

■ LESOTHO

Archaeological investigation of an open air hunter-gatherer site in the Lesotho highlands: Preliminary report on the 1995 season at Likoaieng

Peter J. Mitchell
 Pitt Rivers Museum
 University of Oxford
 64 Banbury Road
 Oxford OX2 6PN
 United Kingdom
 Email: peter.mitchell@prm.ox.ac.uk

Ruth Charles
 The Queen's College
 Oxford OX1 4AW
 United Kingdom
 E-mail ruth.charles@prm.ox.ac.uk

Introduction

The third field season of current research on late Quaternary hunter-gatherer adaptations in the Lesotho highlands took place in July and August 1995. This year it concentrated on the excavation of Likoaieng, an open air site on the banks of the Orange River (Figure 1). This site (Lesotho site 2928DA11) was first located in 1992 during survey work accompanying excavation of Sehonghong Shelter (Mitchell 1993, 1994a). Five distinct dark grey horizons were observed within a >2 m deep stratigraphic profile that appears to have been exposed by flood action at some unknown time. On closer examination, large numbers of fresh-looking stone artifacts, well-preserved mammal and fish bone and charcoals were noted. It seemed likely that these horizons might be the remains of in situ occupations that had undergone relatively little post-depositional disturbance. Given that no open air site with well preserved organics had previously been noted in Lesotho, it was decided to undertake a test excavation of the site. At the same time, the opportunity was taken to carry out further field survey in previously uninvestigated parts of the Sehonghong region, results of which will be reported elsewhere.

Excavation procedure

Excavation at Likoaieng had two principal objectives. The first was to expose the largest area possible within available time/manpower constraints so as to be able to investigate the spatial patterning of artifacts, features and faunal remains. The intention here was to obtain data of relevance for understanding how the people who used the site organized their activities spatially and for facilitating comparisons with work at sites in South Africa (e.g. Henderson 1992; Parkington et al. 1992). The second objective was to obtain as full a picture as possible of the stratigraphic sequence at Likoaieng by maximizing the depth of the excavation. In addition to establishing the antiquity of the site and its potential for further investigation, it was hoped that evidence might be forthcoming for its occupation at a time other than those represented in the Sehonghong Shelter sequence, thereby provoking a reassessment of existing models of the regional settlement history of the Lesotho highlands (Mitchell in press).

A 4 m² area at the northeastern end of the site was chosen for excavation. Examination of the exposed section in front of the site suggested that the stratigraphy was best developed at this point, though no indications of the site's existence or extent were apparent from walking over its surface. A 2.0 to 1.5 m wide baulk was left in front of the excavation area along this exposed face to act as a reference section that could be examined during excavation. It also served as a retaining wall once excavation was completed and the site back-filled. Excavation was undertaken within a quarter-metre grid in natural stratigraphic units. All formal stone artifacts, cores, grindstones, potsherds, bone implements and diagnostic mammalian fauna observed during excavation were recorded three-dimensionally using a theodolite. Except where culturally sterile overburden or culturally sterile deposits between occupation horizons had to be removed, all excavation was undertaken using trowels and all soil was sieved through a 2 mm mesh. Finds were pre-sorted on site.

On account of limitations of time and manpower, excavation of the whole of the 16 m² area originally opened up could only be continued to a depth of approximately 1.8 m. Below this a 1.5 m² test pit was excavated to a further depth of

some 1.8 m in order to provide an indication of the stratigraphy of the lower portion of the Likoieng sequence. Nine occupation horizons were found, of which four (Layers I, III, V and VII) were present in the main excavation area and five (Layers IX, XI, XIII, XV, XVII) only in the test-pit. All the occupation horizons are rich in stone artifacts, bone and charcoals and in some cases contain discrete hearths and pits. They are separated from each other by culturally sterile or near-sterile layers (Figures 2 and 3). As observed during excavation, sediments in the main excavation area were fine-grained and predominantly silty, but with an ashy component in the occupation horizons. The test-pit sediments were much sandier, becoming coarser-grained towards the base of the excavation.

Artifact assemblages

All the artifact assemblages from Likoieng belong to the Later Stone Age (LSA) and in their predominant use of opalines as a raw material resemble the LSA occurrences known from Sehonghong Shelter (Carter et al. 1988). Scrapers and, secondarily, adzes are the most common formally retouched tools present in Layers I to XIII, although rare examples of backed microliths and spokeshaves were also found. The overall morphology and size of the scrapers, as well as the comparatively high incidence of adzes, are characteristic of late Holocene artifact assemblages in Lesotho and elsewhere in Africa south of the Limpopo. They suggest that the Likoieng Layer I to XIII assemblages should be attributed to the post-classic phase of the Wilton Industry.

