

THE LATE HOLOCENE OCCUPANTS OF DIE KELDERS: HUNTER-GATHERERS OR HERDERS?*

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ABSTRACT

The question of whether the Late Holocene occupants of Die Kelders cave were hunter-gatherers or herders is investigated on the basis of comparison of artefacts and fauna from that site and those from sites identified by Smith *et al.* (1991) as having been occupied by one or other of these groups. The suggestion by Klein & Cruz-Urbe (in press), that the cave was occupied by herders, is also considered. It is concluded that the artefacts and fauna from Die Kelders do not meet Smith *et al.*'s criteria for either hunter-gatherer or herder occupation, nor do they support Klein & Cruz-Urbe's suggestion of herder occupation.

INTRODUCTION

On the basis of the analysis of a number of sites in the coastal region and two at its inland margin, Smith *et al.* (1991) concluded that it is possible to distinguish between those that are the result of the activities of hunter-gatherers and herders respectively. Briefly summarised, hunter-gatherer sites are said to contain relatively high frequencies of formally retouched stone artefacts (formal tools), few potsherds, relatively small ostrich eggshell beads and a predominantly wild fauna. Herder sites contain few formal tools, many potsherds, relatively large ostrich eggshell beads and a predominantly domestic fauna. It is thus appropriate to examine these aspects of the Die Kelders Late Holocene assemblage (DK1, ca. 1960-1465 BP; Schweitzer 1979, table 1) to see how they meet these criteria. Because analysis of the material from the 1992-3 excavations is not yet complete, data from the earlier excavations, which are generally similar to those from the later excavations, are used.

This paper concentrates on the Die Kelders evidence from layers 12 and 2, the former because it was the first occupation unit and the latter because it yielded the greatest number of remains of domestic sheep as well as a reconstructable pot that differs markedly from those in layer 12. In the comparisons with other sites, it should be understood that, according to Smith *et al.*, Kasteelberg A and B are herder sites, whereas Witklip, Driebos and Voëlvlei are hunter-gatherer sites. Except where stated otherwise, the data provided below are derived from the appropriate tables in Schweitzer (1979) and Smith *et al.* (1991).

STONE ARTEFACTS

Formal tools, consisting mostly of rather crude segments and small scrapers, account for only 0,9% of the DK1 site total, and utilized artefacts, mostly on cobbles and pebbles, for 10%. Quartzite (58% of the site total) is the most common raw material, followed by quartz (41%). Although quartz may be classified as a fine-grained material, its brittle nature causes it to fracture into mostly unusable pieces: 55% of the site total consists of chips and chunks. Despite this, the majority (58%) of the formal tools were made on quartz, followed by chalcedony (23%) and silcrete (16%), with only two (3%) on quartzite.

There is considerable variation in the frequency of the artefact categories in the various layers. Layer 12 yielded 46,4% of the site total of stone artefacts and 71% of the formal tools, layer 2 only 2,7% of the artefacts and none of the formal tools. Schweitzer's table 17 does not, however, indicate any discernible pattern of change from the bottom of the sequence to the top.

At Kasteelberg B (KBB) quartz is the most common raw material (51,5%), followed by quartzite (30,3%), but formal tools, said to be mostly on quartz and silcrete (Smith *et al.* 1991:87), account for only 0,2% of the site total. (The frequencies for Smith *et al.*'s sites have been adjusted to exclude ochre, which is not a material from which tools were made, although it is included in their tables of comparative tool type frequencies). Comparative data for Kasteelberg A (KBA) are not available.

At Witklip, a site about 10 km from the coast, quartz (63%) is the most common raw material, with silcrete

(29%) the next. However, formal tools, which account for 5,4% of the artefact total, are mostly (73%) silcrete, followed by quartz (26%). At both Voëlvlei and Driebos, the two painted shelters at the inland edge of the coastal plain, quartz is also the most common raw material, both overall and in formal tool manufacture. However, whereas at Voëlvlei formal tools, in both the pre-pottery and pottery levels, comprise 1,8% of the site total, at Driebos they account for 8,3% in the pre-pottery level but only 0,4% in the pottery level. The three 'hunter-gatherer' sites are thus more like the herder site of KBB in the frequency of the dominant raw material than any of the four is like DK1. Where formal tool frequencies are concerned, DK1 is intermediate between the higher figure for Voëlvlei and the lower figures for KBB and the pottery levels of Driebos.

POTTERY

Of the 1 118 sherds recovered from DK1, 84,6% came from layer 12 and 10,5% from layer 2. The forms of eight vessels from layer 12 could be wholly or partly reconstructed, but that of only one from layer 2. The reconstructed forms of the layer 12 vessels are markedly different from that of the layer 2 pot, but the sherds from the intervening layers are inadequate for determining whether the change was gradual or abrupt (Schweitzer 1978:155-170, figs 25-32).

