To illustrate worked flint or obsidian in pen and ink, it is common practice to use a continuous line for shading to describe the form. Attention is given to highlights and shadows to convey the smooth and sometimes glossy nature of the piece. When illustrating worked pieces of coarser stone, such as diorite and quartzite, it is similarly necessary to convey some impression of the character of the material. This can be done by using a broken or discontinuous line for the shaded areas. It is essentially subjective as to where the line should be broken and as to the arrangement and direction of the lines, but there are a few basic principles to keep in mind.

1. Often the ridges that separate the flake scars are poorly defined. Where this is the case the drawing should lack the solid line defining the edge of the flake removal (Fig. 1a).

2. Coarse stone tends to look less reflective in terms of highlight, due to the irregular surface of the flake scars, so a more comprehensively textured effect is needed. Also note that, unlike flint, the cortex may look smoother by comparison to the flaked areas and this should be brought out in the drawing (Fig. 2).

3. Some pieces are only crudely worked and it may be necessary to make some order out of chaos and define the author's interpretations while retaining the often wild appearance of the original (Fig. 3).

The illustrations cover, in general terms, samples of line type suitable for the raw materials listed below:

Fig. 1. Even-grained stones such as coarse cherts and quartzitic sandstones.

Fig. 2. Stones such as diorite which are less conchoidal in their fracture pattern.

Fig. 3. Quartzites with fractures and inclusions. Dependent upon authors' intentions, a combination and extension of these line varieties should be adaptable for use in illustrating most types of coarse stone tools found in Britain.

A final note concerns African and southeast Asian material. This can include extremely irregularly fracturing rocks like quartz and lava, where the impression is of stepped striations from the point of impact, with jagged edges and with crushed rather than retouched areas. For examples of illustrations showing various interpretations of these raw materials see Wymer (1982, figs. 7, 10, 13, 14, 16, 17 and 24).

Acknowledgements

I am grateful to Dr P. Callow and Mrs J. Cornford for allowing me to reproduce illustrations in advance of their formal publication.

Reference

CARRYING CORES TO GLOUCESTERSHIRE: SOME THOUGHTS ON LITHIC RESOURCE EXPLOITATION

by Alan Saville

Two recent finds of flint cores in Gloucestershire are worthy of note and prompt speculation. One of the cores (maximum dimension 126mm x weight 750 grams) comes from a neolithic burial deposit in a chambered tomb at Hazleton, near Northleach, the other (max. dim. 133mm x wt. 1050g) comes from the excavation of a Romano-British farmstead with earlier occupation at Frocester, near Stroud, and is assumed to be of neolithic/early bronze age date. In both cases these large cores are already extensively flaked, and derive from hefty nodules. To judge from the nature of the unweathered cortex on each core, the raw material is fresh chalk flint, presumably mined. Gloucestershire itself has no such raw material, the nearest flint-bearing chalk being that of Berkshire, Oxfordshire and Wiltshire to the east and south. Derived flint from closer at hand, as in the glacial outwash deposits around Moreton-in-Marsh in north-east Gloucestershire, was undoubtedly exploited in prehistory, but could not provide nodules of the quality discussed here.

These two cores bring into focus the fact that in Gloucestershire, as in many other parts of England, flint must have been imported in nodule form to satisfy the needs of local knappers for producing general purpose tools. Prior to the neolithic there is as yet no explicit evidence for the large-scale quarrying or mining of lithic resources, and it is assumed that the mesolithic knappers basically exploited surface exposures, perhaps following these in some cases by superficial diggings. These exposures may well have been more prolific than is now the case, and in some parts of England it is possible that local knowledge of resource locations was retained from late glacial times, prior to the maximum spread of the post-glacial forest, which would have reduced the visibility of the exposures. The major lithic raw material exploited by mesolithic knappers was flint, but most frequently in redeposited forms, as gravel or beach pebbles and nodules from boulder clay or other drift deposits. Where flint was absent or in short supply a variety of cherts, quartzites and other rocks were knapped.

The movement of these raw materials during the mesolithic was no doubt consistent for the most part with the mobility of the local population within its own territory, and with the curation of raw materials once obtained against seasonal requirements. The raw material, in unknapped form, was regularly transported from its source to a knapping location, probably functionally determined, but there is little to suggest that this process was organised in any sense other than by separate hunter-gatherer groups exploiting their own lithic resources. The relationship between tool size and raw material availability is notoriously a 'chicken-and-egg' problem, but in the mesolithic it is apparent at the very least that the ability to manufacture and use tool-kits made from small-sized pebbles did obviate the necessity for any particular group to acquire large-sized nodules from outside its own territory.