Field and Technical Report

NEW EXCAVATIONS AT KLEIN KLIPHUIS ROCK SHELTER, CEDERBERG MOUNTAINS, WESTERN CAPE, SOUTH AFRICA: THE LATE HOLOCENE DEPOSITS

JAYSON ORTON[1] & ALEX MACKAY[2]

[1]*Archaeology Contracts Office, Department of Archaeology, University of Cape Town, Private Bag, Rondebosch, 7701, South Africa*
E-mail: jayson.orton@.uct.ac.za
[2]*School of Archaeology and Anthropology, Australian National University, Acton, 0200, Australia*
E-mail: alexander.mackay@anu.edu.au

(Received January 2008. Revised February 2008)

INTRODUCTION

Klein Kliphuis (KKH), a rock shelter located in the northern Cederberg Mountains of the Western Cape province, South Africa (Fig. 1), was originally excavated in 1984 with emphasis on the late Holocene Later Stone Age (LSA) layer in the top 200 mm of the deposit (Van Rijssen 1992). At that time only one square was excavated to bedrock, which was reached at about 890 mm. The approximately 700 mm of deposit underlying the Holocene LSA were excavated in four layers. Recent examination of this material showed a complex sequence of Middle Stone Age (MSA) artefact-making traditions (Mackay 2006). The need for more detailed excavation thus became apparent.

The site is a fairly large rock shelter measuring some 18 m wide at the mouth and 9 m between the drip-line and the rear wall. It is situated in a cliff about 30 m above the Kliphuis River. Although deposits cover virtually the entire floor, several boulders in the mouth of the shelter have caused the deposits to build up to their maximum depth in the central area and it is here, against the back wall, that the excavation is sited. The edge of the rock platform lies just beyond the deposit.

Initially we planned to excavate four 0.25 m^2 quadrants of the lower deposits in squares from which Van Rijssen had already removed the Holocene material. Unfortunately, due to the presence of several drips within the cave, an area of subsurface moisture was found in part of the deposit and it became necessary to expand the excavation westwards into previously unexcavated areas, with 0.5 m^2 being dug from the surface in square H1. The two quadrants excavated are H1-B and H1-C (Fig. 2). While the MSA deposits will be described elsewhere, here we present the late Holocene LSA deposit and the rock art that adorns the walls of the shelter.

ROCK ART

A small amount of very faded rock art is present in four panels (Fig. 2). The heights given are above the current surface of the deposit. The first panel, on the left side when facing the shelter, contains just one image: a poorly preserved right hand print at 1.75 m. On the right side, the art can be divided into three panels. The furthest left of these (panel 2) has a single, red, right-facing, headless human figure at 1.40 m. Panel 4, located on the wall outside the cave merely has an indeterminate red image at 1.60 m. Between these panels, and located

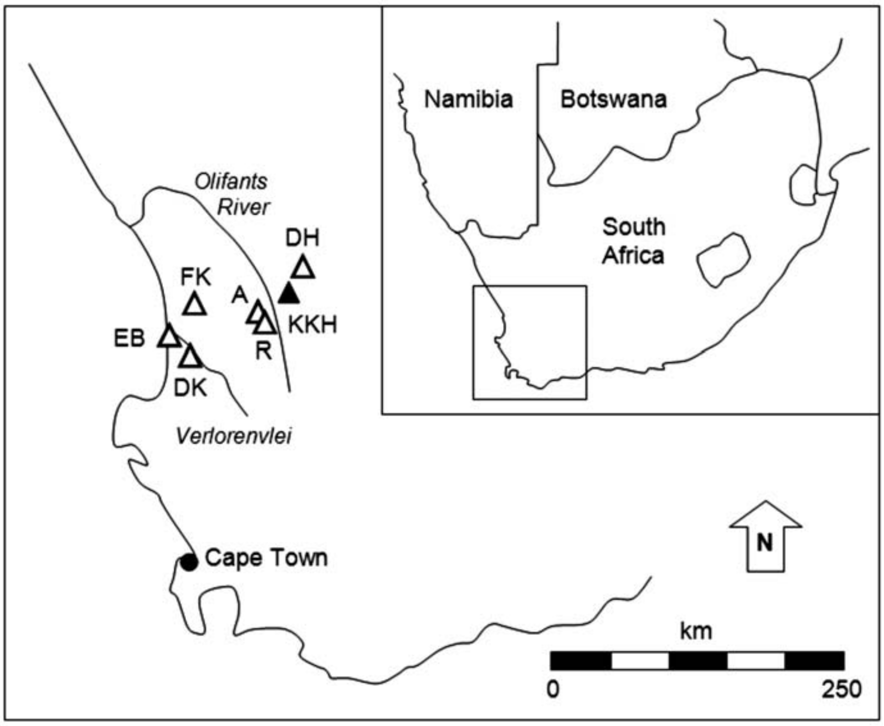

FIG. 1. *The location of Klein Kliphuis and other sites discussed in the text. A = Andriesgrond; DH = De Hangen; DK = Diep Kloof; EB = Elands Bay Cave; FK = Faraoskop; KKH = Klein Kliphuis; R = Renbaan.*

