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**PHASE 2 ARCHAEOLOGICAL EXCAVATIONS OF LATE
STONE AGE MIDDENS AT KLIPFONTEYN,
CAPE SOUTH COAST.**

Prepared for
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September 1995



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EXECUTIVE SUMMARY

An initial assessment of the property in December of 1993 identified six archaeological sites on the property. Small test excavations at that time concluded that two sites contained subsurface archaeological deposits that would be impacted by development. This report details the results of the follow up excavations of these sites.

1. INTRODUCTION

The Phase 1 archaeological assessment of the property identified six archaeological sites. The location of the property and the archaeological sites is shown on Figure 1. Test excavations at the time showed that two sites, namely KF 1 and KF 5, contained both surface and sub-surface occupation lenses and would need to be sampled prior to the development proceeding at those locations. In accordance with the recommendations contained within the report, the Archeology Contracts Office at the University of Cape Town was commissioned in January of 1995 by the developers¹ to carry out the sampling programme. The sampling was completed in February of 1995.

2. BACKGROUND: PREVIOUS RESEARCH IN THE SOUTHERN CAPE

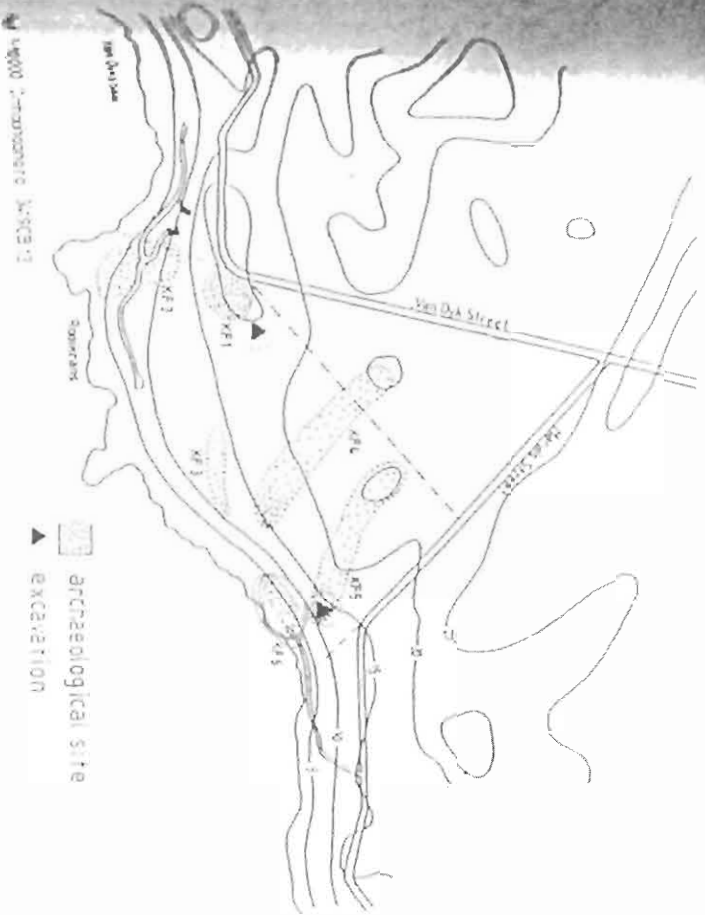
The first formal research into the prehistory of the southern Cape was initiated by Professor John Goodwin in 1938 with the publication of the results of excavations at Klip Kop Cave at Hermanus (Goodwin 1938). By 1946 he had looked more widely at the area and recorded the presence of many archaeological sites. More specifically, tidal fish traps (*viswywers*), common in the Agulhas region, and associated shell middens² were recognised and resulted in the publication of a paper about prehistoric fishing methods. He concluded that the same people were responsible for the presence both the fish traps and shell middens and stressed that excavation was necessary to test this hypothesis (Goodwin 1946).

It was not until the 1970's however that an intensive programme of research was instituted by archaeologists from the South African Museum. This provided further insight into the prehistory of the area. Excavations at Die Kelders Cave (Schweitzer 1979) and Byneskranskop 1 (Schweitzer and Wilson 1982) have showed that occupation of the area first took place many thousands of years ago. In the case of Die Kelders, more recent excavations have suggested the presence of human remains in Middle Stone Age deposits dating back over 40 000 years. While these excavations have concentrated on caves, as these offer the most potential for finding long, vertical sequences of occupation, other work has focussed on open shell middens around Pearly Beach and at Hawston (Avery 1974, 1976). More recently research has been carried out on middens further up the coast at Stilbay (Hart and Parkinson 1991, Henshilwood, in prep).

