Most readers of The Digging Stick will be familiar with the dams (two are already operational, another is about to begin construction) that form part of the Lesotho Highlands Water Project. Dam building is not, however, confined to Lesotho's highlands and since 2008 we have been engaged in fieldwork to mitigate the impact of the Metolong Dam, which will shortly inundate a 14 km long stretch of the Phuthiatsana River upstream of Thaba Bosiu some 30 km northeast of Maseru (Fig. 2 – see page 2); Arthur & Mitchell 2010; Mitchell & Arthur 2010). Systematic archaeological research ahead of such major projects is still not the norm in much of Africa. However, in this case recognition of the area’s archaeological importance combined with funding from the World Bank and real support from the government agency charged with oversight of the project, the Metolong Authority, makes Metolong an exception.

Early explorations of Lesotho’s archaeology located Middle Stone Age (MSA) artefacts downstream of our research area, as well as the rich Bushman rock paintings at Ha Baroana, but the first serious research along the Phuthiatsana River came with Lucas Smits’ (1983) Analysis of Rock Art in Lesotho (ARAL) Project, which recorded 27 rock art sites within the Metolong Dam’s catchment in 1979. These records are now available via the SARADA database of the Rock Art Research Institute, University of the Witwatersrand (www.sarada.co.za).

A decade later one of us tested the two largest rock shelters in the Metolong Catchment as part of a broader research project in western Lesotho (Mitchell 1994). This showed that both Ha Makotoko and Ntloana Tsoana contained important Later Stone Age (LSA) sequen-

Fig. 1: Ntloana Tsoana at the close of excavations in 2010 (copyright Jess Meyer)

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ces dating to the Pleistocene/Holocene transition (Mitchell 1993), with Ntloana Tsoana also preserving MSA assemblages of Howiesons Poort and post-Howiesons Poort affiliation (Mitchell & Steinberg 1992). Optically Stimulated Luminescence (OSL) dating now fixes its initial occupation at around 61 000 years ago (Jacobs et al. 2008). Across the Caledon River near Ladybrand only Rose Cottage Cave (Wadley 1997) provides a comparably detailed set of observations for southern Africa’s central interior, while the very closeness of Ntloana Tsoana to Ha Makotoko (they are just 2 km apart) provides a unique opportunity for examining cultural responses to environmental change across the Pleistocene/Holocene boundary at the local level. On the basis of previous work in the area and following our own enquiries about the measures the Lesotho authorities intended to take to mitigate the dam’s impact on the archaeological record, we were asked to initiate the Metolong Cultural Resource Management (MCRM) Project.

Preliminary investigations
As no further research had been undertaken in the Metolong area since 1990, establishing the full scale of the area’s archaeological resources was central to Phase 1 of our work in 2008/09. This involved extensive field-walking of both the reservoir catchment and the area identified for construction of the associated Water Treatment Works. All rock shelters within these areas were visited, including the 27 rock art sites previously recorded by ARAL, for each of which a detailed digital photographic record was made and an assessment of its current state of preservation undertaken. As a result of this fieldwork two further rock art sites and 23 open-air artefact scatters were located. Test excavations were also undertaken at three smaller rock shelters thought to be threatened with inundation, and conservation measures put in place at Ha Makoanyane, an abandoned late 19th to 20th century Basotho village. Following these preliminary efforts, which included drawing up detailed recommendations for the sustainable, long-term development of archaeological heritage structures in Lesotho, we were asked to carry out much more detailed investigations.

Ntloana Tsoana and Ha Makotoko
Most of that fieldwork took place in 2009/10 and focused on the two largest rock shelters, Ntloana Tsoana (280 m²) and Ha Makotoko (820 m²), both of which lie on the south side of the Phuthiatsana River (Figs 1 and 3). Further excavations, this time funded independently of the Metolong Authority, took place at Ntloana Tsoana in 2011 and others are scheduled there and at Ha Makotoko for early 2012. Excavation began by removing the archaeologically almost wholly sterile complexes of silt, clay and sand deposits overlying the sites’ early Holocene levels. At Ntloana Tsoana excavation has focused within a single area toward the western edge of the site, while at Ha Makotoko several excavation areas have been opened up, the largest and most productive of them being close to the 1989 trench.

Our excavation policy has had the objective of recording the sites’ stratigraphies in as much detail as possible, while also empowering individual excavators as part of a broader effort to train local people in archaeological fieldwork techniques (an article by Charles Arthur on this aspect will appear in the August 2012 issue). Excavation has been carried out in 0,25 m² quadrats within 1 m² squares, with all excavated contexts recorded, planned and photographed in detail using the single context recording technique that is standard procedure in British contract archaeology. At Ntloana Tsoana the sediments’ high clay fraction and moisture content necessitated wet sieving all excavated archaeological deposits through a 2 mm mesh, but at Ha Makotoko, where the deposit is much finer and drier, dry sieving sufficed. Finds were sorted into basic analytical categories (flaked stone, bone, charcoal, etc.) on-site, or back at the National University of Lesotho, and samples were regularly taken for specialist analyses of macrobotanical remains, particle size and phytoliths, etc. Sections have also been systematically sampled for palaeoenvironmental analyses and dating, both radiocarbon and OSL.