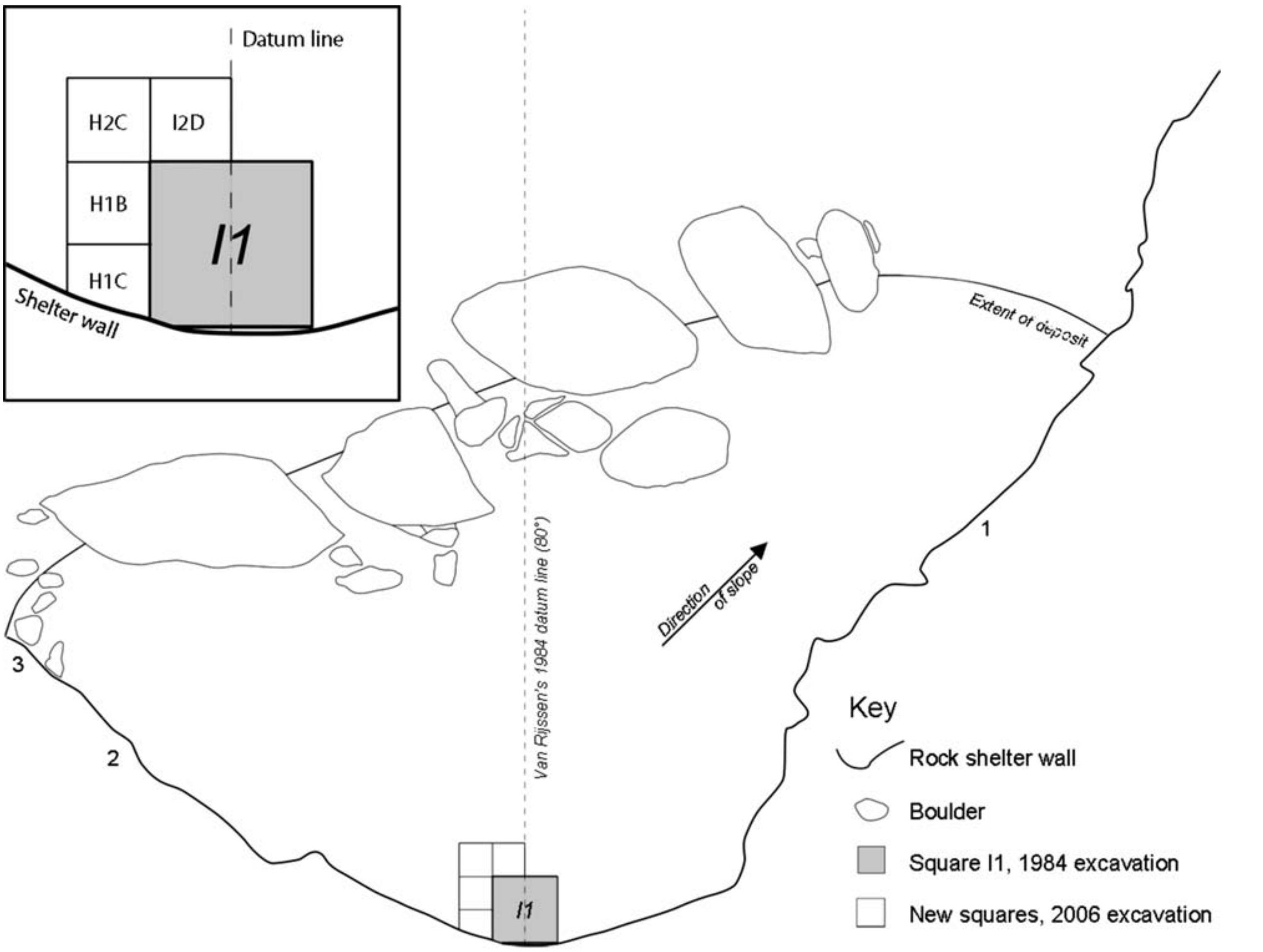

FIG. 2. *Plan of KKH and the excavation. Rock art panels 1 to 3 are indicated by the numbers.*

just inside the edge of the shelter, is panel 3 with many rather faded images. They include a horizontal row of at least eight vertically oriented pairs of black finger dots, a red kaross-clad figure possibly holding a walking stick, a red hookhead with one arm bent upwards at the elbow, and a small red figure bent forwards at the waist and possibly with arms outstretched. At least two other possible human figures and several red lines are also present. All these images are between 1.30 and 1.95 m above the floor. None of the KKH paintings are unique and far better preserved examples are present at other sites in the area.

THE EXCAVATIONS AND DATING

Van Rijssen's (1992) work suggested a hiatus in occupation at KKH. Late Holocene deposits were dated to 1990 ± 50 BP (Pta-4671) and 1230 ± 50 BP (Pta-4672). These calibrate to about 70 AD and 870 AD, respectively. While the former date came from a sample at the base of the late Holocene deposits (–180 mm), the latter date came from the Bedding layer (–70 mm). Although we have no dates for the uppermost material, the glass trade beads found by Van Rijssen (1992) support a further very late occupation for the shelter.

Our excavation followed Van Rijssen's stratigraphic layers but with new subdivisions. We sieved the deposit through both 3 mm and 1.5 mm mesh and, in keeping with Van Rijssen (1992), the data reported here includes the 1.5 mm residues. All sorting was carried out off site to ensure maximum recovery of finds. We recognized Surface and layer A. Below this we recognized three separate lenses of grass bedding, but these probably reflect one event during which individual wads of grass were placed on the ground. Thus, our three bedding lenses form a single bedding layer comparable to the 1984 excavation. Van Rijssen's section (1992, fig. 4) suggests that the grass wads were originally placed in a 1.5 m wide hollow excavated at the rear of the shelter. Beneath the bedding we removed layer C, which we divided into sub-layers C1 and C2. The deeper of these was a lens covering approximately two-thirds of square H1-B and extending into I1 and H2. It appeared to be slightly mounded and contained a higher density of finds than the surrounding deposits. For analytical purposes it has been incorporated into layer C. Probably due to our small excavation, we were unable to correlate any of our layers with Van Rijssen's 'Unit B'.

