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THE CONTEXT OF SOME MIDDLE STONE AGE HEARTHS AT KLASIES RIVER SHELTER 1B: IMPLICATIONS FOR UNDERSTANDING HUMAN BEHAVIOUR*

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ABSTRACT

The spatial distribution of plotted stone artefacts and faunal remains provides information on certain aspects of the behaviour of early modern people at the Klasies River Cave complex between 90 000 and 60 000 years ago. A small area was excavated in Shelter 1B, and those stratigraphic units containing ash features are discussed. The ash features are interpreted as small domestic hearths which were used in the preparation of shellfish, and possibly other foods. The co-occurrence of hearths and concentrations of burnt shell, as well as the repeated placing of hearths in one part of a unit, suggests that there was possibly some consistency in the organisation of space within the shelter.

BACKGROUND

Southern Africa has produced some of the oldest fossils of modern humans in the world, and there has been much interest in the physical development of these people (e.g. Rightmire 1984a, 1984b; Braüer 1984; Braüer & Rimbach 1990). Complementary to this is an interest in the behavioural development of the early moderns on the subcontintent (e.g. Binford 1984; Klein 1987; Deacon 1989).

Most of the work on the behaviour of early modern people has been focussed on their subsistence strategies. One view holds that Middle Stone Age (MSA) people were modern in their behaviour but were limited by their technological capabilities (Klein 1975, 1976, 1987; Volman 1984). They hunted antelope and collected shellfish, although they were apparently not very efficient at either. In contrast to this Binford (1984), working on the faunal remains from the Singer & Wymer (1982) excavation at Klasies River, has argued that MSA people were opportunistic hunters and had to rely heavily on scavenging for the procurement of meat. This suggested a different kind of behaviour, with little food-sharing between people. A third view is that MSA people were modern in their behaviour, were not limited by their technological capabilities, but had a different perception of their environment (Deacon 1989). Scavenging provided a source of animal protein (Brink 1987), but the early moderns also actively hunted young prime adults of medium-sized antelope (*ibid*). They utilised a range of resources similar to Later Stone Age (LSA) populations (Deacon 1989). MSA people had a detailed knowledge of their environment and as they could make fire at will (evidenced by the many hearths at MSA sites), possibly increased the productivity of geophyte resources through purposeful burning (Deacon 1989). It would appear that by the end of the MSA these people had a perception of their environment similar to their LSA descendents (Opperman & Heydenrych 1990).

Evidence of the social and symbolic behaviour of early modern people is enigmatic. The differences between the MSA and the LSA are noted by some researchers (e.g. Volman 1984) but more recently studies of changes in the artefact sequences seem to indicate symbolic and social behaviour analogous to that of the LSA (Deacon 1989; Kaplan 1989; Thackeray 1989). While it is accepted that stylistic changes in artefact manufacture through time may have behavioural connotations, there is not as yet consensus on what these are.

Another approach to understanding human social behaviour is through an analysis of their use of space. Concepts such as what is meant by "modern behaviour" still need to be examined (see Henderson 1990b), and this can possibly be done by comparing how MSA and LSA people created or used their living space. A comparison of this sort falls beyond the scope of this paper, but the study reported on here is a contribution in this direction.

APPROACH

Identifying patterns

The arrangement of material objects has a spatial dimension. It is also an integral part of the social world (Lane 1987:55), and in this way the material and social are linked. Through consistency in the patterning and associations of objects, one can understand the "physical configuration" (*ibid*), and possibly draw inferences about

social behaviour.

Material culture is created by individual actions (Hodder 1986:6), although it is usually impossible to separate these actions from one another and is often thought irrelevant to do so (Kent 1987:4, 44). However, individual actions are not isolated events. People interact with each other and for their continuing existence these interactions have to be mutually understandable and acceptable. This does not mean that behaviour is formalised and actions proscribed (*ibid*, Lane 1987:56), but that social actions and interactions are negotiated within the accepted norms of the society (Hodder 1986:8-9; Lane 1987:56). Although each action is individual there will be similarities in activities within a group over time. The traces produced by these activities should therefore also exhibit similarities in form, content and distribution. One might therefore expect patterning of activity traces at a certain level.

However, one cannot expect to 'read' from the material remains what exactly people did at a site. All activities have their own particular context, which will regulate the location and duration of the activity, as well as the materials used and whether the activity was completed or not. Objects can enter into archaeological context at any stage during the activity of which they were a part (Newell 1987:113), not necessarily only when they were broken or were discarded on completion of the activity. Discard practises themselves can be extremely complex. The interplay of culture, perceptions of future planning and the physical properties of refuse, as well as the meanings attached to it, influence the spatial patterns of discard (Hodder 1987; Kent 1987; Stevenson 1991).

Modification of patterns

The very nature of a site can influence patterning. An archaeological site is the result of special conditions which preserve traces of past activities. If there is a concentration of material remains at a site, then there is an immediate problem of the overprinting of patterns, unless each particular activity is carried out in a separate area. Patterns will be preserved if the spatial arrangement of activities is "congruent with previous occupations of the same space" (Brooks & Yellen 1987:68). In other words the identical activities are carried out in the same place as in previous occupations. "Spatial redundancy" however will obscure patterning, as activities will overlap (*ibid*). Continued occupation of a particular location heightens the possibility that secondary accumulations of debris will occur (*ibid*) and that a greater range of activities will take place. These factors in turn will raise the possibility of the redundant use of space. There is also a greater likelihood of spatial overprinting if the dimensions of the site are fixed, such as is the case in a cave or shelter.

Apart from the movement of people around a site which will influence the distribution of artefacts (Stevenson 1991), there are the natural factors which modify the state of preservation of the archaeological material. The chemical composition of the soil, exposure of the deposit, disturbance (such as burrowing) and the micro-environment of the site in general all influence preservation. The modified sets of artefacts and food waste are further filtered through excavation and observation processes in the present.

Context and the object

Both the excavated object and its associations are basic to any archaeological analysis. The recognition of associations depends on detailed information on the context of an object. This contextual information is essential for the recognition of patterns (Toussaint 1978). In this particular study the trace fossils of human behaviour are stone artefacts, bone fragments and shellfish remains. The immediate context of these traces is the stratigraphic unit in which they have been preserved. The units are the result of certain depositional episodes or conditions and act as the boundaries for their contents. In the field units were distinguished from each other by colour differences and/or changes in matrix. The matrix of a unit had to be internally consistent. Information for the study reported on here was collected through detailed recording of the locations of the objects as they were excavated. This was done by a system in which the position, (including orientation and dip) of each object greater than a certain size was recorded three-dimensionally. Note was also taken of other inclusions and features as well as of the nature of the unit in which the objects occurred.

