Southern African Field Archaeology **11 & 12**:64-67. 2002/2003

SUPERFICIAL COMPARISONS AND REALITY: A REASSESSMENT OF DUNEFIELD MIDDEN AND THE SWARTKOP INDUSTRY

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ABSTRACT

The flaked lithic assemblages from two late precolonial sites, Swartkop 1 and Dunefield Midden, are presented and compared showing points of similarity and difference. Specifically, Dunefield Midden is shown, on technological grounds, not to represent an example of the Swartkop Industry. The paper corrects statements made by myself in an earlier publication, and serves as a warning to others regarding the comparison of apparently similar assemblages without a deeper analysis of their true character. An appeal to authors to be careful with regard to their choice of terminology when presenting general summaries of research is also made.

INTRODUCTION

In a recent article (Orton 2002) I likened the lithics from the more recent occupation of Dunefield Midden (DFM), located at Elands Bay on the west coast of the Western Cape (see Orton 2002), to the Swartkop Industry of the Northern Cape interior (Fig. 1). An analogue for the extremely unique DFM lithics was being sought, and based on the limited information available (Beaumont *et al.* 1985, 1995; Beaumont & Vogel 1989; Morris 1990), a comparison with the Swartkop seemed significant. Unfortunately, very few details pertaining to the Swartkop lithics are provided in the literature, and as a result, hindsight showed these to be quite inadequate. In addition, some of the terminology used was misleading, and, as it turned out, not always technically correct. However, with the recent standardisation of terminology, it is now possible to correct these problems.

Subsequent to the publication of the article, and owing to the requirements of further research into the DFM lithics, I travelled to Kimberley and undertook an analysis of the Swartkop 1 assemblage (Fig. 1), which is regarded as the typesite of the Swartkop Industry (Morris & Beaumont 1991, Table 5). Upon opening the box of lithics, one could tell that the two assemblages were technologically quite different, an interpretation that was supported by the analysis.

BACKGROUND

The initial comparison was stimulated by the seemingly very high frequencies of backed artefacts commonly found in recent Northern Cape assemblages (*e.g.* Smith 1995; Webley 1992). Such artefacts are seldom seen in comparably aged assemblages from the Western Cape. The similarities between DFM and the Swartkop included the overwhelming dominance of backed elements among the formal tools, the presence of pottery and the similarly recent dates. Furthermore, I had misunderstood an unclear reference to raw materials (Morris 1990:39) that has since been clarified by the author. Swartkop sites are usually dominated by hornfels (Beaumont, pers. comm.) with quartz also occurring frequently. However, the proportions are variable, presumably relative to what is locally available near each site (Morris, pers. comm.).

An ostrich carbonate date of 670 ± 50 BP (Pta-4106) is available from the two spits excavated at Swartkop 1 (Beaumont *et al.* 1995). After applying a correction of approximately 180 years (Vogel *et al.* 2001) the date represents a possible age of c. 490 ± 50 BP. DFM has 28 radiocarbon determinations on *in situ* charcoal and marine shell, all from the single occupation layer. After the appropriate marine corrections, they average about 650 years old with 24 of them falling between 600 and 700 BP (Orton, in prep.). This dates both assemblages similarly, placing them in the late pre-colonial period.

TERMINOLOGY

Earlier published accounts upon which I had previously relied had used the unqualified generic term "blade" for both blades and bladelets, thus leading to a further source of confusion. The two terms inherently refer to different sized artefacts and it is important that the distinction be made clear. Although earlier defined slightly differently

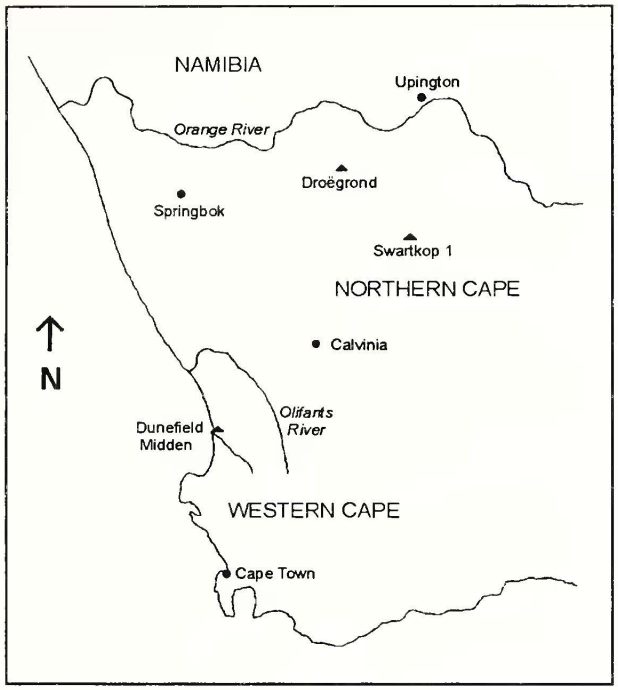

Figure 1 Map of the north-western and western parts of South Africa showing the locations of the sites mentioned in the text.

