New Discoveries at Old Sites: The Legacy of J. Desmond Clark in Karonga, Malawi

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Abstract

In the 1960s and 1970s J.D. Clark and his students located several significant archaeological sites in Malawi, including an entire landscape of Middle Stone Age (MSA) materials in the northernmost district of Karonga. One of these, referred to by Clark as Chaminade 1A, yielded an assemblage of nearly 25,000 stone artefacts and several specimens of worked ochre from an *in situ* deposit. However, the site has never been absolutely dated, the ochre and stone artefact assemblages have not been thoroughly analysed, and in the years since Clark's excavation, its exact location has been lost. In 2012 a site named Bruce was discovered in Karonga that had several outstanding qualities: 1) more than 18 pieces of red pigment were found on the modern land surface, with nearly half of the assemblage displaying clear human modification; 2) the raw material diversity shows a high proportion of less common stone types, such as silcrete and chert, in addition to the quartz and quartzite that otherwise typify the area's assemblages; and 3) Levallois technology dominates the surface assemblage and artefacts are often found to be heavily reduced, despite immediate abundance of raw materials. Historical research and local informants from Karonga suggest that Bruce is actually the same site as Chaminade 1A. Considering the importance of ochre in recent MSA research and the large quantity of artefacts recovered by Clark from *in situ* deposits at Chaminade 1A, finding the site again has strong historical and scientific significance. The site shows repeated, intensive MSA occupation of a floodplain environment in which a range of raw materials and lithic reduction strategies were used. This new work updates Clark's legacy in Karonga, integrating it into a larger picture of the range of human adaptation during the MSA of central Africa.

Chaminade 1A

The Chaminade 1A site was excavated in 1965 by Van Eggers and published by J Desmond Clark as part of a series of papers on the Karonga area of northern Malawi (Clark et al. 1970, *Quaternaria* 13: 305-354; Figure 1). Although the excavations went in some cases as deep as 5.7m, the majority of artefacts were recovered from the uppermost ca. 1.5m of "Chitimwe sands".

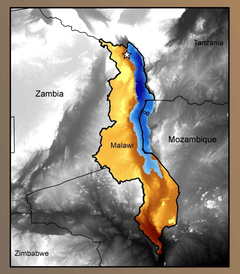

Figure 1 Location of study area near the town of Karonga (star) in the Karonga District, northern Malawi.

The Chitimwe Beds are Middle to Late Pleistocene alluvial and fluvial deposits containing abundant Middle Stone Age (MSA) artefacts (Figure 2).

Figure 2 MSA artefact-bearing Chitimwe Beds are shown in orange. Topographic data are SRTM data.

Clark reported the recovery of 24,551 artefacts and several ochre pieces from three "concentrations" in a 42 m^2 excavation at Ch-1A (Figure 3; Figure 4).

The Ch-1A assemblage is currently curated at the Stone Age Institute in Bloomington, Illinois.

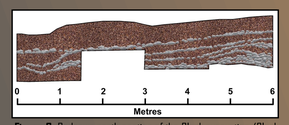

Figure 3 Redrawn north section of the Clark excavation (Clark et al. 1970: 338) showing pebble stringers in sand matrix.

Figure 4 A plaque of ground ochre from the Ch-1A site.

Bruce

During 2012 survey by the Malawi Earlier-Middle Stone Age Project (MEMSAP) a site near a spring was located and nicknamed "Bruce". The surface exhibited a depression suggestive of a previous excavation, with mounds that could represent spoil heaps from the 1960s (Figure 5) and very large numbers of surface artefacts (Figure 6).

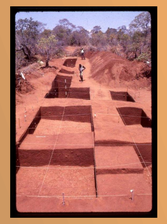

Figure 5 Photograph of the excavations in progress in 1965. Provided courtesy of Kathy Schick and Nicholas Toth at the Stone Age Institute.

Figure 6 Surface artefact plots superimposed on an image of the site (right). Surface artefacts were only fully plotted in a 5 x 15m area and remain as dense on the upper part of the hill. The purple box is the extent of the Area I excavation, and the numbered yellow circles are OSL sample locations.

Comparison of the location with a map provided by C.V. Haynes in 2010 showed that given the scale of the map Bruce falls within a 100m error range of Ch-1A (Figure 7). Discussions with local residents (Figure 8) and examination of the surface topography (Figure 9) showed a badly eroded landscape that matches well with the description of Ch-1A. Unfortunately, the last 50 years have not been kind to the site.

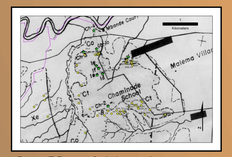

Figure 7 Georectified photogeologic map showing location of Ch-1A. Clark sites are green stars and MEMSAP excavations are yellow dots.