Because of their small size the artifact assemblages from Layers XV and XVII are more difficult to characterize. Formal tools seem to be rarer than higher up in the Likoieng sequence and the morphology of the few scrapers present is reminiscent of those of Woodlot type known from slightly earlier contexts in western Lesotho (Mitchell 1994b; Mitchell et al. 1994) and from the 7200 B.P. and 6000 B.P. occupation pulses at Sehonghong Shelter. The rarity of formal tools in Layers XV and XVII could, however, also result from sample error, from differences in the activities carried out at the site at these times, or from the site's role within the local settlement system (cf. Wadley 1987).

The artifact assemblages from Layers III, V and VII include highly distinctive pressure-flaked backed bladelets previously recognised at Moshebi's Shelter in the Lesotho highlands (Carter 1969 Fig 3:5), and at sites in the upper Karoo and the Caledon Valley further to the south and west (Bousman 1991; Mitchell 1991; Klatzow 1994). Dates from these sites suggest that they were in use during the second and late third millennia B.P., which would be consistent with their stratigraphic position at Likoieng. Their technological and social function remains to be established. One possibility is that they were used in fish-processing, given their association with large numbers of fish remains at Likoieng, another (more likely, given their distribution) that they formed part of the armature of a composite arrow of some kind. However, their principal significance may have been as an ethnic or other stylistic marker. In this respect they recall the pressure-flaked arrowheads found across the central interior plateau of South Africa/Lesotho during the last two millennia B.P., which have a comparable spatial and temporal distribution (Humphreys 1991).

Pottery at Likoieng is restricted to Layer I. Its overall appearance, colour, thickness and friability strongly resemble the LSA ceramics found in late Holocene levels at Sehonghong Shelter, and more generally pottery from other LSA contexts in the Lesotho highlands, KwaZulu-Natal and the northern Eastern Cape Province (Mazel 1992). A single sherd differs from the remainder of the Likoieng ceramics in colour, thickness and in the presence of cross-hatched decoration. The use of impression to produce this design and the sherd's fabric are both typical of Early Iron Age pottery, while the grooved cross-hatched motif itself specifically recalls the Ndongonwane and Msuluzi pottery traditions of KwaZulu/Natal and Transkei, which date to between 1400 and 1150 B.P. (T. Maggs, pers. comm.). This find therefore extends previous evidence of contact between early agriculturalists and contemporary foragers in KwaZulu-Natal (e.g. Mazel 1989) to the Lesotho side of the Drakensberg Escarpment.

Organic remains

Faunal preservation at the site varied from comparatively poor in Layer I to much better below this. Nevertheless, bone in Layers III, V

Figure 1: Map of Lesotho locating Likoaieng.