We identified a narrow zone of very soft, powdery material along the back wall, probably the infill of a small hole dug by an animal. This interpretation is supported by the lithic raw material frequencies in this soft matrix, which demonstrate a relationship with the surface material. It is referred to as 'Disturbance'. During excavation it became apparent that Pleistocene LSA deposits were also present immediately below the late Holocene levels. These potentially reflect late Pleistocene microlithic assemblages and will be presented elsewhere (Mackay, in prep.).

Beneath C2 there appears to have been a hollow, some 60 cm from the rear wall of the cave. This was only evident in section, marked by a lower density of roof spalls. There is no way to tell whether this hollow was man-made or whether an animal might have dug it. Since it was not excavated as a separate layer, its material content is not reported here. An AMS date of 922 ± 36 BP (Wk-20240; calibrates to about AD 1180) on a single charcoal fragment from this hollow and beneath the intact bedding in H1-B confirms it as a disturbed area. In sum, the dates suggest that all the late Holocene material at Klein Kliphuis comes from the last 2000 years.

FINDS

Although only about 0.075 m^3 of deposit was excavated, there is sufficient material to warrant a full description. Despite our excavation being next to Van Rijssen's, the finds differ in some respects. Most of the cultural material comprises lithics. Other finds were sporadic.

LITHICS

An assemblage of 1322 flaked stone artefacts was recovered from undisturbed contexts and another 138 came from Disturbance. The assemblage is strongly dominated by quartz with silcrete being secondary (Fig. 3). Crypto-crystalline silica (CCS), quartzite, hornfels, sandstone, shale and other unidentifiable rocks are rare. These raw materials are present in the surrounding landscape (Roberts 2003; Visser & Theron 1973) and can be considered local (MacKay 2006). Quartz decreases in frequency towards the surface and silcrete increases; the others remain relatively constant (Fig. 3). It is curious that except in the oldest layer, these trends are reversed in Van Rijssen's material from square I1 (Mackay 2006: table 2).

The amount of variation in appearance within each raw material class suggests that people were fairly non-selective. Almost all the quartz is white vein quartz, although occasional fragments of crystal were encountered throughout. The silcrete contains fine-grained red and slightly coarser-grained grey/green/cream-coloured examples. Some pieces display cortex but none is pebble cortex. While some CCS was easy to identify, there were many pieces that were merely very fine-grained homogeneous rocks that could not be classified as silcrete. Quartzite is similarly variable with fine- and coarser-grained types present. Black hornfels is rare and one piece has pebble cortex.

The typological counts are presented in Table 1. Cores are rather rare in the assemblage with all but one being bipolar. These are generally atypical with few being the usual pillow-shaped. Bladelets are quite common comprising 11.8 % of all flakes. Just four artefacts showed visible evidence of use damage. Retouched artefacts were substantially more common than was the case in Van Rijssen's (1992) analysis of the I1 material. Many were small and only identified with careful inspection, suggesting that many may have gone unidentified from the earlier excavation. Adzes are the most common type. None were made on MSA flakes and only one can be described as 'slug-like' (Fig. 4: 3). The other three are quite atypical and all are small (Fig. 4: 1, 2 & 4). Three sidescrapers are the only typical, standardized tools present and these too are very small (Fig. 4: 7–9). The two miscellaneous retouched pieces on silcrete from Disturbance are both somewhat adze-like in appearance (e.g. Fig. 4: 6).

Artefacts recovered during the clearing out of Van Rijssen's excavation include two quartz segments each approximately 12 mm long. These are typical of mid-Holocene assemblages but could also have come from the late Pleistocene LSA. Another segment (silcrete in this case) measuring 14.9 mm was recovered one layer above a date of 18 664 ± 103 BP (Wk-20241), raising the possibility that the quartz segments were originally deposited in a similarly old context.

Many small ochre fragments were found throughout the deposit with most being unworked (Table 2). A single 3.1 g, 17 mm long piece from the lowermost excavation unit within the Bedding layer displayed grinding marks over its entire facetted surface (Fig. 5). Other lithic items were scarce: a small quartz crystal came from Surface, a mica fragment from the Bedding layer and a calcite crystal from layer C1.

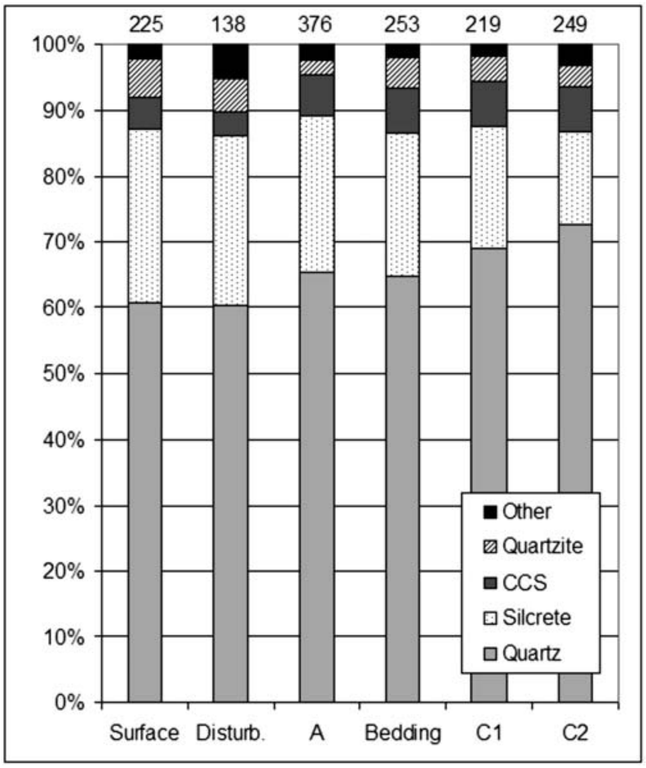

FIG. 3. *Lithic raw material frequency through the late Holocene sequence. 'Other' includes hornfels. Total artefact counts in each layer are indicated above the columns.*

