indicate few differences between sites associated with Mode 1 and Mode 2 technologies. This is a useful conclusion and should be borne in mind when discussing old debates such as the Clactonian v. Acheulian.

Overall, the author should be congratulated for drawing together an impressive range of data, although this has to be balanced against the inclusion of some dubious sites and occasional errors in information. The methods used are also interesting and with better quality control could form the basis for future analyses. The twilight world of Pleistocene Europe is not an easy place to walk, but this author has survived, albeit not unscathed.

Nick Ashton

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HARDAKER, T. 2011. NEW APPROACHES TO THE STUDY OF SURFACE PALAEOLITHIC ARTEFACTS: A PILOT PROJECT AT ZEBRA RIVER, WESTERN NAMIBIA. OXFORD, BAR INTERNATIONAL SERIES 2270. ISBN 9781407308449 (PB 244 PP, ILLUSTRATED THROUGHOUT, COLOUR & B/W)

This book is a report on the work of the Namibia Palaeolithic Field Research Project (NAMPAL often written as Nampal) from its inception in 2002 to 2010. Focusing on the Zebra River region of Namibia the project aimed to identify areas of surface material suitable for more detailed study. Hardaker’s goals are commendable, I feel sure the sheer quantity of stone tools now on the surface in Africa far outweighs that discovered in excavations the world over, and he is virtually unique in trying to establish methods for tapping this invaluable resource (although see Markofsky & Bevan 2011; Underhill 2012).

The report is divided into six sections, following the preliminaries, covering the landscape, archaeological overview, analytical methods, fieldwork studies, interpretation of the finds and conclusions; although in reading the report feels like it is in two different parts, background and methods, and data and interpretation. In fairness Hardaker does acknowledge this and points to the problem of ordering complementary narratives, something that is an issue in work that demands detailed background knowledge from the reader, and additionally develops new methodologies. However, the supply of this necessary background information is actually scattered throughout the work, often after it has already been invoked as justification for important conclusions, including the entire description of a clast movement experiment that is not detailed until page 141, half way through the interpretation section. More problematically Hardaker makes important but sweeping claims whilst not presenting any justification for several pages. The later division of data and interpretation seems ill advised, creating confusion and enhancing the appearance of circular arguments.
The initial chapter is a thorough review of the geology of the area, dense and in all somewhat unnecessary dealing with periods far earlier than those at issue here. Additionally, the use of uplift as the sole explanation for the ‘terrace’ present along the Zebra river is perhaps oversimplifying a very complex issue (see Pelletier 2010). The soil history, which is of most interest when establishing artefact provenance, is merely cross-referenced to the section five of the book where it is not fully addressed. In his own words Zebra River is a ‘net deflation region’ (p.140), yet Hardaker seems convinced that soil cover has been at its present state throughout the landscape evolution and never adequately addresses the issue, viewing stratigraphy as a ‘mask of superficial deposits’ (p.137). Additionally I would highlight that one cannot simply apply established climate chronologies to this region of Africa, it is under the influence of several factors that make simple equation with northern hemisphere fluctuations impossible (see Beal et al. 2011; Williams et al. 1974; etc.).

Whilst it is admirable that Hardaker attempts to describe the terminology he has employed (confusingly presented in section two), his logic for how he has devised it is most perplexing. His focus is on semantics and he doesn’t clearly justify his artefact terminologies. More worrying are factual errors, for example he attributes the Sangoan and Lupemban to the transition between the late MSA and LSA (p.188), rather than the ESA to MSA as all the evidence suggests, and his description of certain known artefact types are just plain wrong (i.e. Victoria West). Supplemental to this I have never come across any evidence to suggest that ‘Levallois tools would clearly be suitable for … softening or pummelling fibre’ (p.169). Further, to this analyst at least, many of the artefacts presented appear to have been mis-interpreted, most notably in the creation of an entirely new MSA typology, the ‘Elongated Core Handaxe’ (ECH).

Although providing no evidence for his claim Hardaker describes the term ‘rough out’ as a ‘dustbin’ expression and lists nine methods of distinguishing between a ‘rough handaxe’ and an ECH, yet these methods actually describe handaxe rough-outs? It is clear, even from the pictures presented, that ECH’s are rough-outs, defined by a lack of evidence for the thinning and shaping needed to produce a handaxe (McNabb 2007: 329). Continuing to examine the figures presented I can see no real difference between the ‘rough bifaces’ and ECH’s, and some ECH’s appear to have been manufactured on flake blanks, so are not core tools of any form. This latter point might be explained by the erroneous denial of plano-convex handaxes (p.152), many of which are evident in figures throughout the book. Taking this to the extreme Hardaker introduces Hybrid ECH’s with pointed tips, and his whole explanation for their presence is simply bafflingly. While clearly stating that they were not cutting tools (p.150) he envisages early MSA knappers as unable to produce a Levallois flake with a straight edge, instead attempting to relearn how to make bifaces to supply a straight cutting edge. A further peculiarity in relation to this is the attention paid to the Kapthurin Formation and the European MTA as precedents for handaxes in the MSA, yet he later (p.171) selectively ignores the blades that have been discovered in the ESA. Indeed throughout the study no distinction is made between flake blades and technical blades, with the group appearing to contain both.

Despite Hardakers explanations I am still left somewhat perturbed by statements such as ‘elongated core handaxes of MSA style’ (p.54). The gravity of this issue is revealed when at ND4, despite the presence of what most analysts would call handaxes, Hardaker describes a ‘lack of Acheulean material’ (p.41) and states that the site ‘clearly represent an in situ MSA assemblage’ (p.101). I would suggest that the artefact list presented, and several others, seem akin to reported Fauresmith sites (although see Underhill 2011 & 2012) an industry that is only mentioned in passing; surprising given the proximity of some Fauresmith locales and their existence as primary surface scatters. Indeed the issue of transitions is never sufficiently examined.

