic equid bones from Bloeddrift 23.

Although the dates for Jakkalsberg A & B are similar, the appearance of lugged wares on Jakkalsberg A suggests that there are later herder cultural elements on the site. Jakkalsberg A therefore appears to be primarily a herder encampment from two periods, as well as additional remains from other cultural groups. There are at least four separate occupation events: 1) hunter (formal tools and small ostrich eggshell beads, possibly decorated ostrich eggshell); 2) early herder (spouted wares and radiocarbon dates); 3) later herder (lugged wares); 4) historic (firearms). Jakkalsberg B is much more homogeneous, with all indicators pointing to an earlier herder occupation. Bloeddrift 23 has three periods: 1) hunter (formal tool and small ostrich eggshell beads); 2) later herder (lugged wares); 3) historic (domestic equids). The differences between Jakkalsberg A and Bloeddrift 23 are that the 'hunter' materials on the latter site are on the periphery of the main concentration. This allows us to be on surer grounds in asserting that the main concentration is from the later herder occupation.

Conclusions

The lack of overlap of the hearths at Bloeddrift 23, and the apparent dearth of ash dumps, indicates limited use of the site before sealing by slackwater sediments. The hearths probably indicate the individually owned cooking areas of each of 13 families.

We believe that although the corpus of cultural and faunal material at Bloeddrift 23 covers a period from possibly before 355 BP to the more recent historical past, the vast bulk of the material can be fitted comfortably into the archaeological signature of both the Kasteelberg and Doornfontein Industries. These comprise almost no formally retouched stone tools, large numbers of potsherds, and large (>5 mm mean external diameter) ostrich eggshell beads.

We have tried to demonstrate that the different archaeological signatures that exist in other parts of the Western Cape Province can be extrapolated to the lower Orange River. In spite of the consistency in the four radiocarbon dates obtained from Jakkalsberg, there is a distinct possibility that there are several periods of occupation represented. While the largest component of the cultural material may well be coeval with the dated hearths, assuming all of it is contemporary is problematic. We would like to suggest that the archaeological signatures of different economies along the lower Orange River, and changes in these through time, are sufficiently recognisable to enable us to identify those sites that may be mixed.

Acknowledgements

We thank Duncan Miller for help in identifying the metal object from Bloeddrift and Ina Plug for assistance with the faunal remains. We are also grateful to Herman Bruwer from Trans Hex who facilitated the work at the site.

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