Figure 8 Karonga Museum Manager Winston Magumbwa compares the skyline to a printed photograph from the Stone Age Institute and describes his experience walking through the site while it was being excavated in 1965.

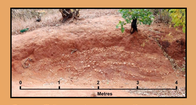

Figure 9 Exposed section at Bruce showing similarities in sedimentary deposits to the Clark profile.

Surface Finds

In spite of no availability of cobbles within several hundred metres of the site, the surface was strewn with thousands of stone artefacts (Figure 10) on a diversity of raw materials (e.g. quartz, quartzite, silcrete, and fossil wood). A 5 x 15m area was selected for plotting all surface finds, and produced 3888 artefacts. A random sample of quartzite artefacts showed that most were fine-grained, 93% were in a very fresh or fresh state, and there was a low proportion of cortical flakes relative to excavated assemblages in the area. Levallois and blade technology was represented better than in other parts of the Karonga landscape. These factors suggest the site was visited repeatedly and reduction of stone for tools from potentially disparate sources took place.

Figure 10 Surface artefacts showing fine-grained quartzite, laminar elements, and heavily reduced radial elements.

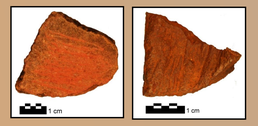

Figure 11 Example worked ochres from the surface of Bruce showing grinding (left) and incising (right). Note that the incisions in the artefact at left are recent.

Surface finds also included eighteen pieces of red ochre (Figure 11). Eight exhibited unambiguous evidence of modification including convergent facets, flat ground surfaces, knapped flakes, and incisions. All of the modified pieces exhibit fine sand or smaller particle size. Our experiments and ethnographic interviews in Karonga have found that fine-grained and relatively uniform particle size ochres generally require less effort to grind into powder than ochres with larger particles sizes, which suggests this was also a preference at Bruce.

Excavations

Three 1 x 2m Areas were excavated by natural stratigraphy or 5cm spits (Figure 12), and water-sieved. Two Test Pits were excavated in 20cm spits and dry-sieved. Latrine pits newly dug for a nearby house were also mapped and sampled (Figure 13).

Figure 12 Area II of MEMSAP excavations showing over 1m of intact alluvium with artefacts concentrated near the base (arrow).

Figure 13 Google Earth satellite image (October 2012) showing locations of excavations, interpolated elevations, excavation Areas (yellow), Test Pits (green), surface collection area (orange), and latrine pits (purple). The spring is indicated in blue.

Geoarchaeology

Fine-grained alluvium capped a series of fluvial deposits, which overlay more alluvium. Redox features caused some colour variation in the sediments. Both the surface and subsurface base of the capping alluvium were found to slope steeply to the north, towards the modern Rukuru River and near a modern spring (Figure 14). Across the site the majority of excavated finds were located within the lower ~20cm of this alluvial unit (Figure 15).

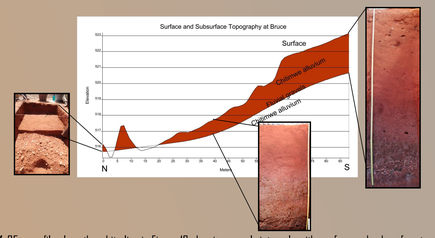

Figure 14 85m profile along the white line in Figure 13 showing sample intervals with surface and subsurface topography.

Figure 15 Impregnated slab from a latrine pit profile showing the nature of the transition from coarser to finer sediments. Most finds across the site are in the alluvium just above the coarser gravels.

Geochronology

Four luminescence samples were analysed from the section of a natural erosion feature in the southern part of the site (Figure 16). Although all samples pre-date the surface finds, the geomorphic context suggests recent deflation onto a surface dating to at least 100 ka (Figure 17).

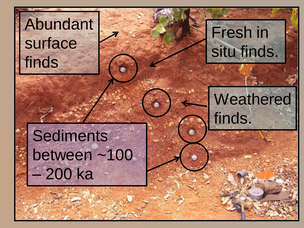

Figure 16 OSL sample locations relative to surface finds (left). Note the similarities in the pebble horizons to Clark's original profile (right).

Figure 17 Preliminary IRSL ages suggesting that the alluvium containing recovered artefacts is older than 100 ka.

Discussion

Given the absence of local cobbles and the presence of worked ochre it seems unlikely that Bruce was simply another retooling location in a raw material-rich landscape, but was rather a particular, repeated locus of human activity potentially centred on the spring. If Bruce is Ch-1A, then it has suffered much from both archaeologists and development since its relatively recent exposure and increasing development is a strong threat. Future work will include:

- Deepening existing excavations to explore the strong possibility of stratification and obtain more samples.
- Renewed outreach and conservation efforts to prevent further site damage.
- Lithic and ochre analysis, including geochemical characterisation.
- Revisiting the large original Ch-1A assemblage at the Stone Age Institute.

Acknowledgements

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