Acknowledgement

I am grateful to Ron Waite for bringing these finds to my attention and for permitting me to record and publish them. The handaxes remain in Mr. Waite's private collection.

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TOOL MANUFACTURE IN QUARTZITIC AND SIMILAR ROCKS IN THE BRITISH PALAEOLITHIC

by R.J. MacRae

This outline of some aspects of implement manufacture in the British Palaeolithic using quartzite and similar hard rocks is designed to arouse interest in a strangely neglected area of lithic studies. Non-flint artefacts in the earlier Palaeolithic are usually given little more than passing mention in the vast sea of literature concerning flint. Upper Palaeolithic reports necessarily deal in detail with the hard rock tools sometimes found in caves; but apart from occasional short papers in county journals and the like very few thorough examinations of the non-flint content of early assemblages seem to have been published. Professor Shotton and his colleagues have done justice to the finds in the Midlands so far; Posnansky (1963) dealt adequately with some quartzite tools in pits on the Nottinghamshire-Derbyshire borders. But as yet no comprehensive study has been made for Britain. Now that the immensely important Lower Palaeolithic homestrid site of Pontnewydd cave has been published by Stephen Green and his fellow-workers, it seems time for a wide-ranging examination of the role of hard rock implements to be made.

A multi-author publication is planned, and half a dozen contributions have been firmly promised. As instigator and co-editor with Norah Moloney, I would welcome information, especially about relevant literature and also isolated finds in any part of Britain. That would help with a proposed catalogue or gazetteer. The general study will involve reports of experimental tool manufacture and functional efficiency; will contain accounts of known assemblages and their geological contexts; and will include the Upper Palaeolithic, but no later periods. The whole will be confined to Britain except for extracts from literature concerning hard rock tools in other countries which are directly relevant to the interpretation of British finds. The chert from which the Broom/Axminster handaxes were made will not be included. It is too close a relative to flint.

I have for a quarter of a century muddied my gumboots on the floors of gravel pits over much of Britain below the Bristol/Wash line, and had added several thousand palaeolithic artefacts to the Pitt Rivers Museum collections in Oxford when the significance of the quartzite fraction became evident. 'I often wonder', wrote F.W. Shotton to me back in 1971, 'whether the scarcity of quartzite implements is a question of lack of recognition but I think one is only likely to find quartzite tools on and beyond the fringes of the flint country. We have about eleven from the West Midlands.' After that hint, although other commitments meant only sporadic visits to likely gravel pits, I began consciously to look for implements other than the more easily-spotted flint. This alteration in focus, so to speak, brought pleasing results. It also brought the depressing realisation that I must have missed seeing quite a lot of these stone artefacts, as did most workers in the past when they failed to notice, or ignored, non-flint tools when the collectors told them they wanted nice flint handaxes. Modern mechanical gravel-digging must mean that nine out of ten artefacts are sped into the sorter or crusher to be lost for
ever, mostly now under motorways. One can only hope that those which are recovered represent a fair sample. After all, the vast majority of the palaeolithic implements we study are surface finds, and if we were to reject them because they were not excavated under controlled conditions we should be left with a very much reduced field for research.

Having collected fifty quartzite artefacts of earlier Palaeolithic origin from gravel exposures in the Oxford region more than doubling the total from there in the past hundred years - three questions arose. Do quartzite implements represent the use of tools for specific functions? Or are they the artefacts of a small human group that used only quartzite? Or were they made and used somewhere else and then transported? Of these earlier Palaeolithic implements from African rocks, and the later Bunter pebbles and other glacial erratic rocks were? These were postulations made by Peter Jones in my (1982) report on palaeoliths from Berinsfield, near Dorchester-on-Thames. Thirteen quartzite and 169 flint tools made up this assemblage. Peter’s extensive experience at Olduvai plus his expertise in fabricating implements from African rocks qualified him to write: ‘The Oxfordshire quartzite artefacts are all the more interesting in that they closely resemble tools from the Oldowan, Developed Oldowan, and Acheulian industries in many areas of Africa. Indeed, they have a greater affinity to these African industries than they do to other British ones’. However, he concluded that in Britain quartzite was only used as a substitute for flint. It was not an inferior substitute, because ‘when used, its cutting and cutting edge’ was a superior material. As to colonisation of north Britain, Peter thought it was ‘very far from uncontrolled’. Acheulian artefacts were identified by removing a second series of flakes from the edge. John Wymer has observed that quartzite, ‘while being a most intractable rock to work’, may have been more suitable for certain uses when the sharpness of the edge was not of primary importance.

The extensive gravel spread of the upper Thames region which Derek Roe designated as being proximal to the ‘very edge of the Lower and Middle Palaeolithic settlement of Europe’ - seemed to me ideal to test the theory that stone tools were made and transported from gravel exposures in the Thames valley. More than 226 handaxes and about an equal number of other tool forms had been recovered. This is a small fraction of the total as the Caversham Channel, and consequently quartzite tools are very rare indeed south of the Chilterns. I once amassed several thousand flakes and tools from gravel in the Caversham Channel, and only four were of quartzite, despite the abundance of Bunter pebbles there, as in all Middle Thames terrace gravels.

While the presence of Acheulian hunter/gatherers in the upper Thames region is amply evidenced, there were obviously fewer visiting groups than there were downstream, and perhaps they came less frequently. The scarcity of quartzite, though, was not a deterrent for the hunters. Acheulian man, by the nature of his life-style and environment, had to be a master of expediency, so he tackled the local raw material unfamiliar though it may have been, and turned out useful tools from the Bunter pebbles which the Anglian Plateau Drift had deposited in the terrain.