It is generally accepted by archaeologists that shortly after 2000 years ago, a new economic system was introduced into southern Africa. This involved the adoption of transhumant pastoralism (in the case of the southern Cape, this included herding of sheep and much later, cattle) over the traditional hunting and gathering lifestyle, although the latter was probably never completely discontinued. The presence of pottery, and the zones of domesticated animals are indications of the introduction of this economic system and are usually only found in the upper parts of excavated sequences or in some shell middens.

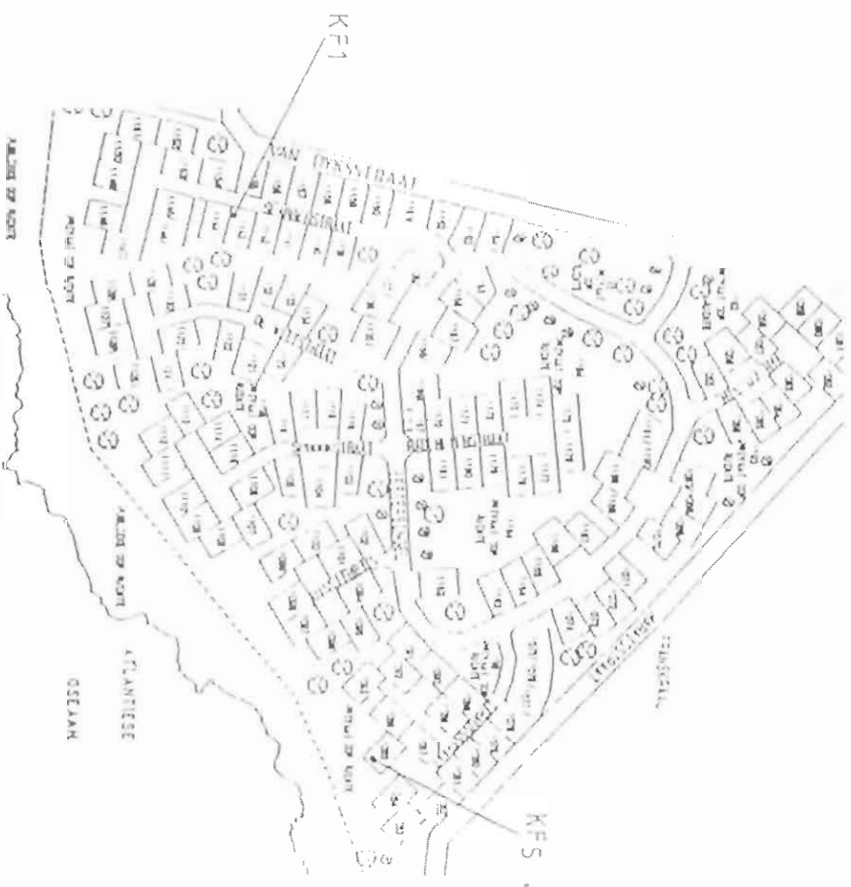
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2. Shell middens, or mounds, accumulated as a result of the exploitation of marine molluscs and other marine animals that occur in the intertidal zone. These marine foods formed a major part of the diet. The bones of terrestrial animals, particularly tortoises, are commonly found in these deposits as well.



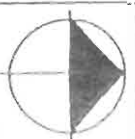
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archaeological site
excavation



1

Site location



EXCAVATIONS AT KLIPFONTEYN

3.1 METHOD

The excavations and subsequent analyses of the Klipfonteyn sites were conducted according to standard archaeological procedures. A meter square grid system imposed on the surface of the sites was used to record the horizontal provenance of artefacts and features. Excavations proceeded by the removal of natural stratigraphic units. Recognisable occupation layers, made up of variable concentrations of artefacts, shell and other food debris, were assigned names, removed separately, sieved through a 1.5mm mesh and bagged according to provenance. The volumes of deposit were recorded for each layer. Two buckets of sieved deposit was bulked for each square and sorted back in the laboratory at UCT. The remaining deposit was sorted on site and bone, stone, ostrich eggshell (OES) and ceramics were removed prior to dumping the shell. Charcoal has been collected from the layers to enable radiocarbon dating to take place). As no individual hearths were found, the charcoal consists of scattered fragments. Detailed section drawings were made to enable the process of site formation to be reconstructed.