(Deacon 1984), current standard usage (*e.g.* Mitchell 2002) suggests that blades and bladelets should have a length:breadth ratio ≥ 2, with the former having a length > 25 mm and the latter 25 mm or less. These definitions are employed here.

Another terminological issue relates to the use of the word 'industry'. The issue arose out of Smith's (1995:300) suggestion that Droëgrond epitomised the Swartkop Industry. However, he is referring to the fact that it contains many retouched tools rather than to the technology employed, the idea being to distinguish between a set of probable 'hunter' sites at which many tools were made (Swartkop Industry) and another set of probable 'herder' sites with few tools (Doornfontein Industry) (Smith, pers. comm.). Perhaps 'economy', 'socio-economy' or even 'lifeway' as applied by Parsons (2003), should be used in this sense with 'industry' being retained for references to lithic technology only? The tools at Droëgrond are very small with quartz being the primary raw material (Smith 1995) suggesting again that the technology employed is quite different from that at Swartkop 1. Further discussion on his point follows below. In addition, I would like to suggest that a concerted effort be made among Later Stone Age researchers to qualify synoptic terminology used in publication (and elsewhere) such that a clear picture might always be presented to the reader. Most archaeological terms have inherent meaning and when used in incorrect contexts, preconceived ideas are frequently engendered with the result that the intended interpretation can be unintentionally altered. While it is acceptable to use generic terms, consideration should be given to the context so as to avoid confusion.

Table 1. Frequency of lithic artefacts by category (%).

	Swartkop 1	DFM
Debitage & cores	93.15	97.13
Edge-damaged	3.96	0.56
Formal tools	2.89	2.31
Total	100.00	100.00

Table 2. Frequency of formal tools by category (%).

	Swartkop 1	DFM
Backed	84.93	84.33
Scraper	1.37	6.67
MRP	13.70	8.67
Other	0	0.33
Total	100.00	100.00

ASSEMBLAGE COMPARISON

Following my re-analysis of the Swartkop 1 assemblage, presentation of selected data would still indicate broad similarities with DFM (Tables 1 and 2). However, when the categories in Table 1 are divided into their constituent classes the picture changes significantly (Table 3) with two seemingly very different industries having produced each assemblage. The core and debitage frequencies in particular are indicative of a very different mode of production. At Swartkop single platform cores were used to produce high frequencies of relatively large blades and bladelets while at DFM bipolar flaking resulted in many more flakes than bladelets. The latter assemblage also strongly reflects the large quantities of chips that the bipolar technique typically produces. Clearly, the single platform cores at Swartkop were very much more productive than the DFM bipolars, hence the smaller frequency of cores at that site – a situation certainly resulting directly from the size and nature of the available raw materials in each case. Although unquantified at DFM, the edge-damaged class there consists mostly of relatively small flakes, while at Swartkop only 54% are flakes with 43% being blades and 3% bladelets.

The raw materials are also very different (Table 4) and one might argue, quite correctly, that the particular materials used at each site enforced certain constraints on artefact manufacture. However, with Orton (in prep.) demonstrating that other materials were certainly available within reasonable proximity of DFM, there must certainly have been a conscious selection of quartz as the primary raw material there. Judging by the raw material frequencies at Droëgrond (Smith 1995), the same is likely to be true there. Conversely, at Swartkop 1, quartz appears to have been deliberately avoided. All formal tools and edge-damaged pieces are made in the dominant material in each case. It should be noted that, although untested geologically, are the pieces made in the dominant material in each case. It should be noted that, although untested geologically, the CCS in the case of Swartkop 1 is chert rather than the typical chalcedonic nodules which frequently occur in many sites. The retouched artefacts at the two sites differ

Table 3. Frequency of lithic artefacts by class (%, n given in parentheses for formal tools).

