Pressure-flaked backed bladelets and points: new artefact types in the Later Stone Age of Southern Africa.

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Introduction

As part of a project researching the Later Stone Age prehistory of the western lowlands of Lesotho, southern Africa, a test excavation was carried out at the site of Leqhetsoana. The purpose of this note is to draw attention to the presence in the Leqhetsoana lithic assemblage of several bladelets that display a hitherto unreported combination on a single artefact of pressure-flaking and backing. The possible cultural significance of these artefacts is discussed.

The site

Leqhetsoana (29.26S, 27.359E) is a large sandstone rockshelter located 1560m above sea-level in low cliffs on the south bank of the Koro-Koro River, a part of the Phuthiatsanaea-Thaba Bosiu drainage system of the western lowlands of Lesotho (Fig 1). Stone artefacts within the shelterand along its dripline, as well as a number of highly faded rock paintings, suggested that excavation might be profitable, but, because most of the site's interior consists of exposed bedrock or massive collapsed boulders, only a small area of deposit in front of one of these boulders was accessible. Between November 19th and 26th 1990 approximately 1 m² of this deposit was removed to a depth of 50 cm. The deposit was very hard, deeply penetrated by rootlets, partly truncated by stream action and devoid of stratigraphic subdivisions. It was heavily disturbed, with recent potsherds of Basotho type occurring throughout. No charcoal was found, but some bone was preserved and this has been analysed by I. Plug (in prep.). The bulk of the finds consists of stone artefacts.

The artefact assemblage from Leqhetsoana

The lithic assemblage exhibits a range of characteristics indicative of a recent Holocene age and is comparable to that from the interior excavation at Tloutle (Mitchell 1990) as well as to stone tool scatters found on the surface of numerous other rock-shelters in the area. Opalines (agates, chalcedonies and jaspers) are the dominant raw material used, with hornfels accounting for most of the remaining stone artefacts. While microlithic, the assemblage is overwhelmingly flake-, rather than blade- based. Bipolar flaking accounts for relatively few of the artefacts produced, and most cores are single platform and irregular in type. The percentage of formal

