A LOST RIVER AND SOME PALAEOLITHIC SURPRISES: NEW QUARTZITE FINDS FROM NORFOLK AND OXFORDSHIRE

Terry Hardaker and R.J. MacRae

INTRODUCTION

The recovery of fifteen Lower Palaeolithic quartzite artefacts from a lost river in Norfolk, together with nearly 300 from the Upper Thames, has prompted this reassessment of the role of quartzitic rocks in the British Palaeolithic. It now appears that past collectors, anxious to amass flint handaxes, may have overlooked the quartzites. The observation that local quartzite was used even close to flint-rich areas opens up the prospect that non-flint artefacts may occur in greater numbers and over a wider area than previously known. In this paper the authors examine what new information can be gained from this unexpected increase in numbers of quartzite artefacts.

THE BYTHAM RIVER

Norfolk, so rich in its Palaeolithic heritage, had until 1996 only yielded one much travel-worn quartzite handaxe (from Stibbard in north Norfolk, Wymer 1999), in contrast to the thousands of flint items recorded from numerous sites. In 1996 one of us (RJM) began to find some quartzite cores and flakes in gravels in the big Frimstone's quarry at Feltwell (TL 739924). A total of nine quartzites, together with 14 flint handaxes and about 100 flint cores and flakes, representing the total finds from 1996 to 1998, were published in Lithics (MacRae 1999). Also recorded were 45 handaxes recovered over a longer period from Feltwell through the vigilance of the local Secker family. However they failed to spot quartzites, and it was left to the present authors to bring the total to 15. The illustrations (Hardaker) show the variety and technology of these artefacts.

Quaternary scientists have in recent years carried out detailed research into the origin, and presumed course, of a major river which once ran from the Midlands to the North Sea. This has come to be known as the Bytham River, flowing roughly parallel to the pre-Anglian Thames (see map). Geological controversy over the history of the Bytham River continues; here we confine ourselves to the archaeology associated with this lost river.

Not a trace of this lost river remains above ground. The Anglian ice overwhelmed and obliterated it somewhere around OIS 12. Its sands and gravels were overlain by till, and climatic changes left a complex succession of sediments - it is now declared that there were five glacial episodes in eastern and Midland England, from OIS 16 down to OIS 2. The Bytham river sediments were "deposited in a cool temperate climate in which the early hominids occupied sites such as High Lodge", probably in OIS Stage 13 (Hamblin, Moorlock & Rose, 2000). The glaciation which over-rode the Bytham river valley in OIS 12 deposited the Lowestoft Till, thus sealing in the Palaeolithic evidence. Not only High Lodge, but famous sites like Warren Hill and Lakenheath can now with fair certainty be associated with the lost river, as can the Frimstone site at Feltwell. The artefacts are pre-Anglian or Cromerian, probably of the same period as Boxgrove in Sussex, and therefore amongst the earliest yet identified in Britain, dating to 480,000 bp or a little after. The geologists' exploration of Bytham River deposits is ongoing in north-east Norfolk.
THE INFLUX OF QUARTZITE

How long the Bytham River existed before it was destroyed is arguable, but at one early Pleistocene stage it began to incorporate in its varied deposits the brown, rounded Bunter quartzite cobbles derived from the lowest member of the Triassic system in the Midlands, the Kidderminster sandstone. Great quantities of them were swept along the valley and are found at many locations, including Feltwell. Here, they vary from walnut to cricket ball size, making up about 30% of the larger clasts in the gravel, the rest being flint of varying quality, some rolled and frost-cracked, some sound. The finest and most elegant of the Feltwell flint handaxes compare well with those from Boxgrove. Others vary in size, skill and condition, and may have come downstream from a number of old terraces. Likewise the hundred or so thick stone-struck flint flakes and cores from Feltwell whose origin is speculative. As for the 15 quartzite pieces - some heavily, some moderately and some quite lightly rolled - we have insufficient evidence to propose how far they have travelled, except for the rather obvious point that the river would have tended to carry them downstream from a non-flint zone, where they may have been made, towards a flint-rich zone. They are unquestionably Lower Palaeolithic. If the least rolled of these (notably item 2 below) was perhaps made near to Feltwell, where flint would always have been abundant, we would suggest that quartzite provided more robust or heavy-duty flakes or tools (for example to split large bones for marrow) than the sharper but more brittle flint. The presence of a handful of quartzite flakes from Warren Hill, a site even further downstream on the course of the Bytham, suggests that quartzite may be found anywhere in the Bytham gravels, although apparently not at High Lodge.