	Swartkop 1	DFM
Bipolar cores	0	3.55
Single platform cores	0.75	0.07
Irregular cores	0.04	0.09
Chips	8.86	65.59
Chunks	6.05	14.97
Flakes	61.30	12.09
Blades	9.06	0.03
Bladelets	7.08	0.75
Backed blades	0.28 (7)	0
Backed bladelets	1.94 (49)	1.47 (162)
Backed flakes	0.12 (3)	0.33 (44)
Miscellaneous backed	0.12 (3)	0.11 (14)
Adiagnostic backed	0	0.05 (7)
Endscrapers	0.04 (1)	0.01 (1)
Sidescrapers	0	0.04 (5)
Misc. backed scraper	0	0.02 (2)
Miscellaneous scraper	0	0.06 (8)
Adiagnostic scraper	0	0.03 (4)
Chopper	0	0.01 (1)
Misc. retouched piece	0.40 (10)	0.20 (26)
Edge-damaged	3.96	0.56
Total	100.00 %	100.03 %

significantly. Swartkop 1 contains just a single, fairly large scraper, while DFM shows an assortment of different types with all being very small. Differences in the backed artefacts are considered in greater detail in a separate section below.

A distinct point of similarity that is shown by Tables 3 and 4 relates to the incredibly expedient nature of both assemblages. The extreme focus on a single raw material and a single reduction technique in each case and the desire to produce large numbers of backed blades and bladelets suggest that a particular function was intended for the tools produced at each site.This does not imply that similar activities were carried out at each site, although microwear studies might help to interpret artefact functions.

THE BACKED BLADES AND BLADELETS

Despite the focus on backing, a closer look at the backed blades and bladelets specifically, presents further distinctions. The backed bladelets at DFM are all small with none reaching blade proportions while those from Swartkop 1 are generally much larger and slimmer (Table 5). This seems to have been intentional on the part of the Swartkop tool makers since with the smallest unbroken backed bladelet being just 14mm by 3mm in dimension, they certainly had the ability (and the raw material) to manufacture such tiny pieces as are found in the DFM assemblage. The 43:3 ratio of blades to bladelets among the Swartkop 1 edge-damaged artefacts as mentioned above further supports the notion that larger pieces were desired.

Parsons (2003) uses a microlithic index (MI) to gauge artefact size: microlithic artefacts have an area < 200 mm^2

Table 4. Raw material frequencies (%).

	Swartkop 1	DFM
Quartz	0.16	97.86
Chert	99.17	0
Quartzite & Sandstone	0.12	1.93
Other	0.55	0.22
Total	100.00	100.01

Table 5. Size of backed blades and bladelets (mm).

	Swartkop 1 *	DFM **
Total unbroken backed blades and bladelets	10	29
Mean breadth	6.70	5.98
Minimum (breadth)	3	4.4
Maximum (breadth)	12	8.5
Mean length	24.60	15.28
Minimum (length)	14	10.1
Maximum (length)	35	20.6
Mean Length:breadth ratio	4.28	2.73
Minimum (L:B ratio)	2	1.41
Maximum (L:B ratio)	8	3.5

* Measured to the nearest mm
** Ref.: Orton 1998, measured to the nearest 0.1mm

Table 6. Area statistics for unbroken backed blades and bladelets.

	Swartkop1	DFM
Minimum area (mm^2)	42	54.39
Maximum area (mm^2)	420	170.00
Mean area (mm^2)	175.60	93.35
MI (%)	70.00	100.00

while macrolithic artefacts are > 200 mm^2 with the percentage of microlithic artefacts being the MI. Note that this value represents the product of the maximum length and breadth and as such is not strictly the true artefact area. The imprecision of my measurements (to the nearest mm) resulted in one example of exactly 200 mm^2 and it was unclear from Parsons (2003) whether this piece should be micro- or macrolithic. I have here assumed it to be the former. In the current study only formal tools were measured and some area data for all unbroken examples are given inTable 6. Following Parsons (2003), these data are presented graphically in Figure 2. Both assemblages exhibit a high degree of breakage among the backed tools but considering the significantly higher ratio of unretouched blades to bladelets at Swartkop 1 (1.27) when compared with DFM (0.04), it seems certain that the Swartkop data in Figure 2 should be even more negatively skewed than they already are. Overall, the data suggest that the Swartkop backed blades and bladelets are far more variable, and generally much larger than the backed bladelets from DFM.

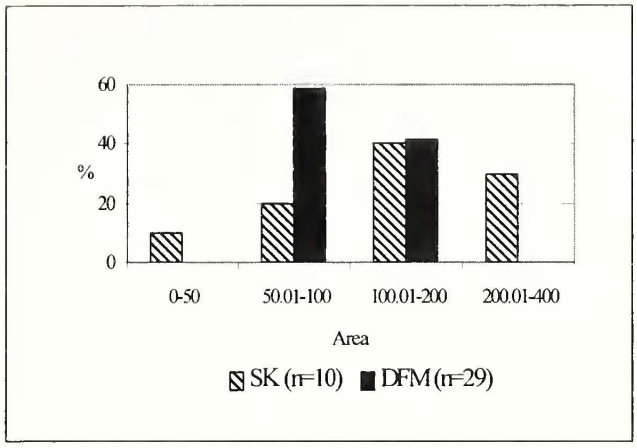

Figure 2 Area of backed blades and bladelets in mm².