To continue the uncertainty in artefact descriptions no evidence is presented for the claim that the tool produced from ‘flat top’ levallois cores is less effective than an ordinary levallois flake (p.165), and how would we tell them apart? No evidence is presented to suggest the cores were less
effective either. He assumes that virtually all detached flakes were tools, whether worked or not, ignoring the fact that the vast majority of flakes discovered in the Stone Age are simply waste (i.e. Bradley and Sampson 1986; Kvamme 1997; etc.). I would also question the attribution of soft hammer knapping; it is hard enough to be sure of this attribution on fresh flint flakes (see Andrefsky 2005: 119; Kooyman 2000: 80–81) never mind worn quartzitic sandstone cores, and the pieces presented in Fig 4.10A show no obvious signs of soft hammer manufacture leaving me unsure as to exactly what is qualifying this description. More confusion is evident in claims that standardised tools were made ‘at leisure’ (p.165) with less standardised ones being the result of some ‘random’ mind set (p.165), which is later contradicted with pre-sapient hominids not given time for anything but survival (p.169). Unfortunately, Hardaker goes further, suggesting that because ESA and MSA individuals lacked the intellect bestowed upon LSA peoples they were able to pursue a more efficient economy (p.168). This seems guided by Hardakers belief in mental templates wholeheartedly ignoring the reams of literature published on this problem.

Section three introduces new methods developed by the study but does not always present them with sufficient information or clarity to enable the reader to truly understand them. Focus is clearly on presenting the ‘Edge Test’, a method for measuring and quantifying artefact wear; a principle this reviewer agrees with wholeheartedly. The digital technique presented seems sound, but we are left with no details as to the programs ‘automated process’ (p.29). Hardaker does well to identify the potential pit falls and limitations of the test but I can’t help but feel the whole thing has been overcomplicated as the same result can be achieved by simple application of two straight edges (Underhill 2012).

The next section of the book begins to detail the actual bones of the study being some 60 pages of site descriptions. Given Hardakers profession as a cartographer I expected better use of maps, those presented, which is not even for every site, are often badly labelled or of such scale as to given little if any clue to local environs or exact settings, having to rely on the somewhat wordy descriptions. It is even more confusing given the detailed use of satellite images in site identification that simple aerial/satellite images where not more successfully employed to help elucidate site conditions rather than regional location, perhaps most notably in description of the lakes at UR2 (p.93). I would also add that the claims for near completeness of the record are spurious, the idea that the ‘contemporaneity between flakes and … classic Levallois is questionable’ (p.188) forgets that flakes are produced in the manufacture of Levallois cores, the apparent absence of any detrital knapping waste denies the claims being made about complete and in situ suites of material.

In terms of interpretation the appeal to processual explanations of change and a reliance on poorly understood assumptions concerning population movement, coupled with a lack of detailed references informing the formulation of hypotheses further reveals a worrying naivety, as does the invocation of the Movius line (p.167), and denial of Allometric variation without ever referencing it or citing a single author. Unfortunately there is an enormous overuse of straight imagination, with very little recall to facts and many phrases such as ‘surmise’, surely’ and ‘assuming’ accompany enormous and spurious conclusive leaps away from the data. More worrying is the selective use of data; when testing the validity of cross-site comparisons (p.113) everything is done to avoid invoking age as a contributory factor in the increased edge rounding at ZR5, despite using the same data to argue for contemporaneity elsewhere. Additionally, rather than explaining the absence of evidence for a hiatus between MSA and LSA material, as discovered in controlled cave excavations nearby (Gail’s Cave), Hardaker simply explains it away (p.113). When presented with data to suggest Levallois utilising hominids occupying a site long after blade manufacturers (p.130–131) or Acheulean material being younger than Levallois (p.131–134), little is done to try and answer the obvious issues of technotypological chronology as presented elsewhere. I find these particular results hugely problematic for Hardakers explanations, but again they are explained away and attention moves on. The latter half of section five is riddled with contradictions of
earlier statements used to bolster opinions, I am left unsure that Hardaker has a clear understanding of the material he is describing; better structure might have aided him to piece this together more succinctly.

As laid out section 5 becomes enormous and unwieldy, some 90 pages. However, the section initially presents a hypothesis of environmental change that defines the entire study followed by more methodology, both belonging in earlier sections! To add to this there is a lack of consistency in artefact presentation, picture focus is an occasional issue but the quality of the cropping is more so, often deleting edge detail. Additionally, there isn’t a consistency in artefact orientation, or explanation for displaying only one face of certain artefacts, often just the ventral face. Add to this clearly mislabelled figures, a lack of careful proof reading and inaccurate cross referencing and a lot of this work becomes hard to follow. Unfortunately, this general lack of clarity robs the work on several levels.

Ultimately this work is of some use to professionals working in the region, but is not for the feint hearted. It is real shame that I can have no confidence in Hardakers artefact descriptions and ‘cultural’ designations because his data does have the potential to reveal enormous amounts concerning site distributions and landscape use. However, whilst inexplicably denying some accepted wisdoms he remains too open to simply believing others with no real critical considerations, an unfortunate naivety that undermines everything that Hardaker has achieved and presents a much romanticised view of Stone Age archaeology. I truly hope Hardaker achieves his primary aim of trying to move forward discussions of surface studies in Stone Age archaeology, undertaking any work on this complicated but vitally important issue is as difficult as it is admirable.

David Underhill

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