The Feltwell quartzites comprise:

1. Retouched flake of handaxe form, 7 removals, 125 x 87 x 38mm, rolled (Fig 2.1).
2. Bifacial chopping tool, 4 removals, 140 x 94 x 80mm, fresh (Fig. 2.2).
3. Bifacial chopping tool, 3 removals, 106 x 70 x 54mm, rolled (Fig. 2.3).
4. Bifacial chopping tool, 5 removals, 95 x 70 x 51mm, moderately rolled.
5. Large retouched flake, 2 removals, 105 x 98 x 51mm, rolled.
6. Retouched bifacial flake, 3 removals, 108 x 79 x 42mm, moderately rolled. Two very clear incipient blows near point of percussion (Fig 3.1).
7. Cortical flake, one removal, 101 x 90 x 25mm, lightly rolled.
8. Cortical flake, 82 x 58 x 30mm, clear bulb and striations, rolled.
9. Cortical flake, 70 x 66 x 30mm, heavily rolled.
10. Bifacial flake, 4 removals, 60 x 52 x 28mm, lightly rolled (Fig. 3.2).
11. Bifacial flake, 3 removals, 45 x 43 x 17mm, lightly rolled.
12. Outstanding in this collection. A core with 5 deep removals, 140 x 110 x 72mm, moderately rolled, showing 7 clear points of percussion. Described fully below (Fig. 4).
13. Split cobble, 10 removals of small flakes, some hinged, 115 x 112 x 79mm, moderately rolled. The material did not respond well to attempts to detach flakes and has been abandoned leaving some angles and platforms unexploited (Fig. 3.3).
14. Core, 2 removals, 100 x 85 x 54mm, moderately rolled. Another example with unexploited potential remaining.
15. Split pebble core, 3 removals, 89 x 71 x 35mm, rolled.

SOME TECHNICAL OBSERVATIONS

It might be surmised from the sample above that most of the artefacts are simply modified cobbles with removals designed to produce a useful cutting edge or small but serviceable flakes. In other contexts it has been shown that quartzite flakes were evidently desirable because of their durable edges (Jones 1980). The mechanics of transforming the tough, "user-resistant" metamorphic quartzite into useful implements was investigated by Moloney (1988). Apart from the great variability in the hardness of non-flint rock, Moloney found by experiment that the main problem was internal flaws which were often not encountered until well into manufacture (as in item 13 above). The upper Thames quartzites verify that Palaeolithic knappers also experienced similar problems - hinge fractures, step fractures, and material flaws, but they are remarkably few. This has led to speculation that Palaeolithic people had some means of testing stone for hardness and quality. With the aim of "getting into the mind of the maker" one of us (Hardaker) examined one particularly intriguing Feltwell core, item 12, with the following results:

This core was used to make flake tools. It had no use as a tool in its own right, as seen from the random shape that remains after the removal of five flakes. The flakes would all have been of superb quality, and it is unusual to see a core where all removals have been so successful. This is the first hint that we are looking at the work of a master craftsman.

But there are several other clues to corroborate this. On a small triangular area of cortex there are seven small horseshoe-shaped percussive bruises, indicative of hitting with a hammerstone (Plate 1). As these hits are located in a place where there could be no hope of removing flakes (no suitable platform), it seems likely that they represent the testing of the quartzite prior to removal of flakes. Here we have evidence that the maker was able to tell from the sound obtained from hitting a stone blank, how suitable it was for knapping. The exact thought-process embodied in this test is literally recorded in stone. The percussion marks are arranged five in a row, close together as if made quickly without pausing to listen to the sound of each blow, after which the maker has turned the stone slightly, hit once more, then turned through almost 90 degrees and hit a final time, as though in turning it a "second opinion" on the test would be obtained. Because of the direction in which the stone has been turned for the final blow, it is almost certain that the maker was right-handed; it would have been extremely awkward to turn the stone this way with the hammerstone in the left hand.

These small hit marks are produced with restrained blows, (perhaps more like heavy tapping), using a light hammerstone. But elsewhere on the
Figure 2: Quartzite Artefacts from Feltwell
1) Handaxe; 2 & 3) Bifacial choppers
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Figure 3: Quartzite artefacts from Feltwell 1 & 2) Bifacially worked flakes; 3) Core
core, adjacent to a successful removal, are three much larger percussion marks, produced from the full force of blows intended to detach flakes (Plate 2). The different shape of the hammerstone marks suggests that a different, heavier, tool was used. Once more the maker reveals great skill, as the marks are all within 3-4mm of one another and of the final, successful, blow which removed the flake. The marks demonstrate how the stone was struck with massive blows four times within a very small radius - this person's aim was almost perfect, the equivalent of the best marksman today!