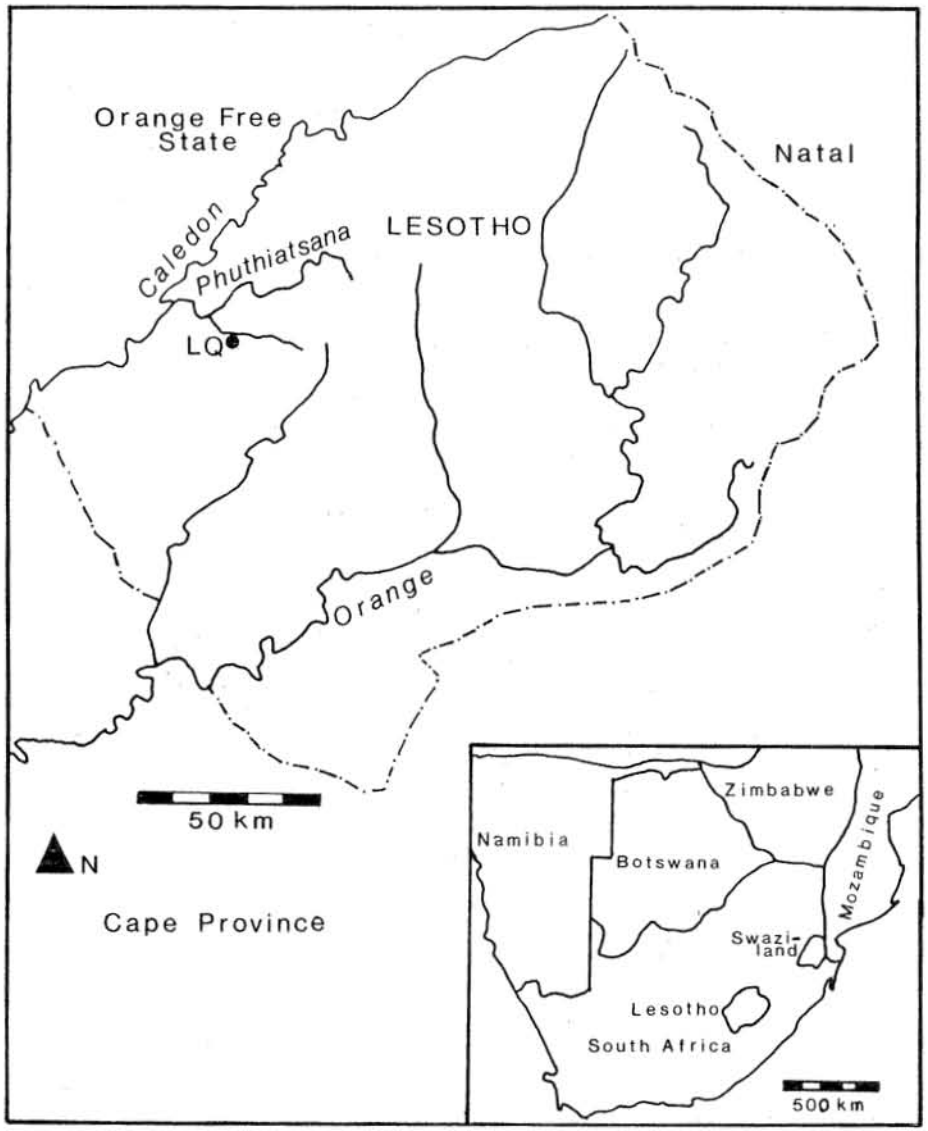

Figure 1: The location of Leqhetsoana within the western lowlands of Lesotho.

tools is high (5.5 %) and, while scrapers are by far the most common tool type, significant numbers of adzes and backed microliths also occur. The predominance of small scrapers (<20 mm in maximum dimension) and of backed bladelets and points relative to segments are among the features indicating a late Holocene age. The relatively high number of bone point fragments found (N = 13) is also consistent with an age estimate of <4000 BP; the possibility of obtaining a more exact date through AMS dating of one or more of these remains to be explored. A more detailed account of this and other late Holocene sites in western Lesotho is in preparation.

Pressure-flaked backed bladelets and points

Of the 29 backed artefacts found at Leqhetsoana, seven (24.1 %) exhibit a combination of backing with pressure-flaking that has not previously been reported from southern Africa. All these artefacts are bifacially worked, although pressure-flaking does not always extend over the entirety of both the ventral and dorsal surfaces. Three are points, three bladelets and one is of blade size (Fig 2). In all cases backing extends the full length of the

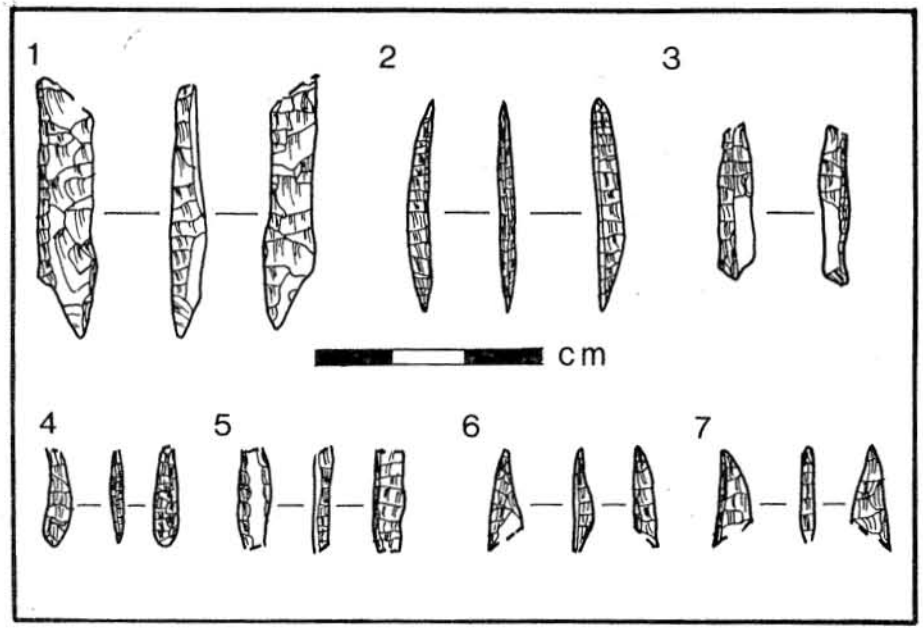

Figure 2: Leqhetsoana: pressure-flaked backed artefacts. 1-5 bifacial backed bladelets ; 6-7 bifacial backed points. All made in opalines.