POTTERY

Just eight potsherds were recovered with all being in the lower three of our layers (Table 3). One, in the Bedding layer, was large (16.0 g) while the rest were all tiny fragments. The pottery has a fine quartz temper in a dark matrix and red ochre is present on the external surfaces of some sherds only. No diagnostic pieces were present.

OSTRICH EGGSHELL AND BEADS

Ostrich eggshell (OES) was also rare with fragments found only in the middle three layers (Table 4). All were very small. Eight beads were found in the excavation with only one being a whole finished bead (Layer C1), while a further four whole beads were recovered during the clearing out of Van Rijssen's excavation. The finished beads (stage VII) are all very well worn as indicated by their thicknesses (Table 5). For comparison, the seven measurable unmodified OES fragments have a mean thickness of 1.85 ± 0.15 mm and range of 1.65 mm to 2.07 mm. A range of bead sizes is present with both small and large beads throughout. The two broken unfinished beads are drilled but not smoothed (Stage IIIb).

WOOD, CHARCOAL AND OTHER BOTANICAL MATERIAL

One wooden artefact and a number of wood shavings were recovered. Owing to the difficulties of recovering all wood shavings from the bedding layer we have not quantified them. The shavings occurred in all but the surface layer but were most numerous in the bedding layer. The wooden artefact comes from the bedding layer and is probably a fire stick (Fig. 5). It is 100 mm long and a maximum of 6 mm wide. It is

TABLE 1. *Lithic typological data for the assemblage (e-d = edge-damaged; frag. = fragment; MBP = miscellaneous backed piece; MRP = miscellaneous retouched piece).*

Raw material	Layer	Bipolar core	Irregular core	Flake	e-d Flake	Chunk	Chip	e-d Chip	Bladelet	Sidescraper	Scraper frag.	MBP	Adze	MRP
Quartz	Surface	2		6		3	125			1				
	Disturb.			7		3	71		1		1			
	A	4		9		9	217		4	1	2			
	Bedding	2		8	1	6	146		1					
	C1	4		8		3	134		1	1				
	C2	2		10		6	158	1	3					1
Silcrete	Surface			14		2	41		2					
	Disturb.			4		2	26		1				1	2
	A			21	2	11	52		2			1		
	Bedding			7		2	45						1	
	C1			11		6	21		2				1	
	C2			9		1	24		1					
CCS	Surface			4			6		1					
	Disturb.						4	1						
	A	1		2		4	17							
	Bedding	1		1		2	12						1	
	C1			2		2	9		2					
	C2			2		1	13		1					
Quartzite	Surface			10		1	2							
	Disturb.			3		3	1							
	A			4		1	3							
	Bedding			8		1	2		1					
	C1		1	6		1								
	C2			6		2								
Hornfels	Surface			1		1	1							
	Disturb.				1		5							
	A					1	4							1
	Bedding						2							
	C1			2			1							
	C2			2		1	4							
Other	Surface			2										
	Disturb.					1								
	A			1		1	1							
	Bedding						3							
	C1			1										
	C2			1										

worked over its entire surface and tapers at both ends. The less pointed end is burnt and slightly damaged. Small fragments of charcoal were found throughout and no attempt was made to quantify them.

The bedding layer consists of three lenses and was thicker in H1-B, farthest from the wall. The lower lenses were less well preserved. The content is mainly grass [identified in Van Rijssen (1992) as *Sporobolis virginicus*], although we also found many small sticks, leaves and seeds of various other plants, predominantly in the lowermost of our three bedding units.

MARINE SHELL

A single *Nassarius krausianus* shell was found in the uppermost unit of the bedding layer, while a fragment of a small *Conus* sp. shell was found lower down in the bedding (Table 6). Several fragments of black mussel, *Choromytilus meridionalis,* and other unidentifiable shell fragments were also found throughout all but the uppermost layer. None of these appear to be limpet. Van Rijssen (1992) only identified *Choromytilus.*

FAUNAL REMAINS

Although very well preserved, animal bones were either very small or highly fragmented resulting in the recovery of limited data. In total, 635 bones and fragments were examined by Genevieve Dewar with 431 being completely unidentifiable. The others comprised small animals but were generally too few in number to provide meaningful comparisons. The species and size classes identified are given in Table 7. A large collection of pale, cream-coloured hairs, some with dark brown roots, was found in Layer A. None were present in subsequent layers. It is hard to tell what they are but they may be related to the small carnivores that were present and thought by Van Rijssen (1992)

TABLE 2. *Ochre (from 3 mm sieve only).*

	n	Weight (g)
Surface	5	0.9
Disturb.	3	1.3
A	18	5.2
Bedding	18	14.4
C1	9	5.5
C2	13	3.3