All told, over 700 stratigraphically separate contexts have so far been removed at Ntloana Tsoana, along with a further 229 at Ha Makotoko. Building on the radiocarbon dates obtained from the 1989 excavations, a further 16 Accelerator Mass Spectrometry (AMS) dates have now been secured, with others being planned. Detailed analyses of the stone, bone, shell and ceramic artefacts, faunal remains, sediment samples and botanical specimens retrieved are now underway and involve collaboration with colleagues in Britain, Canada and South Africa. Unusually, in the southern African cultural resource management (CRM) context, the project has provided two years of
funding for these post-excavation analyses.

One of the most exciting discoveries to date is the recognition of previously unanticipated periods of occupation at the two sites. At Ntloana Tsoana, for instance, where the Phuthiatsana River has eroded away much of the upper sediments, a small post-classic Wilton assemblage dating to the 14th century was found at the very rear of the shelter. Much further down, the site’s LSA sequence has been amplified by the discovery of multiple occupations characterised by small bladelet cores and numerous bladelets. This is the first time that the late Pleistocene Robberg Industry has been recovered from a datable context in western Lesotho. Associated dates suggest that this occupation falls around 13000 to 12000 BC.

Turning to Ha Makotoko, immediately below the dust covering the surface of the site, we encountered the remains of a small stone structure, tentatively interpreted as a livestock pen because of the presence of both animal hair and dung. This structure may document an early (18th to early 19th century?) Sotho use of the site, although historical research undertaken by our colleagues Stephen Gill and Thabo Nthoana of Morija Museum and Archives suggests that the first permanent villages in the Metolong area were only established in the 1860s. A complete small pot found near this stone structure may possibly suggest that early Sotho settlers also used Ha Makotoko as a rainmaking site. Finally, and again contrary to our expectations, Ha Makotoko delivered in situ MSA deposits for which we have thus far just one date, an AMS determination of 40100 ± 230 BP that fits our preliminary assessment that the stone artefacts found are of post-Howiesons Poort character, the formal part of which is dominated by unifacial points. Lebo Mohapi and Marlize Lombard (University of Johannesburg) are currently studying these artefacts, along with the MSA artefacts from Ntloana Tsoana, in ways that will include selective residue and macrofracture analyses.

The principal contribution Ntloana Tsoana and Ha Makotoko make to understanding how hunter-gatherers used the Metolong landscape nevertheless falls across the Pleistocene/Holocene transition, roughly 13000 to 7500 BC. This was a period of extensive environmental and climatic change across southern Africa as the region shared in the global experience of moving from much colder conditions at the tail end of the Last Glaciation to a climate much more similar to today’s. The extraordinarily complex and fine-grained nature of our sites’ stratigraphies for this period, especially at Ntloana Tsoana (Fig. 4), should provide insights into how the local ecology evolved and how people adapted to changing conditions at a level of detail without parallel in southern Africa. That Ntloana Tsoana was periodically flooded during the Holocene suggests that its sedimentary record, in particular, may be a sensitive gauge of past environmental conditions.

By excavating on a large scale we can also identify discrete, well-preserved spatial patterning of features, flaked stone artefacts and bone, as well as possible changes in site use over time. For example, significant differences in the kinds of fires built (and the activities undertaken near them?) are evident at Ntloana Tsoana, with some hearths being placed in small pits while other spread over areas of up to 2 m across. At Ha Makotoko, too, our excavations point to different uses of different areas of this very large rock shelter: small, discrete hearths in our principal excavation compared to the much more extensive ashy horizons found only a few metres away in 1989. In the western part of the site, hearths are associated with surprisingly few artefacts.

The smaller rock shelters

Although Ha Makotoko and Ntloana Tsoana have consumed most of our energies, other rock shelters have also been investigated. Lehaha Fateng Tsa Pholo, a painted site still used today by male initiation schools, preserves, for example, an early Wilton industry dated to about 6000 to 5800 BC that combines small convex scrapers and occasional backed microliths with the ‘Woodlot’ scrapers (steep end-scrapers with adze-like retouch along one or both lateral margins) typical of the later phase of the early Holocene Oakhurst complex. Nearby, a second rock shelter (2927BD3) also produced a few Woodlot scrapers, but this time from a clearly disturbed and largely geological deposit. Of greater interest, downstream of Ha Makotoko, a painted site recorded by Smits (1983) as ARAL172 produced ceramics, most likely of Sotho manufacture, in association with a post-classic Wilton lithic assemblage rich in small scrapers. Dates for this site have still to be obtained, but it may document a very recent survival of hunter-gatherers in the Metolong area.