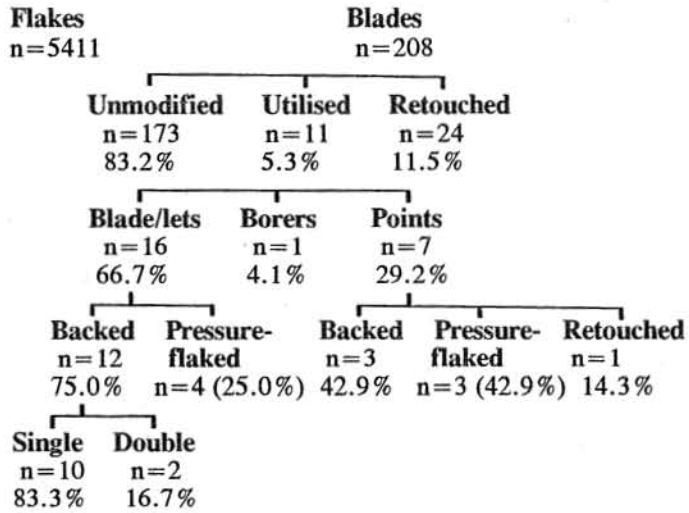

Figure 3: Leqhetsoana: stages in the production of pressure-flaked backed points and bladelets.

artefact and, in all but two cases where it has been applied to the sinister edge, it is the dexter edge that has been backed. Pressure-flaking is generally very fine and has been applied from both the backed and non-backed edges. The butt ends of all three points are preserved, and it is clear that none of them was barbed or tanged.

Only one of the artefacts (a point) is complete; it has a length of 26 mm. The remaining two points have their tips missing, while the bladelets variously have their tip and/or butt broken off. Mean width of all eight artefacts is 5.00 mm and their mean thickness 3.25 mm, emphasising the degree of control required to produce them. All the artefacts are made from opalines, which were the overwhelming choice for formal tool manufacture not only at Leqhetsoana, but in all other Lesotho Later Stone Age assemblages reported so far. Figure 3 illustrates the stages involved in the manufacture of these artefacts and the frequency of each successive artefact type in the Leqhetsoana assemblage. Clearly, very few of the bladelets produced were retouched, and only a fraction of these was selected for pressure-flaking. Although each stage is a precondition if its successor in the sequence is to be accomplished, there seems no reason to view those backed bladelets and points that are not pressure-flaked as rejected by

-products. Backed bladelets and points are widespread in the southern African Later Stone Age (especially after 4000 BP), and the examples from Leqhetsoana show no sign of even preliminary attempts at pressure-flaking; neither do they refit on to broken pressure-flaked specimens.

Discussion

Backed microliths are, in general, interpreted as the stone armature component of composite projectile weapons, specifically arrows. This is supported by rare instances where these artefacts have been found with mastic still adhering to them (Phillipson 1976), and where they form the cutting edge of arrows collected by nineteenth century ethnographers (Deacon 1984). Experimental evidence and microwear examination (Binneman 1982) suggest that segments, at least, may also have been hafted in series to give a knife-like cutting edge. While no comparable study has yet been carried out on the artefacts discussed here, it seems reasonable to expect that they were used for similar tasks. This leaves unanswered the question: why employ pressure-flaking at all, if other backed points and bladelets could be used without it?