TABLE 3. *Pottery.*

Layer	*n*	Weight (g)
Surface		
A		
Bedding	3	17.1
C1	3	2.5
C2	2	1.0

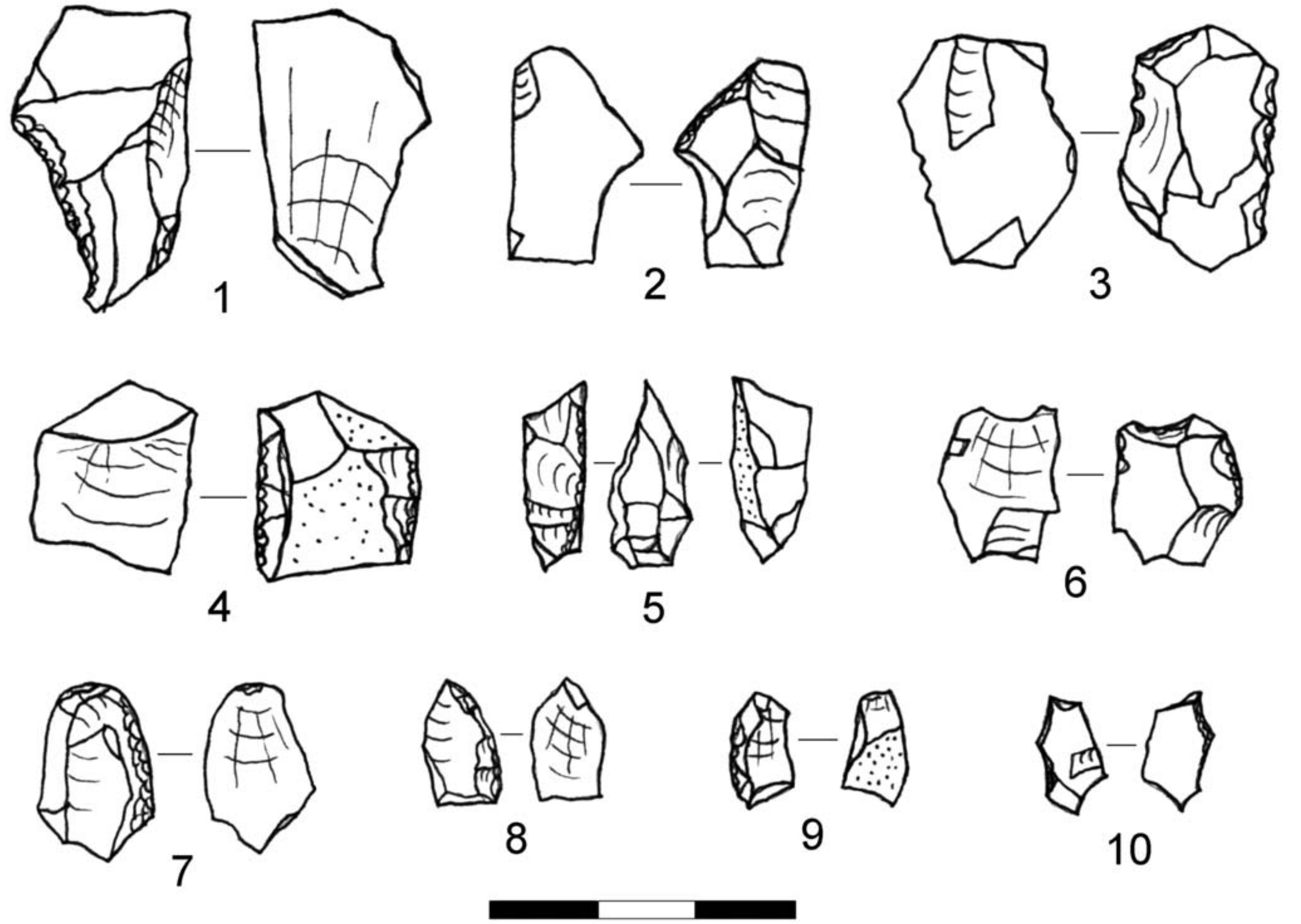

FIG. 4. *Retouched artefacts from Klein Kliphuis.* (**1**) *Silcrete adze (Bedding);* (**2**) *Silcrete adze (layer C1);* (**3**) *CCS adze (Bedding);* (**4**) *Silcrete adze (Disturbance);* (**5**) *Hornfels MRP (layer A);* (**6**): *Silcrete MRP (adze-like) (Disturbance);* (**7**) *Quartz sidescraper (layer A);* (**8**): *Quartz sidescraper (layer C1);* (**9**): *Quartz sidescraper (Surface);* (**10**) *Silcrete MBP (layer A). Scale in 1 cm intervals, stippling denotes cortex.*

and Avery (1992) to have been caught for their pelts. The vast majority of the bones of these animals, however, were identified from Layer B, below the bedding (Avery 1992: table 1). Several animal droppings were found in layer A and they are of the small/medium bovid size (G. Avery, pers. comm. 2007). This would suggest duiker, klipspringer or sheep/goat.

DISCUSSION

Klein Kliphuis was originally dug as part of a program to explore recent LSA sites in the region (Van Rijssen 1992). It is just one of many Western Cape shelters, such as Andriesgrond, De Hangen, Diepkloof and Renbaan, found to contain what have come to be called 'bedding and ash' deposits (e.g. Parkington & Poggenpoel 1971, 1987; Parkington 1976; Kaplan 1987; Anderson 1991; Yates *et al.* 1994). The KKH deposits are typical in that bedding material was brought into the cave and spread around the rear wall. A hearth would have probably been situated centrally but none was intersected by either our or Van Rijssen's excavation.