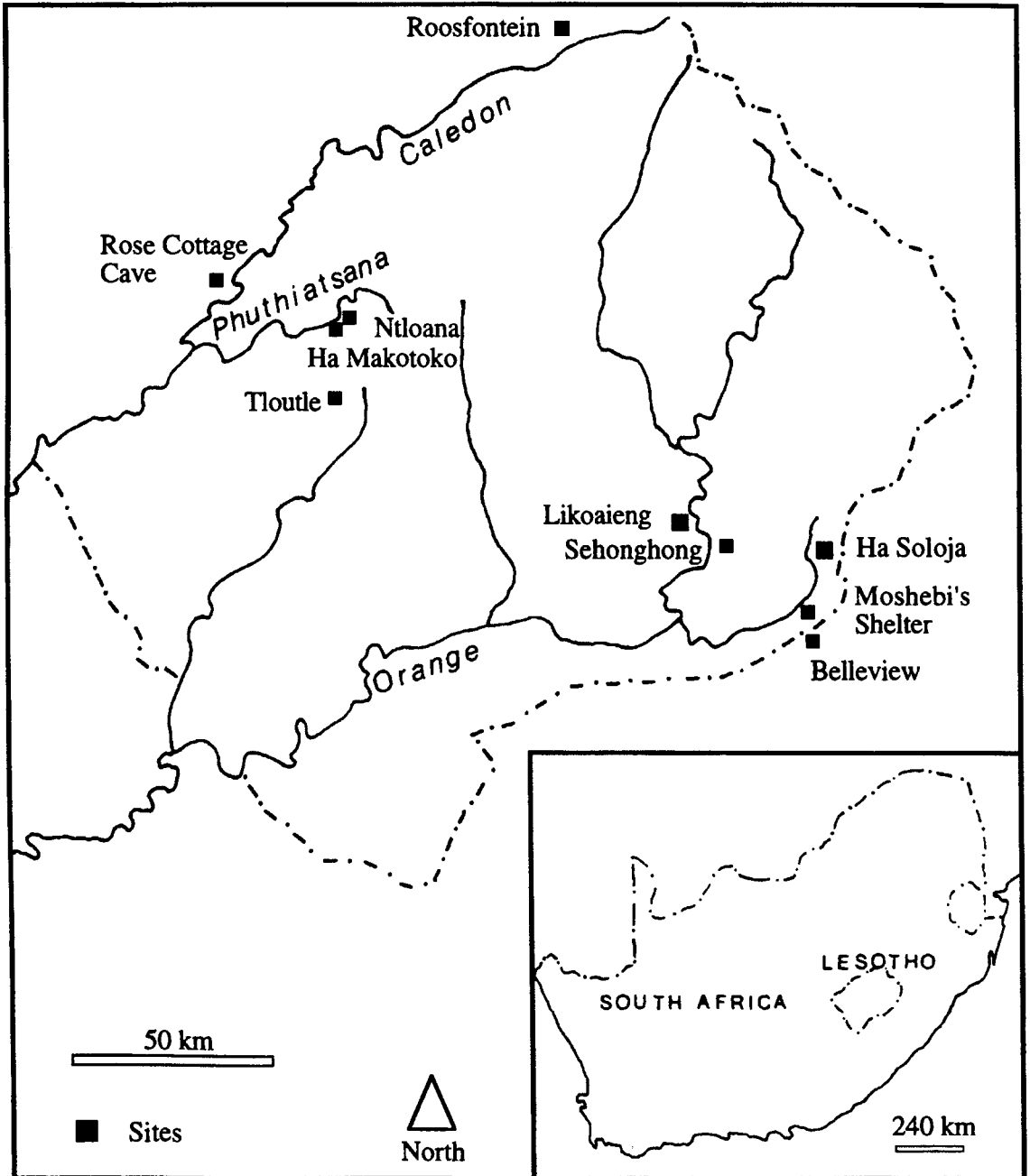
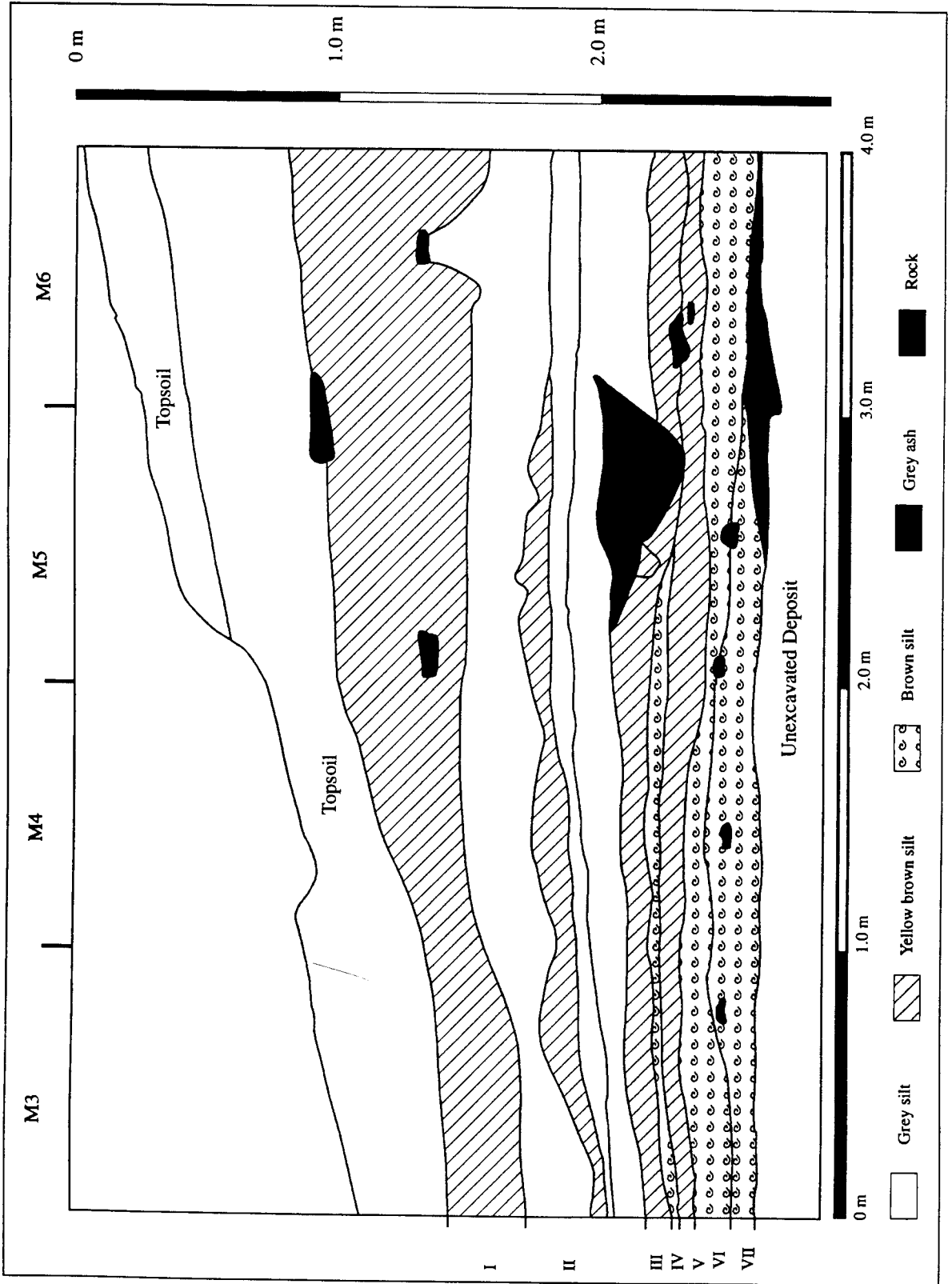