KLASIES RIVER

Extensive work has been done on the MSA from Klasies River (for location see Fig. 1). The stratigraphy of the site has been well detailed (Butzer 1978; Singer & Wymer 1982; Deacon & Geleijnse 1988), and the material from the excavations has been the subject of several major studies (Klein 1976; Singer & Wymer 1982; Binford 1984; Avery 1987; Thackeray & Kelly 1988; Thackeray 1988, 1989; Deacon 1989).

Klasies River main site consists of a series of caves and rock shelters cut into the cliff which forms the southern seaward margin of the coastal platform at this

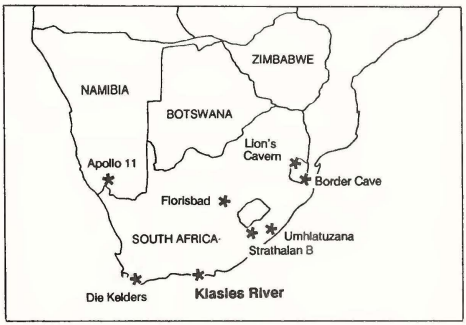

Fig. 1. Location of the sites mentioned in the text.

point. Each cave and rock shelter is numbered for reference (Fig. 2A). The first excavations at the Klasies River main site complex were conducted in the late 1960s by Ronald Singer and John Wymer (Singer & Wymer 1982). In 1984 H.J. Deacon initiated a new phase of excavations of which the one reported on here formed a part. These excavations were initially aimed at understanding the "effects of climatic change on the productivity and diversity in plant and animal communities and ultimately on the distribution and relative abundance of human populations" (Deacon *et al.* 1986:31). A later objective was to provide a firmer sequence for the dating of the hominid material from the site (Deacon & Geleijnse 1988). The Deacon excavations were mostly in the form of one metre square sampling columns, with larger areas being exposed in Cave 1.

The witness sections in Caves 1 and 1A are not suitable for large-scale excavation and permit the excavation of stratigraphic sampling squares only. Excavation of an area larger than a sampling square was, however, possible in the smaller Shelter 1B and a limited excavation measuring 2 m by 1,5 m was undertaken there. The Shelter 1B stratigraphic sampling square, (PP38) is located between the area excavation and the 1967-68 excavation (Fig. 2B).

The stratigraphic units at Klasies River

The deposits at Klasies River are made up of a series of dark, often shell-rich, horizons which are intercalated with yellow or yellowish-brown sands. The former relate to episodes of human occupation of the site, while the latter represent phases when the site was either not occupied or only sporadically so (for convenience these are referred to as non-occupation units).

The blackness of the occupation units is the result of the carbonisation of plant material (Deacon & Geleijnse 1988:12). It is known from Later Stone Age sites [such as Melkhoutboom and Highlands (Deacon 1976)], and now from Strathalan B (Opperman & Heydenrych 1990) that plant material was introduced to sites as bedding and/or as the waste from processing vegetable foods. It is only in the vicinity of a hearth that plant material has been burnt, elsewhere it has decayed and become humified. An example of this is in one of the units in Shelter 1B (see discussion below), DC PCP, where the black, carbonised portion around the hearths grades into a dark brown sand (DC BS3 of PP38). In the field the texture of the occupation horizons was often described as 'greasy' or 'oily', a reflection of the higher content of finely divided organic and clay materials in these units. In contrast the matrix of non-occupation units is sandy, with a large quantity of roof rock suggesting slow rates of sedimentation (Deacon & Geleijnse 1988:12, Fig. 11).

The occupation and non-occupation units differ markedly in their contents. The occupation units are dominated by imported worked stone in the form of flakes and the debris from flaking, while the lithic component of the non-occupation units consists mainly of roof spalls from the weathering of the cave itself. Stone

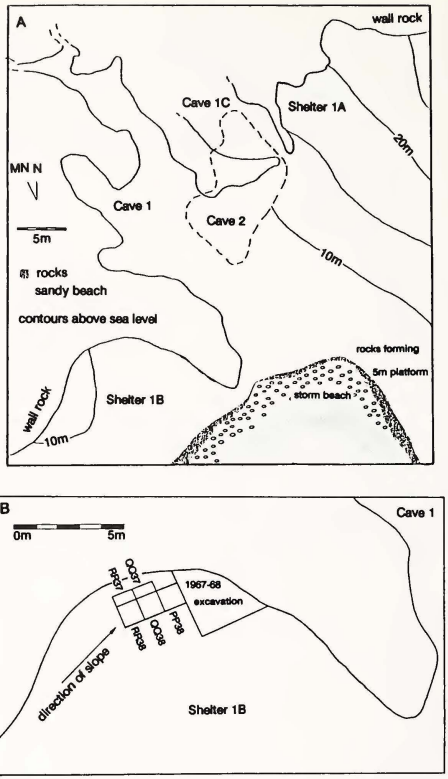

Fig. 2. A. Klasies River main site (after Deacon & Geleijnse 1988). B. Floorplan of excavations in shelter 1B.

artefacts and the waste from tool manufacture occur in the non-occupation units, but these are possibly chance incorporations derived from the slumping and erosion of older occupation units.

The faunal composition of the two types of units underlines their distinctiveness. Macrofaunal remains dominate in the occupation units, while the remains from non-occupational horizons are predominantly microfauna, fish and reptile bones and the result of the use of the caves by birds (Deacon & Geleijnse 1988:12) and small carnivores. There are spotted genet latrine areas in the back of Caves 1 and 2 at present. Their faeces contain microfauna and it is likely that microfaunal remains are in part due to the presence of viverrids in the caves. Cormorants are probably mostly responsible for the fish-bone accumulation. It has been noted in the present that comorants use the cliffs as a resting place, and that they regurgitate pellets of fish-bones, which fall into the excavations.

A characteristic of the occupation units at Klasies

River is that they are shell-rich. The shells are high-bulk, non-edible residue and can contribute significantly to the volume of included materials, although the quantity and state of preservation of the shells differs between the units. Shell is generally better preserved in the shell midden units than in the occupation units where the chance of compaction is greater with the decay of organic material. Mussel shells are easily compacted, especially when they have been burnt. The alkalinity of the unit also affects the preservation of shell and as with the faunal remains the state of preservation decreases away from the cave walls.