The excavation of an archaeological site is followed by a lengthy period of laboratory analysis. In the case of the Klipfonteyn sites, material was sorted into a series of separate components, namely stone artefacts, ceramics, bone, ostrich egg shell and shellfish. The stone artefacts have been analysed in terms of raw material, tool or waste type. Ceramics have been examined for decoration. What few bones there are have been sorted into tortoise (which make up the majority of the faunal sample), fish and other species. The paucity of bone remains has precluded a detailed species and body part analysis. Shellfish sub-samples, from three squares, have been sorted by species and counted. All bulk samples have been sorted and the non-shell components removed. These have been included in the analysis results.

The accumulated observations of these components have been analysed for their spatial and chronological patterning as a basis for the reconstruction of the behaviour of pre-colonial people and the environment in which they lived. These observations, besides being the basis for our report, form an addition to the body of regional information available to archaeologists doing research in the future.

3.2 SITE KF 1: EXCAVATION RESULTS

A total of six square meters was excavated. The arrangement of the squares and section drawing is presented in Figure 2. Plate 1 shows the excavation after completion. The deeper excavation in the one corner marks the location of the removal of layer SL2. This did not contain much material and was not extended to other squares. Plate 2 shows a different view of the excavation showing the context of the site.

The surface shell was collected and the surface scraped to a depth of approximately 6-7 cm. This constituted the uppermost layer and became known as "surface scrape" (SS). This layer is probably an extension of the lower unit (BS) formed by surface deflation. The second layer has been termed "below surface" (BS) and was approximately 20 cm thick. Some of the shell in this lens may be the result of natural processes introducing it from the lower layer. The shell is not particularly dense as can be seen from the section photograph. The third layer, which has been termed "shell lens 1" (SL1) contains many more whole shells. At the base of (SL1) soil colour became lighter and a

3. No samples have been sent yet. We wished to complete the analysis first so that the best sample could be decided upon. In the absence of coherent hearth features it may be advisable to send shell for dating. This has not yet been decided. Dates will therefore not be included at this stage but a page has been prepared at the back of the document for the information to be filled in when it is available.

layer was begun called "shell lens 2" (SL2). Only one square was excavated as the unit was virtually sterile and shell in the layer is again probably present as a result of natural processes.

3.1.1 Shell/fish

Although bulk shell samples exist for each square, only those from three squares were analysed for species composition. No analysis of the Layers SS and SL2 has been undertaken however. The results of the analysis of the shell from layers BS and SL1, squares B2, B12 and B22 is presented in Table 1. No representation by weight of the various species has been undertaken. Species totals are based on the highest MNI (minimum number of individuals) after looking at various diagnostic features.

No major differences in species composition is noticed between the two layers although shell counts do vary. The most noticeable observation is the high proportion of whelks (*Buccurptia sp*) in both layers.

3.2.2 Stone

The analysis of the stone includes material sorted from the bulk samples in addition to material that was sorted from the deposit on site. The results of the analysis are presented in Table 2. The sample of 531 stone items is dominated by waste pieces which make up on average between 80% and 90% of each layer. The raw materials that are represented are dominated by quartzite and siltcrete. Quartzite is an abundant material derived from the many cobbles which are to be found strewn on the boulder beaches of the area. During most of the later stone age this material is represented on sites as large, sharp, informal flakes. The finer more carefully shaped tools are usually made on siltcrete which, notwithstanding the relative volume of material in the excavation, is not easily obtained. The fact that these two types of material are almost equally represented in the different layers suggests that siltcrete was actively sought out as a raw material. The formal tool category though small, shows that scrapers are the most common formal tool. Some miscellaneous retouch and backing is present too.

3.2.3 Bone

Very little bone was recovered. In fact the total mass of bone is in the region of only 20g. Tortoise and fish are among the identified species. The results of the analysis are presented in Table 3. The sample is too small to draw any conclusions about variation between stratigraphic units.

3.2.4 Ostrich eggshell (OES)

Ostrich eggshell fragments are distributed throughout the excavation units. A total of 77 fragments were recovered. None of these show any traces of decoration. Modified pieces consist entirely of beads. Both finished (16) and unfinished specimens (6) were recovered. The results of the analysis are presented in Table 4.