Figure 2: Likoieng: section of the south wall of the main excavation area. Layers are shown by Roman numerals on the left side of the section.



and VII is generally fragmentary and occurs mostly in pieces below 10 mm in size, although some larger pieces are present. Very few large mammals appear to be present in these faunal assemblages, which consist almost entirely of fish remains, including otoliths and, in some cases, still partly articulated skeletons. Preliminary observations suggest that there is a tendency for the amount of large mammal bone to increase on moving from Layers III to V and again to Layer VII. The large mammal component of the Likoieng fauna also seems to increase considerably relative to that represented by fish in the layers sampled in the P4/5 test-pit, perhaps indicating a shift in site use at this time or a difference in activity localization within it.

Charcoals were present in all the culture-bearing stratigraphic horizons at the site. Though not as well preserved as those from Sehonghong Shelter, it should be possible to obtain taxonomic identifications for them. Sediment samples were also taken from the site to determine its potential for preserving pollen and phytolith samples; arrangements have been made for their analysis.

Discussion

It seems likely that Layers III, V and VII were all covered quite rapidly and have been subject to minimal post-depositional disturbance. This is suggested by the excellent faunal preservation and by the *in situ* recognition of discrete features and of what appear, from the colours of the raw materials used, to be distinct stone-knapping clusters; refitting will be used to ascertain if this is indeed so. The restriction of ostrich eggshell beads to Layer III and the presence in Layers V and VII of partial fish skeletons in which articulated sequences of vertebrae and ribs were still present add weight to these observations. Although this conclusion needs to be investigated further by a dating program and by refitting studies, it is possible that each of these layers represents a single occupational event. The presence of pressure-flaked backed bladelets in each of them, along with the possibility that the comparatively sterile sediments of Layers IV and VI could have been deposited by flooding of the Orange River within a matter of a few years at most (P. Carter, pers. comm.), suggests that all three occupational events may tightly cluster together in time.