The random orientations of the stone artefacts and bone fragments indicate that the slope did not cause any major post-depositional movement within the units, which appeared to be stratigraphically distinct. Although this distinctness is not necessarily an indication that any inclusions are in primary context (Villa 1982), there are no signs of unnatural sorting of artefacts (see Matthews 1965; Stockton 1973; Siiriainen 1977). The density of materials within the units indicates that it is unlikely that each unit was the result of a single occupation episode. One of the units contained six ash features, and this points to the fact that the units represent a collection of occupation episodes within a relatively short period. There must have been a time-lapse between episodes sufficient for the traces of the previous occupation to be covered, as the ash features have been individually preserved even though they occur next to, and sometimes on top of each other. Most objects were found lying horizontally, but there were examples which had been tilted or were vertical. One flake-blade was found which had broken in half under pressure. The proximal and distal ends were tilted upwards and in cross-section the blade was lying in a V position. This could be consistent with settling and the compaction of the deposit which would have occurred with the decay and/or carbonisation of plant materials.

DATING

The units which were excavated for this study were near the top of the deposit in Shelter 1B (Fig. 3), about 1m above the level of a modern human mandible (no. 41815) found in the 1967/68 excavations (Singer & Wymer 1982). The units have been correlated with the Sands-Ash-Shell (SAS) member of Cave 1 (see Deacon & Geleijnse 1988 for more detail). This member has electron spin resonance (ESR) dates on tooth enamel of between 90 000 and 60 000 years (Grün *et al.* 1990). This age estimate agrees well with the amino acid racemisation dates obtained on bone which bracketed the SAS member to between 90 000 and 65 000 years old (Bada & Deems 1975).

KLASIES RIVER SHELTER 1B

The deposit in Shelter 1B was originally much more extensive than it is today. The units in the area excavation have been truncated in the south-eastern portion of the excavation. This would be expected if water was the agent responsible for the erosion as it would follow the north-east south-west slope of the surface of the shelter. What remains is the rear portion of a mound of occupational debris.

The units

Three occupation horizons were sub-units of the DC BS1 compound unit (Fig. 4, DC is a submember in the SAS member, and BS1 is the first brown sand unit excavated). DC BS1 was a light brown sand with high frequencies of stone artefacts and bone fragments. Apart from the three occupation units, there was one small shell lens in the southern part of the excavation, and a patch of darker soil between CP2 and CP3 (CP is a carbonised parting). None of the occupation units covered the total area of the excavation. It is possible that the whole of DC BS1 resulted from a phase of occupation within a restricted time-period (of possibly several decades), and that the CP's merely indicate that during the time of their formation fires carbonised material in the vicinity of the excavated area. The CP's are the minimal observable units and could represent a particular event or several events close together in time as is indicated by the presence of one or more hearths in the excavation. DC BS1 CP2 is not discussed further in this paper as it did not contain an ash feature.

The DC PCP (partly carbonised parting) occupation unit occurred stratigraphically below a non-occupation unit, DC YSM (yellow sand marker), and was quite separate from the DC BS1. It was the most complex of the horizons in that it contained six hearths and a possible waste disposal area.

DC BS1 CP1

This was the uppermost of the occupation horizons of the area excavation. It was also the most limited in extent as a result of the erosion of the deposit in that part of the site (Fig. 5).

One small, oval ash feature, AF, measuring 200 mm by 100 mm, was preserved in this unit. Adjacent to the ash feature, and contemporary with it, was an elongated patch of burnt *Perna perna* shell, measuring 400 mm in length and between 50 mm and 150 mm in breadth. There were no artefacts or bone in the ash feature and only one flake-blade in the *P. perna* concentration. The two features combined are referred to as the main feature, F1. The direct association of a hearth feature with a concentration of burnt shell is repeated elsewhere in the excavation, and is observable patterning in food processing and waste disposal. To the north of F1 was another area which appeared to have higher quantities of *P. perna*. It was some 300 mm in diameter and is referred to as the second feature, F2. Several large blocks of roof rock were present in the vicinity, as were most of the plotted stone artefacts and waste in the unit. This feature was partially eroded away and it is possible that an ash feature was associated with it but had been destroyed by erosion.

Of the stone artefacts plotted in CP1, five of

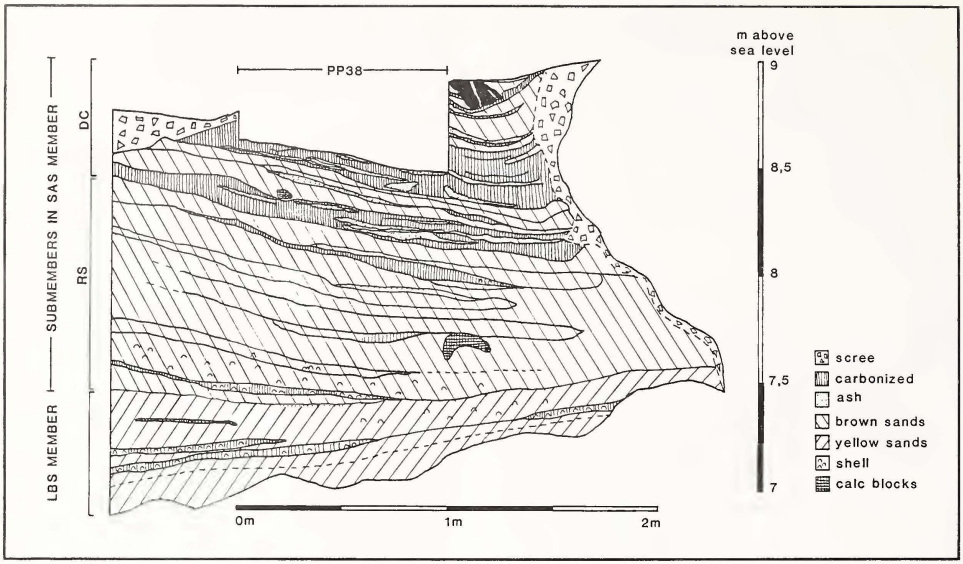

Fig. 3. Shelter 1B: west wall section of 1967-68 excavation.