The presence of rock art up to 1.95 m above the current surface of the deposit may suggest that it was once higher. This could explain the lack of second millennium AD dates despite the presence of glass trade beads in Van Rijssen's (1992) excavation. Given the presence of drips in the shelter, some loss of fine material and attendant lagging of deposits is to be expected. Other material is likely to have been removed by the first millennium occupants of the shelter when they constructed their bedding hollows. This latter deposit might have been

FIG. 5. *The wooden fire stick and ground ochre from the Bedding layer. Scale in 5 mm intervals,*

TABLE 4. *OES. Bead manufacturing stages after Orton (2008).*

Layer	Bead stages			Fragments	
	IIIb	VIIa	VIIb	*n*	Weight (g)
Surface			2		
A				4	1.4 g
Bedding	1		1	3	2.3 g
C1	1	1	2	2	1.0 g
C2					

TABLE 5. *OES bead measurements. Note that for Stage VIIb beads only the thickness and an estimated outside diameter are given. One of the surface beads was split laterally precluding thickness measurement.*

Layer	Outside	Aperture	Thickness
Surface	~4.0	–	–
Surface	~7.5	–	1.16
Bedding	~4.0	–	1.32
C1	5.32	2.03	1.40
C1	~4.3	–	1.49
C1	~7.0	–	1.72
Cleanings	4.28	1.64	1.46
Cleanings	6.41	2.62	1.65
Cleanings	8.15	3.67	1.21
Cleanings	11.4	4.07	1.46

TABLE 6. *Marine shell fragments.*

Layer	*Choromytilus meridionalis*	*Conus* sp.	*Nassarius kraussianus*	Unidentified
Surface				
A	4			1
Bedding	3	1	1	1
C1	4			1
C2	3			

moved towards the front of the shelter or even thrown out onto the talus slope. Given the limited extent of both our and Van Rijssen's excavations it is impossible to know whether there might be older Holocene material present in other parts of the site. The two quartz segments hint at the possibility of a mid-Holocene occupation, though they may alternatively relate to the terminal Pleistocene.

Our larger collection of retouched artefacts allows more meaningful discussion of the lithics than Van Rijssen (1992) was able to provide. Scrapers, adzes and adze-like tools dominate the lithics. This is to be expected of late sites in the mountains and continues the pattern demonstrated by Mazel (1978) and Parkington (1980) in other similarly aged assemblages elsewhere. Adzes are strongly linked with woodworking as demonstrated by the many wood shavings present both at KKH and elsewhere (e.g. Mazel & Parkington 1981), and also by the fact that in the Sandveld the rock shelter sites have far greater proportions of adzes than those in open settings (Manhire *et al.* 1984). Both the rocky Sandveld hills and the Cederberg Mountains would have had far more trees prior to their destruction in historic times. In contrast, Sandveld open sites are dominated by scrapers and backed artefacts (Manhire *et al.* 1984; Manhire 1987; Mazel 1978; Mazel & Parkington 1981).

The small OES bead collection offers no further insights of a temporal nature than were possible from the Van Rijssen (1992) sample, although some other comments are possible. The very well worn Stage VII beads indicate that they had been in use for a long period and were not lost during manufacture. The presence of so few unfinished beads and only two of the very tiny OES fragments that so strongly characterize bead manufacturing sites (Orton, in press) suggests the beads were made elsewhere. Both unfinished beads are broken and, since these would not have been retained for later completion in that state, it is probable that they were broken through trampling after having been lost on site. A bigger sample would help and we cannot rule out the possibility that manufacture took place in another part of the cave.

The marine shell indicates long-distance movement and/or exchange. *N. kraussianus* occurs in estuaries and salt marshes all around the South African coast (Kilburn & Rippey 1982; Richards 1987) and some were used during the MSA and LSA as beads, particularly on the south coast (e.g. D'Errico *et al.* 2005; Manhire 1993; Orton & Halkett 2007) and even at Boomplaas some 80 km inland (Deacon *et al.* 1978). The KKH specimen is slightly broken but the long distance to the coast suggests curation and it may originally have been a bead. The species is present in both the Langebaan Lagoon and Berg River estuary and, although unlikely to be present now, it would have occurred in Verlorenvlei during times when the estuary was fully functional (G. Branch, pers. comm. 2007). Although views differ on exactly when Verlorenvlei was open to the sea, this would have been during the mid- to late mid-Holocene (Meadows *et al.* 1996; Miller 1990; Miller *et al.* 1993), well before the time when the *Nassarius* shell was brought to KKH. This time frame is supported by the distribution of these shells in the Elands Bay Cave deposits where they are rare or absent from the late Holocene deposits (J. Parkington, pers. comm. 2007). The Berg River estuary, 102 km from KKH as the crow flies, is thus the more likely origin for the specimen. The dating at Faraoskop makes it unclear whether the *Nassarius* shell from that site relates to mid- or late-Holocene layers (Manhire 1993).