If Layers III, V and VII at Likoieng do represent successive short-term occupation horizons then they offer the possibility of investigating how people organized and used space at an open air location, not only in terms of artifact manufacture, use and disposal, but also as regards the processing, consumption and disposal of food. This possibility is unique for a Later Stone Age site in the interior of southern Africa, although Florisbad (Brink 1987) offers a Middle Stone Age comparison. Spatial analyses of this kind have otherwise been attempted either in coastal contexts (Parkington et al. 1992) or in rock-shelters, such as Rose Cottage Cave in South Africa's Free State province (Engela 1995). However, the palimpsest nature of rock-shelter deposits makes it extremely difficult to pick out relatively short-lived occupations of the kind we suspect are present at Likoieng (Parkington 1992). The three-dimensional recording of all small finds in the main excavation area will, coupled with an analysis of the distribution of artifacts within quarter square metre quadrats, provide an initial basis on which to examine and interpret spatial patterning. This can be taken further once analysis of the associated faunal remains begins, as well as by attempts at refitting stone artifacts made from visually distinctive raw materials and perhaps also of fragments of large mammal bone (cf. Nilssen 1989).

The increased exploitation of riverine resources by later Holocene hunter-gatherers in southern Africa has been remarked upon by several workers, notably Hall (1990), as part of a more widespread process of social and economic intensification. The overwhelming dominance of fish in the faunal assemblages from Layers III, V and VII at Likoieng fits this pattern. Though unidentified for now, it seems likely that most of these animals will prove to belong to the cyprinid family, members of which attain weights of up to 25 kg and are rich in protein and fat. Such fish are most easily caught on spring spawning runs and both spearing and trapping are represented in rock-paintings from Lesotho (Vinnicombe 1976). At Likoieng, the total absence of bone fish hooks from the artifact assemblages found suggests that angling *per se* was probably not employed. However, the line of boulders extending almost right across the Orange River immediately in front of the site would have hindered the upstream movement of fish and could have provided an ideal setting for traps. These boulders could be

one reason why the site was repeatedly occupied, although preliminary indications of the faunal assemblages from the lower part of the sequence (Layers IX-XVII) suggest that fishing may have been less important earlier in the site's history.

For Layers III, V and VII, however, one of the main reasons for people having been at the site must have been to take fish. Direct evidence of seasonality may be forthcoming from analysis of fish otoliths, while population structure and body part representation should inform on how fish were procured and processed. One possibility is that people came to Likoaieng to target a resource rich in protein and fat at a time of year when few plant foods were available and most animals were low in fat, another that they processed fish there, perhaps by drying in the open air, prior to removing it elsewhere for consumption. Though not necessarily exclusive, both scenarios suggest a greater degree of complexity to local hunter-gatherer settlement-subsistence behaviour than has hitherto been suspected.

Radiocarbon dating of the Sehonghong Shelter sequence (Mitchell and Vogel 1994) indicates that human use of this site has been intermittent, rather than continuous, during the last 25 000 years. Examination of radiocarbon dates from other rock-shelters in the region suggest that this is true of the Lesotho highlands as a whole (Carter 1978). Climatic changes, such as the Last Glacial Maximum and the late Holocene neoglacial advance, may be implicated in this pulsing, but this remains to be demonstrated. However, it is possible that rock-shelter sequences do not yield a complete record of human presence in this region and that certain activities, perhaps even the majority, were undertaken in other contexts, such as open air locations.

Preliminary indications from the examination of the Likoaieng artifact assemblages during excavation are that the second possibility may be correct. Two lines of reasoning suggest this. Firstly, all the Likoaieng assemblages, except that from Layer I, lack ceramics. Unless we are to suppose that pottery was never introduced to the site, or at least not to that part of it so far excavated, then the implication is that Layers III to XVII predate the introduction of pottery to the southern Drakensberg. A date of 1710 ± 20 B.P. (Pta-6063) from the pottery-containing GAP layer at Sehonghong Shelter (Mitchell and Vogel 1994) is

consistent with others from the region (Mazel 1992) in suggesting that this introduction took place at least 1700 years ago. Secondly, the artifact assemblages from Layers III to XIII all contain large numbers of adzes and very few backed microliths, characteristics which, from comparisons with other southern African LSA occurrences, place them within the last 4000 years B.P. It therefore seems likely that at least six occupation pulses at Likoaieng may fall within this period, although no excavated rock-shelter in the Lesotho highlands has yet provided radiocarbon dates between 2100 and 6000 B.P. (Carter 1978; Mitchell and Vogel 1994). If this conclusion is confirmed by future radiocarbon dating of the Likoaieng site, then it is clear that the archaeologically common practice of reconstructing prehistoric settlement patterns in southern Africa from rock-shelter evidence alone is a highly hazardous undertaking.