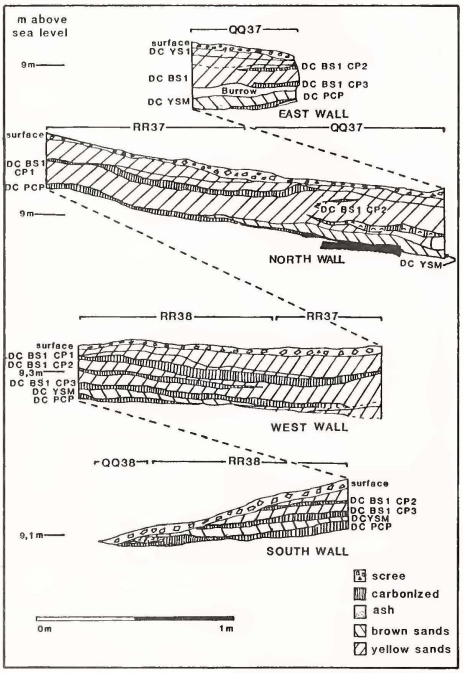

Fig. 4. Shelter 1B: area excavation sections.

these occurred in F2. There was one small piece of ochre in the unit which, although smooth, had no signs of modification or use. This was found in the western part of the excavation. The plotted bones appeared to be clustered in two main areas. The denser of these clusters formed part of F2. The other bone cluster, located in the south-western corner of square RR37, had few associated, plotted, stone artefacts.

Nine species are represented in the plotted bone sample, and they include all bovid size classes from small (SB) to small medium (SMB), to large medium (LMB) and to the large class (LB). *Raphicerus* sp. (grysbok or steenbok) and *Arctocephalus pusillus* (seal) are the species represented by the most body parts. Most of the *Raphicerus* sp. remains were located around F2 while the *A. pusillus* bones were spread over the entire excavation. The most noteworthy occurrence of seal bones was that of two ribs and a metapodial which, along with a bird bone and a canid vertebra, made up a small intermediary group between F2 and the accumulation in the south-western corner of RR37. The large bovid remains appeared to be restricted to the southern part of the excavation. Two rib fragments, one of which was slightly blackened, lay next to one another. The remains of a hippotragine antelope could be positively identified on dental remains.

Three carnivores identified in the unit were *Felis nigripes/lybica*, a canid and a large carnivore. Skeletal elements that could be identified as *Procavia capensis* (hyrax), *Lepus* sp.(hare) and *Papio ursinus* (baboon) are also present in the sample.

P. perna was the dominant species of shellfish

present in the unit. Other shellfish present were *Turbo sarmaticus*, *Patella granatina*, *Patella* sp. *Donax serra*, *Choromytilus* sp. and *Burnupena* sp.

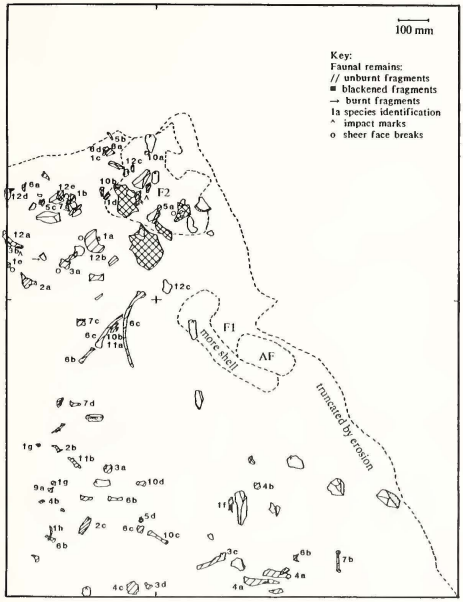

Fig. 5. Plan of DC BS1 CP1, showing distribution of artefacts and faunal remains. Non-artefactual inclusions are cross-hatched.

Key to identifications of plotted bone fragments from DC BS1 CP1:

1. (a) Small bovid (SB): cervical vertebra fragment.
   (b) *Raphicerus melanotis* (SB): cervical vertebra.
   (c) *Raphicerus melanotis* (SB): distal end of right humerus.
   (d) *Raphicerus melanotis* (SB): astragalus.
   (e) *Raphicerus melanotis* (SB): navicular cuboid.
   (f) SB: radius shaft fragment.
   (g) SB: proximal head of right femur (2).
   (h) *Raphicerus melanotis* (SB): rib fragment.
2. (a) Small-medium bovid (SMB): pelvis fragment.
   (b) SMB: transverse process of lumbar vertebra.
   (c) SMB: rib fragment.
3. (a) Large-medium bovid (LMB): thoracic vertebra fragment.
   (b) LMB: spine of thoracic vertebra.
   (c) LMB: ulna shaft fragment.
   (d) *Hippotragus leucophaeus* (LMB): first incisor.
   (e) *Hippotragus leucophaeus* (LMB): lower deciduous fourth premolar.
4. (a) Large bovid (LB): rib fragment (2).
   (b) LB: sesamoid (2).
   (c) LB: caudal vertebra fragment.
5. (a) *Procavia capensis*: right femur.
   (b) *Procavia capensis*: radius.
   (c) *Procavia capensis*: right maxilla.
   (d) *Procavia capensis*: lumbar vertebra.
6. (a) *Arctocephalus pusillus*: clavicula fragment.
   (b) *Arctocephalus pusillus*: metapodial (3).
   (c) *Arctocephalus pusillus*: rib (2).
   (d) *Arctocephalus pusillus*: metatarsal.
7. (a) Large carnivore: proximal metapodial.
   (b) *Felis nigripes/libyca*: distal end of left humerus.
   (c) Canid: vertebra.
   (d) Canid: thoracic vertebra.
8. (a) *Lepus sp.*: pelvis acetabulum.
   (b) *Lepus sp.*: atlas.
   (c) *Papio ursinus*: proximal tibia fragment.
9. (a) Reptile: vertebra.
10. (a) Bird: phalange.
    (b) Bird: bone fragment (2).
    (c) Bird: tarsometatarsus.
    (d) Bird (penguin): metapodial.
11. (a) Bovid: horncore fragment.
    (b) Bovid: thoracic vertebra spine fragment.
12. (a) Rib fragment.
    (b) Large mammal, vertebra.
    (c) Cervical vertebra fragment (2).
    (d) Vertebra fragment.
    (e) Sacrum fragment.