CONCLUSIONS

The lithic assemblages from Dunefield Midden and Swartkop 1 are compared. It is quite clear that the former assemblage does not represent a manifestation of the Swartkop Industry, of which the latter site is said to be the type site. The comparison has shown that accurate characterisation of a lithic assemblage from limited numeric data and general descriptions alone can be very difficult and unreliable in the absence of visual aids, either in the form of scale drawings or a physical examination of the material in question. It should be stressed that summary descriptions can reflect a very different picture to the detailed class by class breakdown employed here, and in addition, the use of non-specific, unqualified generic terminology in such descriptions can be misleading. Researchers should, therefor, be wary of drawing conclusions from such data without first clarifying what is being presented.

So what then, technologically, does DFM represent? It seems likely, if not certain, that a specific activity requiring backed bladelets was planned for the time during which DFM was occupied. Backed bladelets seem most likely to have been used in composite cutting tools (Barham 1992), and with at least three to six eland being present at DFM (Nilssen 1989), it is possible that we are looking at a kill and/or butchery site. Two lithic assemblages very similar to that from DFM have recently been excavated on the Northern Cape coast (Halkett 2003) and it is hoped that forthcoming research into these new finds will help to shed some light on this mystery.

ACKNOWLEDGEMENTS:

Royden Yates initially drew my attention to the existence of the Swartkop Industry. David Morris very kindly provided access to the Swartkop 1 material and workspace at the McGregor Museum, Kimberley. He also tracked down and provided one of the references. John Parkington and David Morris examined an earlier draft of the manuscript, and very useful comments leading to meaningful revision of the paper were provided by a referee.

REFERENCES:

Barham, L.S. 1992. Let's walk before we run: an appraisal of historical materialist approaches to the Later Stone Age. South African Archaeological Bulletin 47:44-51.

Beaumont, P.B., Morris, D. & Vogel, J.C. 1985. The chronology and context of petroglyphs in South Africa. Paper presented at the South African Association of Archaeologists Conference, Grahamstown.

Beaumont, P.B., Smith, A.B. & Vogel, J.C. 1995. Before the Einiqua: the archaeology of the frontier zone. In: Smith, A.B. (ed.) Einiqualand: studies of the Orange River frontier: 236-264. Cape Town: University of Cape Town Press.

Deacon, J. 1984. The Later Stone Age of Southernmost Africa. Oxford: British Archaeological Reports International Series 213.

Halkett, D. 2003. A report on the archaeological mitigation program at De Beers Namaqualand Mines March 2002 to June 2003. Archaeology Contracts Office, University of Cape Town.

Mitchell, P. 2002. The archaeology of Southern Africa. Cambridge: Cambridge University Press.

Morris, D. 1990. "Etchings" and "intaglios" in the Upper Karoo. In: Beaumont, P. & Morris, D. (eds) Guide to archaeological sites in the Northern Cape: 232-258. Kimberley: Mc-Gregor Museum.

Morris, D. & Beaumont, P. 1991. !Nawabdanas: archaeological sites at Renosterkop, Kakamas District, Northern Cape.

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. Unpublished Honours project: University of Cape Town.

Orton, J.D.J. 1998. Patterns in Stone: Understanding the Lithic Assemblage of a Western Cape Later Stone Age Campsite. Unpublished Honours Project: University of Cape Town.

Orton, J. 2002. Patterns in stone: the lithic assemblage from Dunefield Midden, Western Cape, South Africa. South African Archaeological Bulletin 57: 31-37.

Orton, J.D.J. (In prep.). The Quartz Conundrum. Masters Dissertation, University of Cape Town.

Parsons, I. 2003. Lithic expressions of Later Stone Age lifeways in the Northern Cape. South African Archaeological Bulletin 58: 33-37.

Smith, A.B. 1995. Archaeological observations along the Orange river and its hinterland. In: Smith, A.B. (ed.) Einiqualand: studies of the Orange River frontier: 265-300. Cape Town: University of Cape Town Press.

Vogel, J.C., Visser, E. & Fuls, A. 2001. Suitability of ostrich eggshell for radiocarbon dating. Radio-carbon 43: 133-137.

Webley, L.,E. 1992. The history and archaeology of pastoralist and hunter-gatherer settlement in the north-western Cape, South Africa. Unpublished Ph.D thesis: University of Cape Town.