Given that about 85 m³ of deposit was excavated, the total is low when compared with the more than 30 000 sherds recovered from the 71 m³ excavated at the KBA and KBB sites (Sadr & Smith 1991). Average sherd density per cubic metre for DK1 is 305 in layer 12 and 23 in layer 2. For KBB it is 700-800, for Witklip 11, for Voëlvlei 254 and for Driebos 354. DK1 Layer 12 is thus intermediate between the last two sites and layer 2 closer to Witklip than to any of the others.

In a later paper, Yates and Smith (1993:97, table 1) used a different method of calculating sherd density, in which the total number of sherds is divided by the total number of pieces of flaked stone. On this basis, DK1's densities of 0,3 for layer 12 and 0,7 for layer 2 fit better into the post-pottery hunter's site range of 0,02-0,5 than into the 1,1-1,6 range for "post-pottery herders" (*sic*) sites.

Although analysis of the material from the 1992-3 excavation is not yet complete, it appears that this will yield considerably fewer potsherds than came from Schweitzer's excavation, particularly in the case of layer 12 (pers. obser.).

OSTRICH-EGGSHELL BEADS

The diameters of the unbroken beads from DK1 layer 2, as well as three samples from layer 12, were measured for comparison with those from the sites mentioned above. The layer 12 beads are stored in separate containers according to their provenance in the squares and subunits within the layer and the samples were chosen at random, subject only to the container appearing

to contain a sufficient number for measuring. The mean diameter of each sample was tested (Student's *t*) against that of all the other DK1 samples as well as those of the similarly-dated samples studied by Smith *et al.*, whose comparisons did not include Voëlvlei or Driebos.

The mean diameters of two of the layer 12 samples (nos 1252 and 1444) are not statistically significantly different from each other, whereas those of the other paired samples (1252 & 1281 and 1444 & 1281) are very highly significantly different from each other ($p < 0.001$). The pooled layer 12 sample mean diameter is also very highly significantly different from that of the layer 2 sample. An indication of the nature of the difference between the layer 12 and layer 2 samples is that none of the layer 12 bead diameters exceeds 6,0 mm, whereas in the layer 2 sample 22% of the diameters are between 6,1 mm and 8,6 mm.

The layer 12 sample is very highly significantly different from that of the KBA 1800 BP sample, as is the layer 2 sample from the KBB 1300 BP sample. The layer 12 sample is not significantly different from the Witklip Unit 3 sample (1800-1400 BP), whereas the layer 2 sample is very highly significantly different.

At DK1 and Witklip, bead size increased through time, but at the Kasteelberg sites it decreased, although in the case of KBA this is not statistically significant. The DK1 beads are closer in range and mean to those from Witklip than they are to those from KBA and KBB.

Yates & Smith (1993:98) mentioned that sieves with a 3-mm mesh had generally been used in the excavations for which Smith *et al.* (1991) provided data, but that at Witklip the use of a sieve with a 1,5-mm mesh had retained "many small beads", whereas a test on the spoil-heap from KBB had not. The beads from the smaller-mesh sieve were not included in Smith *et al.*'s comparisons (fig. 6, table 2), but Yates & Smith considered that if they had been the distinction between the beads from that site and the Kasteelberg sites would have been even more marked. They also commented that "the very small beads we recognize as common from most hunter deposits are insignificant in all presently known herder inventories".

If the suggestion that herders preferred larger ostrich-eggshell beads than those worn by hunter-gatherers (Jacobson 1987, Smith *et al.* 1991, Smith & Jacobson 1995; but see Wilson 1993:334-5, Kinahan 1995) is accepted as valid, then it might be supposed that the layer 2 occupants of Die Kelders were - culturally, rather than biologically - 'hybrids': people in transition from being hunter-gatherers to becoming herders. However, given that the bulk of the layer 2 beads have diameters less than 6 mm and that the sample mean is significantly different from that of both the KBB herder sample and the Witklip hunter sample, the answer is far from clear.

DOMESTIC STOCK

Schweitzer (1979, table 27) reported on the recovery of the remains of a minimum of 30 sheep *Ovis aries*, plus

four doubtfully identified individuals. Of these, 18 came from layer 2 and 7 from layer 1, but none from layer 12. (G. Avery 1996, pers. comm.) has advised that the 1992-3 excavations yielded at least one from the upper part of layer 12.) The remains of only two doubtfully-identified cattle *Bos taurus* were recovered from layer 2 of Schweitzer's excavation. Klein & Cruz-Urbe (in press) report that wild bovids are more common than domestic ones in the fauna from the 1992-3 excavations, as was the case in Schweitzer's excavation, although in his layer 2 they are only marginally so (25:20). The situation is reversed at Kasteelberg (Klein & Cruz-Urbe 1989), with more sheep and cattle than wild bovids at both KBA (35 sheep, 2 cattle and 5 wild bovids) and KBB (54 sheep, 4 cattle and 36 wild bovids). Domestic animals were not recorded from Witklip, Voëlvelei or Driebos, but Smith *et al.* considered it possible that some (sheep) might be in the unidentified small-medium bovid class.