DC BS1 CP3

This was the lowest, thickest, and most extensive of the three occupation units within DC BS1, although it did not extend over the whole area (Fig. 6). The colour of the sandy matrix varied significantly over the unit and was darkest in the centre of the excavation. It was more brown in colour than the other partings suggesting that, in part, the original plant component was humified rather than carbonised.

There was one small ash feature in the excavated area of the unit (Fig. 7). It contained very little in the way of stone artefacts or bone fragments, but is comparable to the ash features from the DC PCP unit. None of the plotted bone was associated with the ash feature, but was rather located mostly north of the larger block of roof rock and the hollow in RR38. The plotted stone was most dense between the two blocks of roof rock in QQ37 and the hollow in RR38 slightly to the east of the main bone concentration. This is where all three cores from the unit were located within 400 mm of each other. A much less dense scatter of artefacts occurred in a semi-circle from the roof rock in RR38 around to the west of the ash feature. Between this, the hollow in RR38, and the edge of the unit was a light scatter of artefacts; a pattern which suggests a cleared working or sitting space next to the fire. The 17 artefacts which had traces of damage on the edges were randomly distributed throughout the unit.

The plotted bone from CP3 demonstrated the most interesting patterning of all the occupation units excavated. Burnt and blackened bones occur over the whole area of the unit, but those bones with evidence of battering and cut or chop marks appeared to be centered around the hollow in the middle of the excavation. There

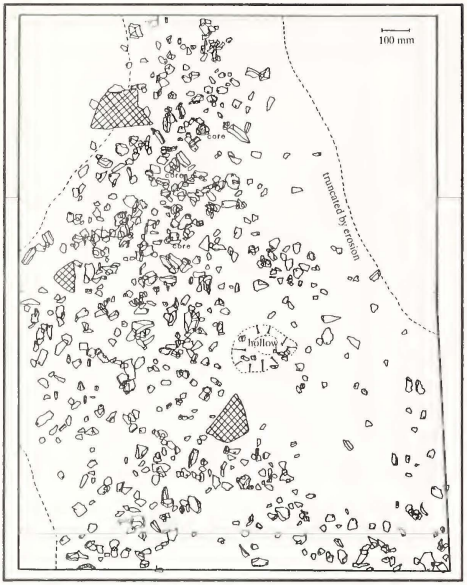

Fig. 6. Plan of DC BS1 CP3 plotted stone artefacts.

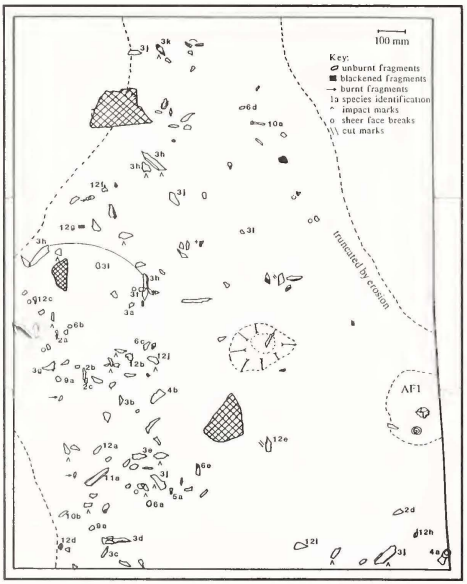

Fig. 7. Plan of DC BS1 CP3 plotted faunal remains showing ash feature (AF1).

Key to identifications of plotted bone fragments from DC BS1 CP3:

2. (a) Small-medium bovid (SMB): distal end first phalanx.
   (b) SMB: metatarsal.
   (c) SMB: second phalanx.
   (d) SMB: rib fragment.
3. (a) Large-medium bovid (LMB): metacarpal. fragment
   (b) LMB: tooth root.
   (c) LMB: rib fragment.
   (d) ?LMB: shaft fragment.
   (e) LMB: radius fragment.
   (f) LMB: proximal end of radius.
   (g) LMB: mandible fragment.
   (h) LMB: metatarsal fragment (4, 2 conjoining).
   (i) LMB: carpal.
   (j) LMB: tibia shaft fragment (4).
   (k) LMB: ulna shaft fragment.
   (l) LMB: sesamoid.
4. (a) Large bovid (LB): calcaneum (newborn/fetal individual).
   (b) LB: mandibular symphysis.
5. (a) *Procavia capensis*: distal end of humerus.
6. (a) *Arctocephalus pusillus*: epiphesis fragment.
   (b) *Arctocephalus pusillus*: vertebral epiphesis.
   (c) *Arctocephalus pusillus*: clavicular fragment.
   (d) *Arctocephalus pusillus*: third phalanx.
   (e) *Arctocephalus pusillus*: rib fragment.
9. (a) Tortoise carapace (2).
10. (a) Bird: distal end of tibiotaures.
    (b) Bird bone.
11. (a) ?Bovid: shaft fragment.
12. (a) Small animal skull fragments.
    (b) Petrosum.
    (c) Proximal end of second phalanx.
    (d) Skull fragment.
    (e) Rib fragment.
    (f) Cervical vertebra fragment (juvenile).
    (g) Rib articulation.
    (h) *Cryptomys hottentotus* (common mole rat): maxilla.
    (i) Ilium (pelvis) fragment.
    (j) Humerus shaft.

is evidence for the processing of the lower portions of both a front and a back limb of a large-medium bovid, but unfortunately none of the fragments can be identified to species level. Two of the four metatarsal fragments, lying 400 mm from each other, are conjoinable, and the other two fragments appear to come from the same bone. One of the four tibia shaft fragments has chop marks, and the ulna fragment is blackened. Evidently the limb bones were being broken up, possibly for the extraction of marrow. It could also be that the bones were being heated to make marrow extraction easier, as has been suggested by Binford (1984:164). The large-medium bovid remains also included two fragments of a radius, as well as a sesamoid, a carpal and a metacarpal. Visually the four metatarsal fragments appear to belong to the

same bone, as do the four tibia shaft fragments. The assumption made here is that there is only one individual represented (and then only by two lower limbs). It is possible that more of this individual would have been uncovered if the excavation had been larger, but as only the lower parts of different limbs are represented butchery may have taken place elsewhere.

Apart from at least one small-medium bovid, there are two individuals from the large bovid size-class. These are represented by a fragment from a mandibular symphysis, and the calcaneum of a newborn or foetal calf. As in the other occupation units, *Arctocephalus pusillus* is well represented; in this instance by a third phalanx and bones from the thoracic portion of the animal.