3.2.5 Pottery

4 potsherds were recovered. Although this sample is small it would appear that ceramics are found throughout the sequence. The material is consistent with indigenous pottery from many other coastal middens as described by Rudner (1968). The results of the analysis are presented in Table 5.

3.2.6 Conclusions

The placement of the excavation was some 20-30 meters distant from our original test hole and suggests that the site is indeed quite extensive as we had assumed based on

our observations made during the Phase 1 study. The density of material and stratification seems to have remained more or less the same across this distance. The site and its content in isolation are fairly unremarkable but forms part of a very small set of systematically excavated open sites along this part of the coast and provide at least some information about shellfish preferences. Although the stone artefact sample is relatively small, it appears that scrapers are the dominant formal tool type in an assemblage otherwise dominated by waste. While radiocarbon dates are not yet available, conclusions based on artefactual material would suggest that the deposits date to within the last 2000 years.

3.3 SITE KF5: EXCAVATION RESULTS

A total of six square meters was excavated. The arrangement of the squares and section drawing is presented in Figure 3. Plate 3 shows the excavation after completion. As can be seen the density of shell is not such that it shows very clearly in the sections. Rocks and cobbles that were present in one unit do however stand out. Plate 4 shows the excavation in relation to the sea.

The excavation of this site was basically straightforward except for the fact that after excavating two squares we came to the conclusion that a stratigraphic break between the layers BS1 (below surface 1) and BS2 (below surface 2) had to occur lower down in the deposit. As the BS1 material was rather dispersed and the BS2 material only slightly denser, the break was not immediately evident as it often is in sites where shell is densely packed. The change in the designation can be seen in the section drawing. Complications arose in the analysis hereafter. As will be seen from the analysis, the squares A1 and A2 have been analysed separately from A3, A13 and A12 and the results presented in separate tables.

Shell was found on the surface during the initial investigation of the site. This would appear to have been brought to the surface by natural processes such as mole burrowing. As such this surface material is viewed as a part of the initial sub-surface unit. We have not analysed the shell collected from here but rather concentrated on the two lower units. The surface was defined to be the loose soil which could be removed from slightly more compacted material below. The unit was approximately 6cm deep. Layer BS1 (below surface 1) was initially terminated arbitrarily at a depth of approximately 25cm below surface. At this point shell was dispersed through the unit with no particular concentration being noticed. After the layer change the dispersed shell continued and then concentration increased along with the number of rounded beach cobbles. No colour or texture change was noted. This process was repeated in one more square.

After excavating two squares we decided that the stratigraphic break between BS1 and BS2 should occur at the level where we noticed an increase in cobbles and whole shells particularly of the species *Haliotis* and *Turbo*. The nature of this material is clearly seen in Plate 5. The base of the archaeological deposits is marked by the appearance of a much lighter soil and decrease in the amounts of shell, although shell does continue into the lighter sand probably as a result of natural agents.

3.3.1 Shellfish

The analysis of the shell component is based on a sub-sample of the bulked material. In this case shell from three squares namely A2, A3 and A12 was analysed from units BS1 and BS2. The results of the analysis are presented in Tables 6(a) and 6(b). Table 6(a) lists the shell from square A2 and represents the initial stratigraphic demarcation. Table 6(b) lists the shell from squares A3 and A12 which represent the second stratigraphic demarcation which was used for the balance of the excavation.

The shell species are representative of the types that one would expect for this part of the coastline. High meat yielders such as *Turbo* and *Haliotis* are well represented with *Purcellia* also making up a large part of this category. In general there are no marked differences in the shell profiles from the two stratigraphic demarcations although percentage representation of the species do vary. Perhaps the most noticeable shift occurs with the numbers of whelks (*Bucciniferus* sp.). These are clearly more numerous in BS1 than BS2 but they also make up a significant proportion of BS2.

What does not show in these figures is the change in the number of whole specimens of *Halictis* and *Turbo* which are noticed in the lower part of the excavation in amongst the cobbles. For some reason shells are better preserved here and in fact led us to interpret this as some form of stratigraphic indicator.