Klein & Cruz-Urbe (in press) consider that a composite mortality profile for the sheep from the earlier DK1 excavations, based on both age and sex determinations (Schweitzer 1974, 1979) shows that the sample comprises mainly very young males and old females, and that this "is consistent with flock management and suggests that the LSA occupants were herders rather than rustlers".

In Schweitzer's (1974) study, 7 were aged 6 months or less, 11 were 12 or 18 months and 4 were between 2 and 4 years. Schweitzer also reported that sex determinations could be made for only six individuals, all of which were male. Later, Schweitzer (1979:203) commented that it had been found that over 60% of the Namaqua Afrikaner ewes, at an experimental station where they were trying to back-breed Khoikhoi fat-tailed sheep, have horns. He therefore considered the validity of the argument for systematic herding, based on the frequency of horn-cores and the consequent suggestion of a dominance of young males and older females, to be "somewhat weakened". Klein & Cruz-Urbe (1989) provided a diagram of sheep mortality profiles that includes those from DK1. The total lifespan is given as 144 months and 25 of the DK1 sheep are put into the first 10% of lifespan, 3 in the second 10%, and only one each in the fourth and fifth 10%. This does not support the claim that the sample comprises mainly young and "old individuals", of whatever sex.

However, even if the argument for a dominance of young males and old females could be supported, another interpretation can be made. As was suggested elsewhere (Wilson 1993:347), young males and post-prime females being unnecessary for flock management, these are the parts of the flock most suitable for barter, or payment for various services (Smith 1990:10-11). Kolb (1738:171) said that the Khoikhoi did not separate the rams from the ewes, which consequently often lambed twice a year. This would account for a high frequency of lambs relative to more mature animals and, as they were smaller, they would have been less costly to their owners in the bartering process than would adult animals.

The virtual absence of sheep from the layers below layer 2 (4 plus 4 doubtfully identified) is not persuasive of a claim that the Holocene deposits are the result of the activities of herders. Even in the case of layer 2, if the two dates accepted by Schweitzer (1978, table 1) have any relevance (see Sealy & Yates 1994: 62; table 2), they show that this unit may have accumulated over a period of as much as 100 years, so that the presence of the remains of 18 sheep yields an average of about one every five years. That the majority of the sheep are juveniles suggests that their presence in layer 2 was not the result of a single episode, such as the theft of a small flock, since the sample would then have included a greater number of adults than is the case.

DISCUSSION AND CONCLUSION

DK1 is the only site of those discussed where quartzite is the most common raw material. It has low frequencies of formal tools, mostly on quartz, that are comparable to those from KBB, Voëlvelei and the pottery levels of Driebos. The average density of potsherds per cubic metre is closer to that of the 'hunter-gatherer' sites than to that of the herder sites. The ostrich-eggshell bead diameters are significantly different from those from the contemporary levels of KBA and KBB and closer in range and mean to those from Witklip. Wild bovids are more common at DK1 than are domestic ones, whereas the opposite is the case at KBA and KBB; and domestic animals were not identified in the fauna from the three 'hunter-gatherer' sites.

The foregoing indicates that DK1 has in common with the herder sites a low incidence of formal tools and the presence of sheep and potsherds, albeit relatively few. Where the frequency of potsherds and the size of ostrich eggshell beads are concerned, DK1 has more in common with the 'hunter-gatherer' sites than with the herder sites. Thus, in terms of Smith *et al.*'s (1991) criteria, DK1 cannot be classified as either a herder or hunter-gatherer site, although it must be pointed out that there is no great consistency in the components of the three sites they identified as hunter-gatherer.

Schrire (1992) studied the data used by Smith *et al.* (1991) to distinguish between herder and hunter sites and concluded that, because of the degree of overlap in the data from their two types of site, their evidence was "too inconsistent to confirm or deny the existence of two groups" and she asked why this should signify cultural rather than behavioural distinctions. She also suggested that if pastoralism had been adopted by local hunters they might have retained some of their practices when hunting and adopted new ones when more fully engaged in herding.