DC PCP

This was the most extensive of the carbonised horizons investigated (Fig. 8), and was between 5 mm and 20 mm thick over most of the area excavated, reaching a maximum of about 30 mm thick in the south-western corner of RR38. It covered most of the area excavation and was dark in colour but graded into a brown sand in PP38. It was darkest in colour and therefore most distinctive in QQ38 and RR38. It is perhaps no coincidence that most of the ash features occurred along the QQ38/RR38 border. All of the features excavated fell wholly or partially into RR38 (Fig. 9), and there were several small patches of dense ash in the soil matrix of the square.

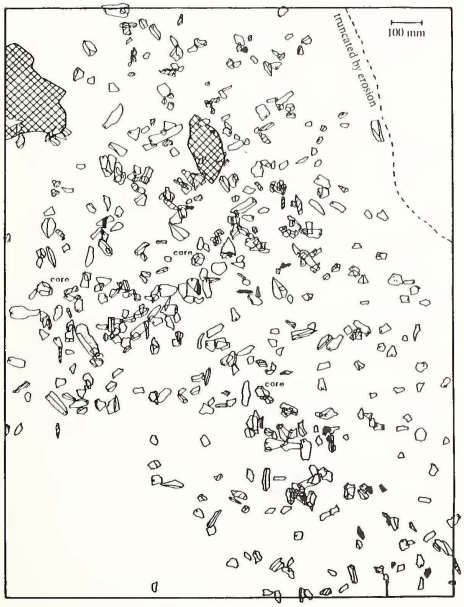

Fig. 8. Plan of DC PCP.

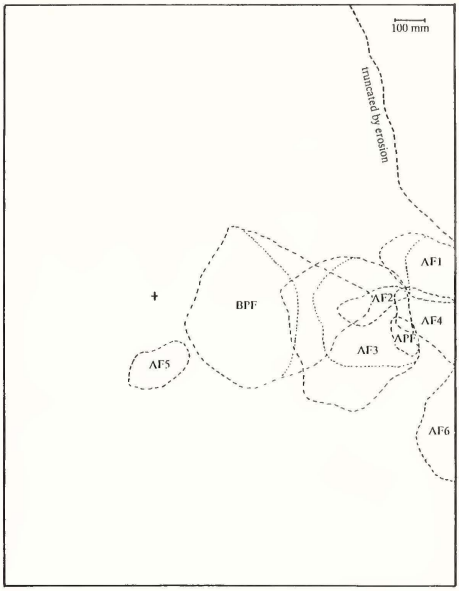

Fig. 9. Location of features in DC PCP.

Difficulty was experienced in tracing this unit towards the cave wall section of RR37 and QQ37 where it was more sandy. Along this side there was a dense brown sand lens, different in character to the over- and underlying non-occupational units, and containing less shell than the DC PCP. As with DC BS1 CP3 the stratigraphy is not well preserved against the wall.

The most interesting observation that relates to the DC PCP unit is the location of the features within it. Six discrete ash features occur in one area which would seem to indicate that over a limited time period fires were repeatedly made in one part of the site. The largest of the features was AF3. It lay in a hollow directly on the underlying sand unit, DC BS3, which had been carbonised in this area by the fire. The hearth appeared to be associated with what was labelled the Burnt Perna Feature (BPF) (Fig. 10). This feature was distinguishable from the rest of the unit not only by its slightly ashy appearance but also by the texture of its loose matrix of fragments of burnt *P. perna* shells. It extended partially over the top of AF3, but the bulk of the feature lay alongside the ash feature also in a hollow in DC BS3. To the east of AF3 and partially in the ash was another small concentration of burnt *P. perna* shell fragments. From the close association of shells with the hearth it could be inferred that the fire was used to cook the shellfish. Bivalve mussels are tightly closed when collected off the rocks, but open up when placed on a fire. The two associated features can be interpreted as the remains of shell debris around a hearth after the bulk of the waste shell had been discarded elsewhere. The low minimum

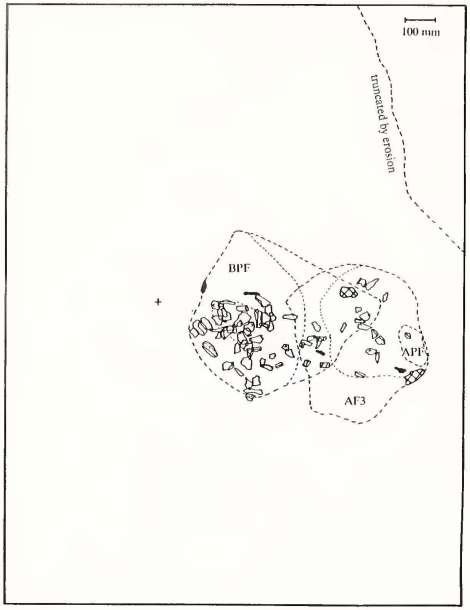

Fig. 10. DC PCP AF3 with BPF APF.

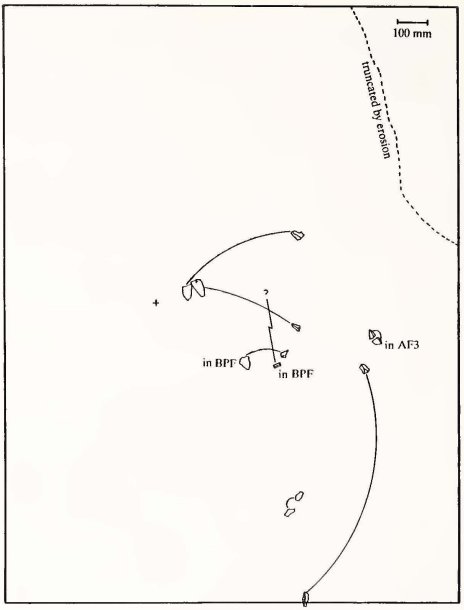

Fig. 11. Plan of conjoining artefacts from DC PCP.

count of shellfish associated with a well developed hearth suggests regular waste disposal.