In a recent paper addressing the evolutionary history of stone tool-working techniques, Hayden (1989, 14) has suggested that pressure-flaking is likely to have been used as a resharpening technique "only in very material-strained circumstances, or situations in which the constraints placed on the amount of material baggage [to be carried around by a group of people] are unusually pronounced." This is because the technique's advantages (such as economic use of raw material, capacity to produced constant edge- angles and reduced risk of artefact breakage) are finely balanced by the need for special tools for resharpening, proper shaping of the raw material and access to high quality raw materials, which often have higher transport costs. Torrence (1989, 63), contrasting North American Paleoindian and European Mesolithic lithic technologies, has argued that microlithisation may be an equally valid alternative to bifacial pressure-flaking in economising raw material use. Consequently, unless there is some functional need for armatures with very thin cutting edges, it seems unlikely that Hayden's arguments are relevant to a situation in which pressure-flaking and microlithisation are simultaneously employed. The limited use of pressure-flaking in southern African assemblages (see below) is also inconsistent with Hayden's position, particularly in the present case, since fine-grained opalines are widely available as stream cobbles throughout Lesotho. We must therefore look to alternative explanations.

Pressure-flaking is known sporadically from a number of Middle and Later Stone Age occurrences in southern Africa (e.g. at Ntloana Tsoana [Mitchell and Steinberg 1992]. However, only within the last two millennia does a class of pressure-flaked artefacts become a distinctive, if rare, feature of the subcontinent's archaeological record. Pressure-flaked barbed and

tanged arrowheads have been recovered from several open sites and rock-shelters across the central part of the southern African interior (Humphrys 1991), and a fragment of such a point forms part of the lithic scatter on the surface of a small painted shelter (2927 DA 11) 9 km to the south-east of Leqhetsoana. The few examples from stratified contexts are all associated with dates of <2500 BP (Carter and Vogel 1974; Humphreys 1991).

I have suggested elsewhere (Mitchell in press) that the distribution of these artefacts may coincide with that of a sociolinguistic group, perhaps at dialect level. Mazel (1989), in the Thukela Basin of Natal, and Deacon (1976), in the eastern Cape Province, interpret some aspects of spatial patterning in formal tool distribution at sites in their research areas in similar terms. Unless they are merely the idiosyncratic workmanship of a single individual, I should like to suggest that the pressure-flaked backed points and bladelets from Leqhetsoana may represent an analogous phenomenon, but on a more local scale, perhaps restricted to (part of) the Caledon Valley. If they are markers of emblemic style (Wiessner 1983), this might help explain their apparent rarity, while further examples should be found at other sites in the eastern Orange Free State and western Lesotho. The regionalization of material culture seen in the restricted distributions of artefacts such as pressure-flaked points is a noticeable feature of the last few millennia of the Later Stone Age record, and seems to have gone hand in hand with intensified exchange within and between regions. In this respect it may be significant that arrows are one of the most common items in hxaro gift-exchange relationships among present day Kalahari San (Wiessner 1983) and that pressure-flaked points provide some of the most convincing evidence for regionalisation.

Acknowledgements

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A Backed Bladelet with Impact Damage from Sleaford, Hampshire.

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This piece was found amongst the Wolmer Forest collection of flints made during the late 1940's to 1950's by Major A.G. Wade of Bentley, Hampshire, and now housed at the British Museum. The collection is mainly Early Mesolithic in date. This item, however, is provenanced to Sleaford rather than Wolmer Forest, and has a dull white patina unlike that of the rest of the collection. It is marked as having been found in 1953.

The piece, which is 40.5 mm long, 12.0 mm wide and 4.0 mm thick, has abrupt retouch along the whole of its surviving left margin (see figure). Its proximal end has been truncated by two major oblique spalls running parallel and adjacent to one another. There also appears to be several flexional splinters on the ventral surface at this end. The right margin is damaged along its entire length and terminates in an oblique fracture.

The pattern of damage, in particular the oblique burin-like spalls, suggests impact with a solid object (cf. Fischer *et al.* 1984, Barton and Bergman 1982). The fact that not one but several spalls have been detached, and the quite extensive damage to the left lateral edge would suggest that the impact was extremely powerful.

Dating of the piece has to depend upon typological criteria, and it does not fit comfortably into a Mesolithic context. Instead, it would seem more at home in a Late Glacial context, and similar examples have been found at the Late Upper Palaeolithic site at Hengistbury Head, Dorset (Barton 1992). The discovery of this object adds another location to the rare, but growing, list of open-air findspots of this antiquity.

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