In their reply to Schrire's critique, Yates & Smith (1993, table 1) provided data that show that the hunter sites in Smith *et al.*'s (1991) study generally have consistently higher frequencies of formal tools than the herder sites and that the incidence of silcrete is generally higher at the former than at the latter. They also show that the frequency of potsherds, when calculated on the

basis of their 'pottery index', is consistently higher at their herder sites than at the hunter sites, though this is not always the case when comparison is based on the number of sherds per cubic metre.

In the present writer's view, however, the low frequencies of sheep and potsherds, together with the evidence that most of the sheep were lambs, suggest that the LSA occupants of DK1 were hunter-gatherers who, whether licitly or not, obtained domestic stock from herders, rather than that they were herders, as suggested by Klein & Cruz-Urbe. While it may be suggested that variations in raw material frequencies may be as much a matter of local availability as of suitability (or preference) for the task in hand, the reason(s) for variation in the frequency of formal tools - both within sites as well as between them - is a matter that is still far from being resolved. The use of the size of ostrich-eggshell beads as a means of distinguishing between hunter-gatherer and herder sites, rather than merely as an indicator of cultural change, also needs further investigation particularly from other indisputably-identified herder sites before the validity of this suggestion can be accepted.

Two other aspects need to be considered in the debate on the identity of the occupants of archaeological sites. The first is what kind of housing the earliest pastoralists in southern Africa had. If, as seems to have been the case, they had only sheep these animals would not have been able to transport the mat-and-wattle huts that were so typical of the Khoikhoi in the early period of recorded history (e.g., Raven-Hart 1967 *passim*; Kolb 1738:220-222, table 1, figure 1; Smith & Pheiffer 1993, plate 4). This would seem to allow for the suggestion that the early herders may have used caves, but this need not necessarily have been the case, as they could have made shelters from leafy branches or even mats, such as those used by modern San.

Caves in general are not suitable for even the temporary herding of small stock, particularly if some of these are to be slaughtered during the occupation. Die Kelders cave is difficult of access, from either east or west, for relatively long-legged, bipedal humans, let alone sheep, however agile they may have been. In fact, the site's relative inaccessibility, while it would have provided safety, may have been the cause of its relatively short Holocene occupation, although it is also possible that the problem of access developed subsequent to its last occupation.

The second aspect that needs to be considered is whether pottery preceded herding in South Africa, as is indicated by Kinahan's (1991) research in Namibia. As mentioned above, Die Kelders layer 12 yielded the greatest number of potsherds, and reconstructable vessel forms, but no remains of sheep, whereas the later excavation has yielded sheep remains but comparatively few potsherds. G. Avery (1996 pers. comm.) has advised that a radiocarbon date recently received for charcoal from layer 12 of the 1992-3 excavations is substantially the same as the date for Schweitzer's excavation and it

remains to be seen whether a new series of dates will support the original dates or the somewhat later accelerator dates on sheep remains published by Sealy & Yates (1994). Avery has also mentioned that, if possible, dates will be obtained directly from sheep remains from the later excavations, which will help clarify the situation regarding the disparity between Schweitzer's date for layer 7/9 (GX-1687: 1960 \pm 95 BP) and those obtained by Sealy & Yates (1994) from the sheep bone from layer 7 (OxA-3860: 1325 \pm 60 BP and OxA-3861: 1290 \pm 60 BP). The chronology of the introduction of pastoralism is clearly important for the evaluation of changes in the artefactual and faunal content of sites and the interpretation of the effect this had on the local inhabitants.

A subsidiary aspect is whether the change in the pottery styles, from those of layer 12 to that of layer 2, can be interpreted as evidence of a transition from the activities of hunter-gatherers who made pots to those of pastoralists who were initially herders of only sheep but, later, of cattle as well as sheep. Unfortunately, the information from the Kasteelberg sites (Sadr & Smith 1991), despite the large quantity of sherds recovered, provides no assistance in this regard, particularly as evidence of change is restricted to attributes of vessels, not to whole vessels, or even reconstructable forms (see also Wilson 1993:325-6).

The conclusion to be drawn from this study is that the evidence presently available is insufficient for it to be determined with any certainty whether Late Holocene sites were occupied by hunter-gatherers or herders, this being particularly true in the case of Die Kelders. Three possible scenarios need to be tested: that pottery was introduced by pre-pastoralist hunter-gatherers; that sites, whether in caves or in the open, that contain potsherds and the remains of domestic stock are the result of the activities of hunter-gatherers with access to commodities owned by herders; and whether the early herders, who apparently had only sheep and thus no animals suitable for transporting their huts and other impedimenta, lived in caves or rock-shelters as well as in the open. It is considered especially important that more sites be found that can be unequivocally attributed to the activities of herders: those who may have had only sheep as well as those with both sheep and cattle.

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