On top of AF3 was another hearth, AF2. The two hearths were distinguishable from each other, as the carbonised under portion or 'underburn' of AF2 was clearly visible lying in the top of AF3. It was a small ash feature, and consisted of a white ash underlying a grey ash. AF1, AF4 and AF6 were similar to AF2. All were thin whitish-grey ash lenses with little in the way of contents. AF5 had a more sandy matrix with a significant white ash component. AF6 was located directly under the ash feature in the DC BS1 CP3 unit. AF1, AF4 and AF6 were at about the same height and AF2 lay above AF3. The base of the hollow of the BPF was lower than that of AF3, although the two features were interlinked and were at the same level as AF5.

The plotted artefacts and bone fragments were randomly scattered over the unit although the scatter was less dense in the region of the ash features. An attempt was made to conjoin artefacts and flakes in the DC PCP unit and its features. Although the quartzite raw material is uniform in appearance, making refitting difficult, seven joins were made (Fig. 11). Of these, four were of artefacts which were broken and three were representative of stages of artefact manufacture. One of the broken artefacts was a flake-blade from the BPF. The two pieces were found lying parallel to each other, ventral side up and 20 mm apart. In two cases joins were made between an artefact in the BPF and one in the DC PCP. One of the pieces is a chunk which lay about 150 mm away from its conjoinable small flake in the DC PCP. The other is a medial flake-blade section. The distal section was unplotted, but lay in another square at least 200 mm away. The remaining four joins were made over distances of 792 mm, 415 mm, 354 mm and 54 mm. The nine stone artefacts which showed signs of edge damage were scattered over the whole unit. Two of these were medial flake-blade sections, and one an almost-complete parallel flake-blade, with its distal end missing. The distribution of the conjoining artefacts and those with edge damage was random and it does not appear that any obvious disposal practices were linked to artefact production or utilisation.

The blackened and burnt bone fragments appear to be fairly equally divided between the eastern and western parts of the excavation. However, the majority of the identifiable parts and those bone fragments with longitudinal cracking were found in the eastern portion of the excavation (Fig. 12). The bones in the western portion of the excavation display cutmarks, fire cracking and are very broken up. This could indicate that processing had taken place in the vicinity or that this was a general dump area.

Apart from *Arctocephalus pusillus*, other species identified were *Connochaetes gnou*, *Syncerus* or *Pelorovis*, and *Procavia capensis*, as well as two carnivores, *Felis lybica*, and a hyaenid. The body parts from the various species, and from the four bovid size classes, are given in the key to Figure 12.

As in the other occupation horizons, the dominant shellfish species was *Perna perna*. Other species recorded were *Choromytilus* sp., *Patella* sp. and

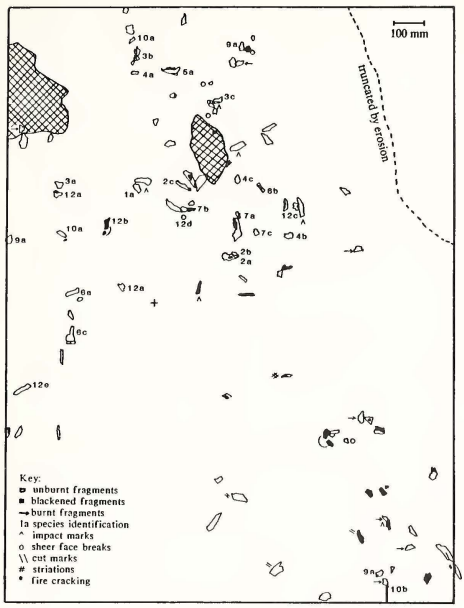

Fig. 12. Plan of plotted faunal remains from DC PCP.

Key to species identifications of plotted bone fragments from DC PCP:

1. (a) Small bovid: cervical vertebra.
2. (a) Small-medium bovid (SMB): thoracic vertebra fragment.
   (b) SMB: cervical vertebra fragment.
   (c) SMB: dorsal part of pelvis.
3. (a) Large-medium bovid (LMB): distal end of second phalanx (young individual).
   (b) *Connochaetes gnou* (LMB): fragment of left maxilla with third and fourth deciduous premolars.
   (c) LMB: vertebra spine end.
4. (a) Large bovid (LB) *Syncerus caffer* (or *Pelorovis antiquus*): upper deciduous premolar.
   (b) LB: proximal end of radius.
   (c) LB: os malleolave.
5. (a) *Procavia capensis*: left mandible.
6. (a) *Arctocephalus pusillus*: metapodial and epiphesis (young individual).
   (b) *Arctocephalus pusillus*: metapodial.
   (c) *Arctocephalus pusillus*: clavicula (young individual).
7. (a) *Felis nigripes/libyca*: calcaneum (young individual).
   (b) ?Hyaenid: distal end of metapodial.
   (c) Large carnivore: carpal.
9. (a) Tortoise carapace (3).
10. (a) Bird (penguin): bone (2).
    (b) Bird: shaft fragment.
12. (a) Fragment of lumbar vertebra (2).
    (b) Proximal end of metapodial.
    (c) Fragment of cervical vertebra.
    (d) Small-medium mammal rib.
    (e) Proximal end of tibia.

Turbo sp.. The *Choromytilus* sp. counts from this unit were relatively high (23 individuals). *Choromytilus* is a west-coast species, preferring colder water (Kilburn & Rippey 1982) and able to tolerate sandy conditions better than *Perna perna*. The *Perna perna* shell frequencies from this unit were also high and no simple ecological reason such as cooler waters or sandier conditions, can be offered for the high *Choromytilus* counts.

CAVE 1B: PATTERNS IN SPACE

It may be assumed that in a large area excavation it would be possible in spite of overprinting, to gain an understanding of the gross spatial organisation of activities at the site. Here the emphasis is on micro-scale patterning and detail in a limited area.

Unit CP1 had the least number of artefacts. It is likely that there is less overprinting in this unit than in the CP3 and PCP units. The density of the artefacts in PCP is less than that for CP3, although PCP had six ash features whereas CP3 had only one.

A focal point for discussions on spatial arrangements is "the concept of a feature, a unique palimpsest or patterning of archaeological material or modification of the occupied surface" (Johnson 1984:77). Activities are often focussed on and arranged around features, as they are immovable, and once created form part of the 'structure' of the occupied area. Simek (1984) has demonstrated that features "act as 'centres of gravity' for artefact distributions". At Klasies River 1B, the distribution of ash features in the various units will be the focus of attention, but the area excavated was not large enough to determine whether they acted as 'centres of gravity' in the shelter as a whole.