If it is true that most of the Likoaieng sequence dates to the late Holocene, then it also follows that at least 3 metres of soil have built up on this site within the last 4000 years. This implies that the landscape of this part of the Lesotho highlands has changed considerably over this time, and that other Stone Age open air sites may remain undiscovered, buried beneath comparable sediments elsewhere along the Orange River Valley. It is therefore imperative to establish the source(s) of origin of the Likoaieng sediments. Fluvial, aeolian and colluvial processes are all possibilities, although the site's location on the edge of the Orange flood-plain may make the first most likely. Observation of exposed sedimentary sequences in dongas close to the site and discussions in the field with S. Grab and A. Simpson of the Dept of Geography of the University of Natal, Pietermaritzburg, suggest that there is considerable scope in the Sehonghong area for future studies of the fluvial geomorphology of the Orange River as a whole. Improved understanding of the processes involved in sediment accumulation at Likoaieng may ultimately prove relevant to attempts to control soil erosion, which is a critical environmental problem in Lesotho today (Gay et al. 1995).

Conclusion

Even before detailed analysis of the artifacts, faunal remains and charcoals recovered begins, it is clear that Likoaieng has considerable potential for the investigation of the spatial patterning of human activities during at least three of its occupation pulses (Layers III, V, VII). Furthermore, radiocarbon dating of these and other cultural layers at the site will not only provide a firm chronology for Likoaieng, but hopefully also confirm the suspicion that the site is monitoring human activities in the Lesotho highlands at times other than those represented in local rock-shelter sequences. At least one of those activities appears to have been much more intensive fishing than is known elsewhere in southeastern southern Africa, suggesting that Likoaieng may make a significant contribution to the study of late Holocene socio-economic intensification among southern African foragers.

Likoaieng demands further investigation. Minimally, this requires the doubling of the excavation area as far as the upper layers (I-VII) is concerned and a concomitant horizontal expansion of the P4/5 test-pit to investigate the layers present within it on a broader basis. At the same time, this will create the opportunity to deepen the test-pit excavation in order to explore the possibility that further layers of archaeological significance occur below Layer XVII. Several other avenues of future investigation can also be identified. These include the taking of sediment samples from the site for luminescence dating to check on the history of sedimentation between each occupation pulse, on-site examination of the sedimentary sequence by a qualified sedimentologist and the development of a longer-term project to examine the fluvial geomorphology of the Upper Orange River.

Work at Likoaieng assumes greater significance as a source of information on late Quaternary hunter-gatherer adaptations in the Lesotho highlands because of the threat posed to the site by the proposed construction, as part of Phase III of the Lesotho Highlands Water Project, of a dam some 25 km further downstream. Although this dam is scheduled to be built early in the next century and the Likoaieng site could conceivably be excavated in its entirety before then, more is at stake. The very complexity of the

Likoaieng sequence and the chance nature of its discovery in 1992 emphasize not only the potential archaeological richness of the area that will be flooded, but also the fact that little is yet known of the extent to which a major part of Lesotho's cultural heritage may be irretrievably lost.

Acknowledgements

Permission to carry out fieldwork in Lesotho was given by the Lesotho Protection and Preservation Commission (Chairwoman, Mrs N. Khitsane) and to camp and work at Likoaieng by Mofumahali Mapola of Ha Mapola and Morena Majala of Sehonghong.

Excavation would have been impossible without the help and friendship of R. Ault, J. Behrens, A. Esterhuysen, S. Fletcher, J. Haile, B. Kershaw, M. Merrony and all our local workers, especially G. Mathole, E. Moroka and L. Tau. The assistance of Mr. and Mrs. J. Forrest of Maseru, the pilots of Senqu Air Services and Ntate M. Phutsoe was invaluable, as was the loan of excavation equipment from the Dept. of Geography of the University of Natal, Pietermaritzburg, and the Depts. of Archaeology of the University of the Witwatersrand and the University of Wales, Lampeter. We are also grateful to Dr T. Maggs for examining the Early Iron Age sherd from Layer I.

Fieldwork at Likoaieng was made possible by grants from the British Academy, the Society of Antiquaries, the Swan Fund, the University of Wales, Lampeter, and the Prehistoric Society, and was also supported by grants from the Boise and Meyerstein Funds to RC.