3.3.2 Stone

The results of the stone analysis are presented in Table 7(a) and 7(b). 1354 pieces of stone were recovered in total. These come from both stratigraphic demarcations. The bulk of all the layers is made up of waste in all cases totalling over 80% and in general there is not much difference between the two stratigraphic sequences either in terms of artefact types or raw material composition. Scrapers are the dominant formal tool with miscellaneous retouch and backed elements also represented. The presence of segments in layer BS1 is worth noting though this is not unusual if one considers their presence in the site of Byneskranskop 1 and Die Kelders at the same time as we believe the Klipfonteyn sites were accumulating. The sites of Byneskranskop 1 and Die Kelders are discussed in more detail at a later stage.

3.3.3 Bone

The results of the analysis are presented in Table 8. A large proportion of the sample is made up of tortoise bone and carapace. Some fish bone is recognised too although it has not been analysed to species level. The rest of the bone comprises adagnostic mammal and bird.

3.3.4 Ostrich eggshell

Fragments of eggshell are distributed through all the stratigraphic units as can be seen in Table 9. Beads are quite numerous and are also distributed throughout. Both finished and unfinished specimens have been collected. No analysis of size has been undertaken.

3.3.5 Pottery

The results of the analysis are presented in Table 10. Ceramics are found in all units. No decoration was noted on any sherds.

3.3.6 Conclusions

This site has proved very similar to KF1 in terms of its content. The range of stone tools represented here is however slightly more extensive in that some segments are present in an assemblage otherwise dominated by scrapers. Waste products still make up the bulk of the stone assemblage. No radiocarbon dates are available yet but again ceramics are present throughout suggesting that the deposits date to within the last 2000 years.

4. DISCUSSION

Any discussion of archaeological material on this part of the coast would be incomplete without reference to the sites of Byneskranskop 1 (BNK1) and Die Kelders

DK1. The excavations by Graham Avery at Pearly Beach are also relevant. These large projects provide us with a good cross section of the types of settlement and resource exploitation strategies which were practised over many thousands of years. DK1 consists of a very large cave literally at waters' edge while BNK1 is a large cave in the limestone system some six kilometers inland. The Pearly Beach sites are all open station shell middens situated in the dune cordon within five hundred meters of the shoreline. All of these sites contain marine shells in their holocene deposits.

We are particularly interested, for the purposes of this project, in perhaps only the last two thousand years as they are manifested at these sites as the Klipfonteyn sites seem to fall within this period. While it is not within the scope of this exercise to carry out an exhaustive comparison of the food and artefactual remains, it is necessary to look at the overall conclusions which have been drawn regarding these sites to place Klipfonteyn in context.

DK1 (Schweitzer 1979): Late Stone Age midden deposits were found lying on top of Pleistocene deposits and suggested that the cave had been sealed for a period of several thousands of years, probably by shifting dunes, before being re-occupied around two thousand years ago. Some 85 m² of the Holocene deposits were excavated. Layer 12 which marks the base of the Holocene deposits has a radiocarbon date of 1960 ± 85 BP and it can therefore be assumed that layers above post-date this. Ceramics occur throughout with the greatest numbers of sherds in layers 12 and 2. Shellfish, although variable from layer to layer, shows a particular trend towards high numbers of *Choromytilus perna* (black/brown mussel). These together make up some 66% of the total sample. *Burnupena* sp (whelk) made up approximately 17% of the overall sample. *Oxystele* sp (periwinkle) and *Patella* sp (limpets) each made up approximately 6%, *Turbo* sp (alkreukel) approximately 2% and *Haliotis* (perlemoen) less than 1% of the overall sample. A total of 6709 pieces of stone was recovered which seems rather low considering the amount of deposit excavated but is not unusual for shell middens generally. The composition of the assemblage shows a trend towards informality with a large waste category. Formal tools consist of 6 scrapers and 29 segments. Raw materials are dominated largely by quartz and quartzite which together make up some 90%, and limestone and siltcrete approximately 7% and 2% respectively of the overall sample.

BNK1 (Schweitzer and Wilson 1982): A total of 11.5 m² has been excavated to varying depths and deposits span the period from 12700 to 255 BP. Layer 1 has 4 radiocarbon dates which range from 3220 ± 45 (bottom) to 255 ± 50 BP indicating that only a small part of the total deposit at this cave is of relevance to our discussion. This site varies from the other three localities by virtue of the fact that it lies some distance from the shoreline. This being the case we could possibly expect to see some variation in the shellfish component compared to the near coastal sites. Indeed it would be wrong to describe the deposit in this shelter as a midden but rather is a deposit containing shells. *Turbo sarnaticus* and *Oxystele* sp. make up a large part of the layer 1 shellfish sample. *Burnupena* sp., *Turbo cidaris*, *Patella* sp and *Choromytilus meridionalis* are the next most common. *Haliotis midae*, which one would have expected to have found in greater numbers is virtually absent throughout the sequence. This may be due to the fact that the meat was removed from the shell to avoid having to carry extra weight which makes it archaeologically invisible, but may also have to do with the fact that *Haliotis* usually occurs sub-tidally and was therefore more difficult to collect. An additional factor to consider is the variable meat mass for different species. For example, the meat of a single *Haliotis* is equivalent to several *Patella* and considerably more *Oxystele*'s.