The broader landscape

Of the many open-air artefacts scatters located in Phase 1 of our project, most are purely MSA in content, although in some cases LSA artefacts were recorded and, in one instance, an Early Stone Age (ESA) hand-axe. Although most of these sites do not preserve in situ occupation, in three instances artefact density was high enough to warrant collection for further study. We have also explored the local landscape for the sources of the raw materials used to make the stone artefacts found at Ha Makotoko and Ntloana Tsoana, and are integrating these results into our analysis of the lithic assemblages from the sites.

In addition, Adrian Parker and Mike Morley from Britain’s Oxford Brookes University have located and sampled palaeoenvironmentally informative geological sequences along the Phuthiatsana River and are linking observations from these sites into their analyses of the geoarchaeology, soil micromorphology and phytolith sequences of Ha Makotoko and Ntloana Tsoana. Other important palaeoenvironmental/diet-
ary collaborations are those of Genevieve Dewar (University of Toronto), who is analysing the faunal remains from both sites, and Patrick Roberts (University of Oxford) who, with the help of Julia Lee Thorp, has analysed the stable carbon isotope signatures of the sites’ sediments as a proxy record of changes in vegetation over time. We plan to extend the latter technique to offsite sediment sequences and onsite faunal remains in due course.

Rock art and living heritage
Before our project began, none of the Metolong Catchment’s paintings had been traced. To produce a permanent record of them before they are flooded we therefore instituted a comprehensive programme of digital photography (by Jess Meyer) and tracing (by Lara Mallen, University of Oxford). While most paintings belong to the fine-line tradition of San rock art, other traditions – including some linked to contemporary Basotho initiation rituals – are also present. As well as planning to remove some of the best preserved panels for safekeeping and eventual display early in 2012, we are also facilitating a programme of dating and pigment analysis (by Adelphine Bonneau, University of Quebec-Montréal) that we hope will help define a sound chronological context for San rock art.

That some of the painted sites in the Metolong Catchment and some of their paintings retain relevance for the area’s contemporary inhabitants underlines the importance of the living heritage component of today’s landscape. Most of the work relating to this is being carried out by colleagues from the National University of Lesotho, but one of our students (Larissa Snow) has made an important contribution by researching the beliefs held by local people about water snakes thought to live in pools within the Phuthiatsana and having associations with rainmaking practices.

Ha Makoanyane: a recent Basotho village
Previous archaeological research in Lesotho has largely failed to include sites linked to its present population and their immediate Iron Age ancestors (though see Dreyer 1996). As well as noting relevant material culture (especially ceramics), stonewalling or rock art in rock shelters within the area, we therefore seized the opportunity provided by road construction near the abandoned village of Ha Makoanyane to explore the archaeology of this late 19th to early 20th century rural community (Fig. 5). Attempting to ensure that no further damage was done to the site by road-building and deliberately avoiding the associated cemetery and middens where burials were thought to be located, we excavated surviving midden deposits in the oldest part of the village in July 2010. Contrary to oral testimonies, this fieldwork documented at least two phases of building activity and retrieved a significant quantity of glass beads and pottery, now being examined by Gavin Whitelaw (Natal Museum).

Earlier archaeological projects in Lesotho, including those associated with the Lesotho Highlands Water Project and the Maloti-Drakensberg Transfrontier Conservation Area, paid little attention to involving local communities and left little legacy by way of sustainable capacity in archaeology and cultural heritage. In contrast, both themes have been and remain central to our work, which has provided fieldwork opportunities for students of Lesotho’s National University, as well as a significant level of training in excavation, survey and site recording techniques to senior Basotho members of our field team, many of whom have also presented our fieldwork and wider

Fig. 3: Ha Makotoko at the close of excavations in 2010 (copyright Jess Meyer)

Fig. 4: Detailed view of the north-facing section through the LSA and MSA deposits at Ntloana Tsoaana (copyright Jess Meyer)

heritage issues to visitors, school groups and national print and television media. Over the remainder of the MCRM Project, including a final season of excavation in 2012 before the impoundment of the Metolong Dam begins, we intend to continue these efforts. At the same time, we are seeking other ways through which to enhance knowledge of and Basotho participation in recovering the millennia-long history of southern Africa’s mountain kingdom.
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Fig. 5: Ha Makoanyane, 12\textsuperscript{th} December 2009, as seen from a helicopter looking south-west across the lower ruins showing the new road and the location of Trench 1