References

- Bousman, C.B.
1991 *Holocene Palaeoecology and Later Stone Age Hunter-Gatherer Adaptations in the South African Interior Plateau*. Ph.D. thesis, Southern Methodist University, Dallas.
- Brink, J.S.
1987 *The archaeozoology of Florisbad*. *Memoirs van die Nasionale Museum, Bloemfontein* 24: 1-151.

- Carter, P.L.
 1969 Moshebi's Shelter. *Lesotho* 8: 13-23.
 1978 *The Prehistory of Eastern Lesotho*. Ph.D. thesis, University of Cambridge, Cambridge.
- Carter, P.L., P.J. Mitchell and P. Vinnicombe
 1988 *Sehonghong: the Middle and Later Stone Age Industrial Sequence at a Lesotho Rock-Shelter*. Oxford: British Archaeological Reports.
- Engela, R.
 1995 *Space, Material Culture and Meaning in the Late Pleistocene and early Holocene at Rose Cottage Cave*. M.A. thesis, University of the Witwatersrand, Johannesburg.
- Gay, J., D. Gill and D. Hall
 1995 *Lesotho's Long Journey: Hard Choices at the Crossroads*. Maseru: Sechaba Consultants.
- Hall, S.L.
 1990 *Hunter-gatherer-fishers of the Fish River Basin: A Contribution to the Holocene Prehistory of the Eastern Cape*. D.Phil. thesis, University of Stellenbosch, Stellenbosch.
- Henderson, Z.
 1992 The context of some Middle Stone Age hearths at Klasies River Shelter 1B: implications for understanding human behaviour. *Southern African Field Archaeology* 1: 14-26.
- Humphreys, A.J.B.
 1991 On the distribution and dating of bifacial tanged and barbed arrowheads in the interior of South Africa. *South African Archaeological Bulletin* 46: 41-43.
- Klatzow, S.
 1994 Roosfontein: a contact site in the eastern Orange Free State. *South African Archaeological Bulletin* 49: 9-15.
- Mazel, A.D.
 1989 People making history: the last ten thousand years of hunter-gatherer communities in the Thukela Basin. *Natal Museum Journal of Humanities* 1: 1-169.
 1992 Early pottery from the eastern part of southern Africa. *South African Archaeological Bulletin* 47: 3-7.
- Mitchell, P.J.
 1991 Pressure-flaked backed bladelets and points: new artefact types in the Later Stone Age of southern Africa. *Lithics* 12: 24-30.
 1993 Late Pleistocene hunter-gatherers in Lesotho: report on excavations at Sehonghong rock-shelter, July to September 1992. *Nyame Akuma* 39: 43-49.
 1994a First results of the survey of a hunter-gatherer landscape in the Lesotho highlands. *Nyame Akuma* 41: 36-40.
 1994b The archaeology of the Phuthiatsana-ea-Thaba Bosiu Basin, western Lesotho, southern Africa: changes in Later Stone Age regional demography. *Antiquity* 68: 83-96.
- in press The Late Quaternary of the Lesotho highlands: preliminary results and future potential of ongoing research at Sehonghong Shelter. *Quaternary International*.
- Mitchell, P.J., J.E. Parkington and R. Yates
 1994 Recent Holocene archaeology in western and southern Lesotho. *South African Archaeological Bulletin* 49: 33-52.
- Mitchell, P.J. and J.C. Vogel
 1994 New radiocarbon dates from Sehonghong rock shelter, Lesotho. *South African Journal of Science* 90: 284-288.

Nilssen, P-J.

- 1989** *Refitting Pottery and Eland Body Parts as a Way of Reconstructing Hunter-Gatherer Behaviour: An Example from the Later Stone Age at Verlorenvlei.* B.A. (Hons.) thesis, University of Cape Town, Cape Town.

Parkington, J. E.

- 1992** Making sense of sequence at the Elands Bay Cave, western Cape, South Africa. In A.B. Smith and B. Mütti, editors, *Guide to Archaeological Sites in the South-western Cape.* Southern African Association of Archaeologists, Cape Town, pp. 6-12.

Parkington, J.E., P. Nilssen, C. Reeler and C. Henshilwood

- 1992** Making sense of space at Dunefield Midden campsite, western Cape, South Africa. *Southern African Field Archaeology* 1: 63-70.

Wadley, L.

- 1987** *The Later Stone Age of the Southern Transvaal: Ecological and Social Interpretations.* Oxford: British Archaeological Reports.