Conus sp. shells do occasionally occur on sites near Elands Bay (J. Parkington, pers. comm. 2007) and are fairly common on Namaqualand coastal sites, but always in very small numbers (e.g. Orton & Halkett 2005, 2006). Only one artificially perforated example, with a hole filed into the narrow end, is known from Elands Bay (Parkington 2006: fig. 39), although some Namaqualand examples were strung through the naturally broken ends of the shells (e.g. Dewar 2007; Orton 2007b). *Conus*

TABLE 7. *Faunal material. Owing to the very small number of identifiable specimens, we have only indicated presence.*

Unit	Tortoise	Snake	Rodent	Steenbok	Small bovid	Wild cat	Small carnivore	Small mammal	Small–medium mammal	Bird	Hair	Bird eggshell	Total bone weight (g)
Surface	X					X		X					10.7
A	X				X	X	X				X		13.9
Bedding	X	X	X	X				X					21.1
C1	X	X	X				X	X	X			X	16.8
C2	X	X			X		X		X	X			21.0

pendants intentionally perforated as described above do occur more frequently on the south coast (e.g. Orton & Halkett 2007; Inskeep 1987; Schweitzer 1979; Schweitzer & Wilson 1982). Only a fragment is preserved at KKH and, given the evidence above, it is not possible to reliably speculate on its original form or function but it must certainly have been curated.

Other marine shells are commonly encountered in tiny quantities on sites up to 180 km from the coast with limpets and black and white mussels all occurring (e.g. Orton 2007a; Orton & Halkett 2001; Webley *et al.* 1993; Wendt 1972). These shells might have been trade items since it is unlikely that such small quantities of shellfish would have been transported as food. Only tiny black mussel fragments are present at KKH. Manhire (1993) noted use-wear on black mussel shells from Faraoskop showing that these shells did have some functional value.

Only limited interpretation of the fauna is possible. Many of the tortoise bones were burnt, suggesting that they might have been cooked whole and, given that no hearth was intersected, the burning of other bones, including the snake, also supports their consumption by humans (G. Dewar, pers. comm. 2007). Although no micromammal postcrania were identified in our small sample, Avery (1992) did find some in the 1992 sample. In total though, cranial remains are more common suggesting the micromammals to have been eaten by people rather than owls (Dewar & Jerardino 2007). This is supported by the lack of suitable roosting ledges within the cave. It is unknown what animal the hairs in layer A belong to but they may reflect the processing of small mammal pelts as suggested by Avery (1992).

CONCLUSION

The re-excavation of KKH has enabled an improved understanding of the artefacts contained in the late Holocene layers of the shelter. Specifically, the retouched artefacts are shown to reflect the same pattern as other sites in the Cederberg Mountains. The deposits reveal a typical late Holocene bedding and ash deposit with adzes and wood shavings indicating the manufacture of wooden implements. The site was probably occupied for short periods by hunter-gatherer groups and, following Van Rijssen (1992) and Avery (1992), this is assumed to have been predominantly during the summer months. The people had contact with the coast either through exchange relations or by incorporating visits to the coast in their seasonal movements. This latter idea has long been suggested by Parkington (1976) who found much evidence to show that people occupied inland, mountain sites in summer and coastal sites in winter. Isotopic work has shown that this may not have always been the case but was perhaps more likely within the last 2000 years (Sealy & Van der Merwe 1988), the period covered by the finds reported here.

ACKNOWLEDGEMENTS

Thanks are due to those who participated in the excavations and to the editor and a reviewer who provided helpful comments. The Kent Bequest provided funding for the excavation.

REFERENCES

Anderson, G.C. 1991. Andriesgrond revisited: material culture, ideologies and social change. Unpublished BA Honours project. Cape Town: University of Cape Town.

Avery, G. 1992. Appendix 1: Faunal remains from Klein Kliphuis Shelter, Clanwilliam District, South Africa. *South African Archaeological Bulletin* 47: 40–43.

Deacon, H.J., Deacon, J., Brooker, M. & Wilson, M. 1978. The evidence for herding at Boomplaas Cave in the southern Cape. *South African Archaeological Bulletin* 33: 39–65.

D'Errico, F., Henshilwood, C., Van Haeren, M. & Van Niekerk, K. 2005. *Nassarius kraussianus* shell beads from Blombos Cave: evidence for symbolic behaviour in the Middle Stone Age. *Journal of Human Evolution* 48: 3–24.

Dewar, G. 2007. The archaeology of the coastal desert of Namaqualand: a regional synthesis. Unpublished PhD thesis. Cape Town: University of Cape Town.

Dewar, G. & Jerardino, A. 2007. Micromammals: when humans are the hunters. *Journal of Taphonomy* 5: 1–14.

Inskeep, R. 1987. *Nelson Bay Cave, Cape Province, South Africa: the Holocene Levels.* Oxford: British Archaeological Reports International Series 357(i).

Kaplan, J. 1987. Settlement and subsistence at Renbaan Cave. In: Parkington, J.E. & Hall, M. (eds) *Papers in the Prehistory of the Western Cape, South Africa*: 350–372. Oxford: British Archaeological Reports International Series 332(ii).

Kilburn, R. & Rippey, E. 1982. *Seashells of Southern Africa.* Johannesburg: Macmillan.

Mackay, A. 2006. A characterisation of the MSA stone artefact assemblage from the 1984 excavations at Klein Kliphuis, Western Cape. *South African Archaeological Bulletin* 61: 181–188.

Manhire, A. 1987. *Later Stone Age Settlement Patterns in the Sandveld of the South-western Cape Province, South Africa.* Oxford: British Archaeological Reports International Series 351.

Manhire, A. 1993. A report on the excavations at Faraoskop Rock Shelter in the Graafwater district of the south-western Cape. *Southern African Field Archaeology* 2: 3–23.