The ash features in CP1, CP3 and PCP were in the same portion of the excavation (Figs 4, 6 & 8). AF1 in CP3 was directly above AF4 in PCP. The concentration of ash features in this portion of the excavation would appear to support the idea that at the periods of occupation represented by the units, site use was similar. The arrangement of ash features 1, 2, 3, 4 and 6 in PCP is an indication that on at least five occasions there was a very definite preference for that particular location. It can be concluded that the placing of fires in that part of 1B was not altogether random, at least during some phases of occupation. The determining factors of fire placement could be either physical, such as shelter from wind or rain, or they could be social.

The fires were consistently less than or equal to 0,5 m in diameter. The dimensions of the complete hearths ranged from 0,2 m by 0,1 m (DC BS1 CP1 AF1) to 0,3 m by 0,35 m (DC PCP AF3). If the thin ash spread around DC PCP AF3 is included, the feature is at least 0,5 m by 0,45 m in diameter, and with the BPF, the compound feature is in the region of 0,8 m by 0,65 m. This is the largest excavated ash feature in this particular exavation. Even so, it is not very extensive. The sizes of the ash features suggest individual or small rather than large group hearths, and if these can be interpreted as domestic hearths, they are an indication that food

preparation was carried out on an individual or immediate family rather than group basis.

The six ash features in PCP represent different episodes of site use that were not separated by any considerable length of time. One can assume that the time interval involved was of the order of a few years rather than tens of years. Each hearth would have been used for a period of weeks or even months judging by the volume of ash preserved. This is suggested by a modern experiment conducted during the course of more recent field work when a hearth created one km away from the main site at the Cave 5 camp was excavated three years after it was abandoned. It had been used daily for a period of three weeks for all domestic tasks such as cooking and boiling water, by six people. The hearth measured 1,2 m by 0,8 m in its largest dimension and 0,3 m at its deepest. The large volume of ash which had accumulated had already become quite compact, giving some indication of the effect of post-depositional modifications, such as leaching of solubles on this type of deposit.

UNDERSTANDING PATTERNS IN CONTEXT

The Cave 1B deposit reported on here probably dates to between 80 000 and 70 000 years BP, and in an open shelter, even with the protection of a fore-dune, the deposit would have undergone considerable diagenesis over time. Studies of the spatial distribution of activities are made more difficult where sites were densely occupied and where the deposits have become very compacted. Both these conditions pertain at Klasies River Shelter 1B and in consequence the overprinting or spatial redundancy of patterns is high.

Klasies River main site acted as a focus in the movement of people in the landscape. The total quantity and variety of occupation debris suggests that people used the main site (including the 1B Shelter) repeatedly as a living place. The multiple discrete horizons produced by human occupation and the separation of these horizons by those of variable thickness formed by natural processes is indicative that occupation was episodic and not extended. It is unlikely that habitation of the site was by sedentary groups as postulated by Singer & Wymer (1982:107). In contrast, however, the site was more than just a convenient shelter for brief stop-overs to cook a few mussels and eat scavenged meat (Binford 1984).

Even a single unit probably does not represent a single occupational episode. Unit DC PCP represents at least six episodes of hearth building within a certain period (perhaps a few years). The hearths are in the same part of the excavation but at varying heights in the unit and the assumption is that they were not used at the same time. Any spatial patterning that has been preserved at the site will therefore be the result of congruent use of space over that particular timespan. This could have implications as to consistency in planning depth, and notions of hygiene and comfort of the early modern humans.

The following points can be summarised from a detailed study of the units and their contents.

1. There are rich concentrations of stone artefacts and food waste in the form of bone and shell fragments in the depositional units excavated. Some of the stone artefacts and some of the bone fragments can be conjoined.

2. The units contain ash features with carbonised surrounds. In one unit there are six discrete ash features and associated with one of these features are two patches or concentrations of burnt *Perna perna* shell. This association of burnt *Perna perna* shell and an ash feature also appears to be present in at least one other unit.

From an analysis of the actual contents of the units (Henderson 1990a) the following points can be added.

1. In the artefact sample from the units excavated there are very few stone flakes which are first removals from cobbles. The cores are worked out and the standardised artefact component (see Thackeray & Kelly 1988) is made up entirely of complete, almost complete and sections of flake-blades.

2. The faunal sample is fragmentary, but impact damage and cut marks are evident on some fragments. Most of the species which have been identified in the faunal samples from the different units are represented by one or two fragments only, and species from a variety of habitats may occur within the same unit. Remains of small and/or large carnivores occur in all units excavated.

3. *Perna perna* is the dominant shellfish species represented. Variable proportions of other preferred taxa have been recorded in the samples from the different units excavated.

Certain inferences can be drawn from the foregoing.

The Klasies River Caves and Shelters were a location where people in the past lived and purposefully discarded refuse.

In one particular part of shelter 1B there was a repetition of domestic tasks which had to do with the preparation of food.

Primary stone tool knapping took place at least one metre away from the hearth area. Both humans and carnivores had had access to the bones present in the deposits in the shelter. In the 1B excavation there was no sign of the order in which this happened. Binford, however, noticed cut marks over tooth marks on some of the bones from the Singer & Wymer excavation, and this he takes to be a proof of the fact that the MSA people had been

scavenging from carnivore kills elsewhere and bringing the bones back to the caves (Binford 1984).

Shellfish were cooked on open fires. The co-occurrence of concentrations of burnt *Perna perna* shells and hearths in at least two instances suggests that (possibly for reasons of cleanliness and/or comfort) there might have been organisation of the use of space within the shelter and possibly regular disposal of food waste.

CONCLUSION

Although I think one can accept that the hearths excavated in Shelter 1B were used for the processing of shellfish and animal meat and bones, it is not possible to say much more about the organisation of space within the shelter, other than that it appears as if there was some consistency in the location of the hearth, and small shell disposal features. Spatially more extensive excavations would demonstrate whether this consistency is part of a pattern of space use. However, even with the limited work done so far one could propose that the disposal of certain bulky waste (in this case shell) did occur and was possibly a regular part of the activities of the inhabitants of Shelter 1B. The organisation within the Strathalan B Cave seems to indicate that activities to do with the preparation of food took place near the hearth. Bedding grass was located well away for the hearths (Opperman & Heydenrych 1990). This pattern appears in LSA contexts as well (see Henderson 1990b). It would be interesting to extend the excavation of 1B to see whether late Middle Stone Age/LSA patterns of space use within caves are similar to those from the earlier part of the MSA, as indicated at Klasies River.

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