The results of the stone analysis suggest that BNK1 is very much a scraper dominated assemblage throughout, although fluctuations do occur from layer to layer. For example layer 1 is actually dominated by adzes with scrapers running close second. Segments are also found in reasonable quantities starting at about layer 12 but are most noticed in layers 10-4 persisting through to layer 1. The waste component is

characteristically high. Quartz is overall the most utilised raw material of the whole assemblage followed by quartzite, silcrete and limestone. Silcrete is however the most commonly used raw material within the formal tool category.

PEARLY BEACH (Avery 1976): Six separate sites were investigated by Avery. These sites fit easily into the category of sites which are easily identified as true shell middens, that is where deposit consists mainly of shell with some soil mixed in. Sampling of the middens was conservative and while may be adequate for documenting shell species is not suitable for characterising stone assemblages. A larger surface collection of stone was made at PB4 and covered an area of 10x10m² providing some information of stone content of at least this location. The assemblage consists of a high waste category totalling some 96%, followed by 2% utilised and 1% formal. No scrapers or segments were observed and borers and MRP's are the only artefacts within the formal category. Raw material is dominated by quartzite at 76%. Limestone is higher than at other locations, 19%, while quartz and silcrete make up 4% and 0.18% respectively. The shellfish component of different sites varies. The shellfish MNIs show that in the case of PB2 and PB5, the percentages of *Haliotis* is high. In other sites such as PB1, PB4 and PB6 the most common shells consist of a combination of *Turbo sarnaticus*, *Oxysteles* sp. and *Burnupena* sp. *Choromytilus* and *Perna* are virtually absent from the samples except in the case of PB6 where *Choromytilus* makes up 14% of the sample. *Patella* sp. make up between 8% and 20% of the various samples. Avery has worked out the meat mass for the various species and has shown that based on those observations, all of his sites are either *Turbo* or *Haliotis* dominated.

KLIPFONTEYN: Both of the excavated sites were recognised by the presence of shell on the surface. The locality was heavily vegetated prior to development and has probably always been vegetated with sites forming in naturally or deliberately cleared patches on top of high points. In this respect the Klipfonteyn sites differ from all the sites discussed above although they are closest in setting to the Pearly beach sites. The shellfish samples have showed trends similar to those at Pearly Beach and generally MNIs show that all units are dominated by a combination of *Turbo* sp., *Oxysteles* sp. and *Burnupena* sp. *Haliotis* makes up a small percentage of the samples usually less than 3%. *Patella* sp. make up approximately 10% to 20%. The stone assemblages from the various units show that the waste category makes up the greatest part. The formal component shows that scrapers are the dominant form and the presence of segments is also noted. The presence of ceramics throughout the sequence probably means that the sites are less than 2000 years old. The formal tool types are consistent therefore with the types seen at Byneskranskop for this period except that no adzes have been recognised.

5. CONCLUSIONS

It is clear that the excavated sites at Klipfonteyn have factors in common with other excavated sites in the area. It is impossible to say for various reasons which it is more like. To understand the early settlement history of this and other parts of the coast it is necessary to have good samples of the contents of not only caves, but also the many types of open sites which can be found in abundance and which have often been overlooked in the search for deep stratified assemblages. In the future one of our goals should be to explore the links between cave sites and open sites in particular addressing the way in which some coastal shell middens may have formed as intermediate shell processing stations *en route* to caves further inland, and which may have functioned as longer term occupation sites.

The artefactual content of open shell middens is often not very dense. Samples need to be of sufficient size to characterise the stone content in particular but also to characterise other categories of material.

Thank it is clear that with the increased development of our coastline which is taking place we are increasingly losing the ability to test hypotheses about coastal settlement. It is necessary that projects such as this are vigorously pursued where development is taking place so that we do not entirely lose our important archaeological heritage.

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