Manhire, A.H., Parkington, J.E. & Robey, T.S. 1984. Stone tools and Sandveld settlement. In: Hall, M.J., Avery, G., Avery, D.M., Wilson, M.L. & Humphreys, A.J.B. (eds) *Frontiers: Southern African Archaeology Today*: 111–120. Oxford: British Archaeological Reports International Series 207.

Mazel, A. 1978. Stories IN Stones: aspects of artefact distribution in the Clanwilliam District, south-western Cape. Unpublished BA Honours project. Cape Town: University of Cape Town.

Mazel, A. & Parkington, J. 1981. Stone tools and resources: a case study from southern Africa. *World Archaeology* 13: 16–30.

Meadows, M.E., Baxter, A.J. & Parkington, J. 1996. Late Holocene environments at Verlorenvlei, Western Cape Province, South Africa. *Quaternary International* 33: 81–95.

Miller, D.E. 1990. A southern African late Quaternary sea-level curve. *South African Journal of Science* 86: 456–458.

Miller, D.E., Yates, R.J., Parkington, J.E. & Vogel, J.C. 1993. Radiocarbon-dated evidence relating to a mid-Holocene high sea-level on the south-western Cape coast, South Africa. *South African Journal of Science* 89: 35–44.

Orton, J. 2007a. Excavations at four sites near Jakkalsberg in the Richtersveld. *The Digging Stick* 24(1): 9–13.

Orton, J. 2007b. Mitigation of archaeological sites within the Buffels Marine, Buffels Inland and Koingnaas Complexes, Namaqualand, August to September 2007. Unpublished report prepared for Yzerfontein Seaside Estates. Archaeology Contracts Office, University of Cape Town.

Orton, J. 2008. Later Stone Age ostrich eggshell bead manufacture in the Northern Cape, South Africa. *Journal of Archaeological Science* 35: 1765–1775. doi: 10.1016/j.jas.2007.11.014.

Orton, J.D.J. & Halkett, D.J. 2001. Mid-Holocene denticulates in the Richtersveld. *Southern African Field Archaeology* 10: 19–22.

Orton, J. & Halkett, D. 2005. A report on the Archaeological Mitigation Program at De Beers Namaqualand Mines, August to September 2004. Unpublished report prepared for De Beers Consolidated Mines NM. Archaeology Contracts Office, University of Cape Town.

Orton, J. & Halkett, D. 2006. Mitigation of archaeological sites within the Buffels Marine and Koingnaas Complexes, Namaqualand, September 2005 to May 2006. Unpublished report prepared for De Beers Consolidated Mines NM. Archaeology Contracts Office, University of Cape Town.

Orton, J. & Halkett, D. 2007. Excavations at Noetzie Midden: an open site on the Cape south coast. *The Digging Stick* 24(3): 5–7.

Parkington, J.E. 1976. Follow the San: an analysis of seasonality in the prehistory of the southwestern Cape, South Africa. Unpublished PhD thesis. Cambridge: University of Cambridge.

Parkington, J. 1980. Time and place: some observations on spatial and temporal patterning in the Later Stone Age sequence in southern Africa. *South African Archaeological Bulletin* 35: 7–83.

Parkington, J. 2006. *Shorelines, Strandlopers and Shell Middens.* Cape Town: Krakadouw Trust.

Parkington, J.E. & Poggenpoel, C.A. 1971. Excavations at De Hangen 1968. *South African Archaeological Bulletin* 26: 3–36.

Parkington, J. & Poggenpoel, C. 1987. Diepkloof Rock Shelter. In: Parkington, J.E. & Hall, M. (eds) *Papers in the Prehistory of the Western Cape, South Africa*: 269–293. Oxford: British Archaeological Reports International Series 332(ii).

Richards, D. 1987. *Shells of Southern Africa.* Cape Town: C. Struik Publishers.

Roberts, D.L. 2003. *Age, Genesis and Significance of South African Coastal Silcretes.* Memoir 95, Council for Geoscience.

Sealy, J. & Van der Merwe, N. 1988. Social, sptial and chronological patterning in marine food use as determined by δ^{13}C measurements of Holocene human skeletons from the south-western Cape, South Africa. *World Archaeology* 20: 87–102.

Schweitzer, F.R. 1979. Excavations at Die Kelders, Cape Province, South Africa. *Annals of the South African Museum* 78: 101–232.

Schweitzer, F.R. & Wilson, M.L. 1982. Bynekranskop 1: a late Quaternary living site in the southern Cape Province, South Africa. *Annals of the South African Museum* 88(1): 1–203.

Van Rijssen, W.J. 1992. The late Holocene deposits at Klein Kliphuis Shelter, Cederberg, western Cape Province. *South African Archaeological Bulletin* 47: 34–39.

Visser, H.N. & Theron, J.N. 1973. *1:250 000 Geological Series, 3218 Clanwilliam, Explanatory Notes.* Pretoria: Geological Survey of South Africa.

Webley, L., Archer, F. & Brink, J. 1993. Die Toon: a late Holocene site in the Richtersveld National Park, northern Cape. *Koedoe* 36(2): 1–9.

Wendt, W.E. 1972. Preliminary report on an archaeological research programme in South West Africa. *Cimbebasia (B)* 2: 1–61.

Yates, R., Parkington, J. & Manhire, A. 1994. Rock painting and history in the south-western Cape. In: Dowson, T.A. & Lewis Williams, J.D. (eds) *Contested Images*: *Diversity in Southern African Rock Art*: 29–60. Johannesburg: Witwatersrand University Press.