The core is left with substantial cortex offering potential for further removals, which a workman of such calibre could hardly miss. That the maker chose to ignore this, suggests that they rightly judged that would flakes be obtained of the size already detached. Our craftsman had no interest in smaller removals!

Plate 1: Feltwell artefact 12: the seven small test marks

Plate 2: Feltwell artefact 12: the three massive hammer blows
Seldom is it possible to obtain so much information from a single artefact. We observe a right-handed individual employing an advanced method to test quartzite quality, including a "double check" procedure, probable use of different tools for testing and knapping, a high level of precision in knapping, and a keen judgement on when to stop. Such evidence must surely augment our understanding of the mental capacities of Cromerian/pre-Anglian hominids as well as underlining the value of the search for artefacts in derived contexts.

THE UPPER THAMES

In 1988 one of us co-edited a multi-author volume (MacRae & Moloney, 1988) which set out to examine the role of non-flint rocks in the toolmaking traditions of the British Lower Palaeolithic. At the time, opinion was divided as to the likelihood or otherwise of any future rise in finds of non-flint artefacts. It seemed generally to be felt that the odd quartzite handaxe might turn up in any assemblage, but that considerable numbers were not to be expected. Now, 13 years on, the picture has changed dramatically, notably in the Upper Thames west of Oxford and in the Abingdon area.

In his 1968 Gazetteer, Roe recorded 400 flint and 30 quartzite artefacts as the total from the Thames valley between Wallingford and the Cotswold headwaters. These were finds made in the earlier part of the 20th century, and from then on the upper Thames attracted minimal interest until the gravels at Berinsfield close to the Chiltern foothills produced 205 flint and 36 quartzite palaeoliths (MacRae 1982; 1988). The "quartzites" stimulated a fresh interest, and a pit at Stanton Harcourt known as "Gravelly Guy" yielded 16 quartzite and 40 flint specimens, mostly handaxes. In 1989 recoveries from pits in the Stanton Harcourt area and around Abingdon brought the total to 101 quartzites and 587 flints. Then a big new pit at Cassington began to be very fruitful indeed, quartzite palaeoliths far exceeding those of flint. By the end of 2000 the upper Thames's grand totals revealed an astonishing 392 quartzite tools and flakes against 730 of flint.

In short, more than one-third of all finds are non-flint.

The abundance of quartzites in the upper Thames may be attributed to two factors. Given that the valley apparently provided good hunter-gatherer subsistence, stone tools were required. Very little of the flint in the limestone gravels of the upper Thames was suitable for knapping. The Acheulians clearly brought their flint artefacts, probably in finished form, the 20-40km distance from the nearest sound flint on the Chiltern escarpment. But the upper Thames hunters had an abundant alternative source of material on the spot, in the form of the Bunter pebbles which had been transported here from the Midlands via the Evenlode Valley, forming the deposit known as the Northern or Plateau Drift (see map). Harder to work than flint, these pebbles nevertheless filled an important role.

HUNTING AND GATHERING

The recovery of palaeoliths from gravel pits is not just a matter of walking in and picking them up! It requires regular, frequent visits, more often than not unfruitful. In the experience of the authors the identification of quartzites is a skill only acquired painstakingly slowly. The fieldworker is obliged to follow the digger rather than choose his own hunting ground. The finds are never in primary context, but as Wymer (1999 & pers. comm.) affirms, the vast majority of our national stock of palaeoliths has been found in secondary context in fluvial deposits. Indeed, primary context sites are so rare that none of Lower Palaeolithic date has ever been identified in the Upper Thames (Roe 1994). The finds in the Upper Thames are all derived from earlier periods; the 100 or so quartzites from Cassington all came from the Devensian floodplain though clearly of much greater age. The search begun by MacRae in the late 1970s has now been taken up by Hardaker upstream of Oxford and Jeffrey Wallis in the Abingdon area. More detailed examination of these Upper Thames quartzites will be covered in a forthcoming article by Hardaker.
CONCLUSIONS

Archaeological fieldwork in commercial gravel pits has, in the last ten years, revealed evidence of the use made by Lower Palaeolithic man of quartzite material washed out from the Midlands by Pleistocene glacio-fluvial activity, and deposited in two widely separated areas. The importance of non-primary sites in derived gravels, in the absence of better sites, should not be underrated. Although our fieldwork has been limited in extent, the possibility that other river gravels may also contain quartzite artefacts may now be considered.

REFERENCES


Hardaker
79 Millwood End
Long Hanborough
Witney
Oxford
OX8 8 BP

MacRae
Kirby Cottage
Low Street
Hardingham
Norfolk NR9 4EL