It would seem, then, that the upper Thames has produced many more non-flint stone industries than any other region in Britain, except the Pontnewydd cave. The absence of a parallel Drift, because, unlike the Oxford sites, the cave was capable of being investigated with great care, using sophisticated techniques. It was indeed so excavated, producing a startling date of around a quarter of a million years for the implements and the hominid remains. Stephen Green and his colleagues have produced a superb report, which includes experimental work (by Mark Newcomer) on the tough, igneous rocks from which the tools were made. The upper Thames finds, on the other hand, are derived, and likely to have been disturbed to a greater or lesser degree by periglacial and fluvial forces. Pontnewydd is an Acheulian industry or industries rich in handaxes and in the use of Levallois technique. None of the upper Thames quartzites owes anything to Levallois methods. For these and other reasons, the Oxford sites are surface deposits, and so they are available for dating. Acheulian, however, the implements remain, and the only really firm ground for dating them is that the majority came from the lower 20,000 years of the gravel. Seven more handaxes were found, and these were made of flint. The only other finds, the artefacts of the earlier industries were recovered from gravel in the Caversham Channel, and possibly four were of quartzite, despite the abundance of Bunter pebbles there, as in all Middle Thames terrace gravels.

Positive identification of quartzite and hard rock tools,
when they have been rolled and abraded and when they have been fashioned to idiosyncratic patterns with derisory disregard for modern typology often poses problems which can only be solved by experience in the behavior of such rocks during experimental flaking; by close comparison with cobbles from the same gravels thermally or naturally broken; by comparing pieces with poorly defined flaking with those of undoubted authenticity; and by matching with early stone artefacts from other countries, usually African ones. There remains at the museum a box of Berinsfield 'doubtfuls', mainly split cobbles with cleavage-plane fractures and one, two or three flake-scars of dubious human origin. Bearing in mind that conchoidal flake-scars in quartzite are seldom as sharply defined as those in flint, and that cones, bulbs, concentric ripples and striated fissures are barely visible in the coarse grain of the rock, it is wise not to accept any but those pieces patently shaped by man. The difficulty of identification is also compounded by the absence from quartzite of the staining, patination and gloss of ancient flint. Wind-facetting too is common on split Bunter pebbles but usually this has occurred before any human (or hominid?) adaptation. In contrast to Berinsfield, the Stanton Harcourt finds are clearly genuine and present no problems, but they are all handaxes.

Conventional description falters and the record tends to read 'query sub-cordate', 'possible limande', 'pointed trihedral', 'indefinable chopping-tool' and so on. Nearly half are contemporaneous with the flint, 'handaxes, pointed and parallel with two or three flake-scars of quartzite, and one or two of the more refined bifaces may have been finished with antler or bone. All the handaxes have at least a 1cm cutting-edge, and the sharp periphery of one exceeds 3cm.

Two of the handaxes are outstanding in that they are fashioned in tough quartzite with as much skill and refinement as the best of the flint bifaces. One is a light orange quartzite with a slight twist (from Stanton Harcourt) measures 10cm x 7.6cm x 3.8cm and is superbly made. The other (from Berinsfield) is a larger, elongated ovate with shallow, accurate flaking on both faces and retaining very little cortex. This one, to my knowledge, is the most elegant non-flint implement from the whole of the Thames valley. The rest of the handaxes descend the typological scale from fairly skilled to the apparently ham-fisted efforts of beginners. Behind the crudity, however, can be detected the hands of the Acheulian flakers who were accustomed to flint and had the average skills of their contemporaries. They were unused, we conjecture, to dealing with hard rocks and produced inelegant but useful tools. No doubt they discovered that the light, swinging 'follow-through' blows accurately placed to the quartzite flint were not much use on quartzite. Greater force was needed, especially to detach the first flake from a rounded cobble. Until they became handier they were as likely to break the stone hammer as the workpiece. But have this this way up the Thames and found little flint that was of the quality to which they were accustomed, they were not discouraged. There may have been, in one of those 'precise moments of time' so long ago, a killing or butchering emergency which demanded action. Quartzite, surprisingly sharp and actually more durable than flint, was the answer.

A great deal more could be said about the flakes, and the tools, but this paper is no more than a sketchy outline. I have found isolated quartzite chopping-tools nearer to Oxford than are the two main pit complexes dealt with above, and these will be included in a future more detailed analysis of the whole collection, involving also a new examination of the older material in museums. I have described the non-flint tools in this review as 'quartzite' only, to avoid repetition of a tedious qualifying phrase, but two of the Berinsfield handaxes are of other rocks. A pointed handaxe, 14cm x 6cm x 6cm, is of a dark Carboniferous chert (to be confirmed) with a thick brown cortex. The other is a light orange colour, smaller, of almost pure quartz with traces of magnetite. Further mineralogical and lithological study of the larger erratic rocks in the valley gravels is indicated, as seven variations in size, density and hardness of the quartzitic stones used for the implements have already been identified.

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PUTTING LITHICS TO WORK: FLINT SCATTERS AND THE SETTLEMENT PATTERN

by Frances Healy

The Prehistoric Society’s meeting on 15 November 1986 brought together five speakers expanding the diverse potential of our most abundant archaeological resource together with even more diverse means of extracting it.

Mark Edmonds took as his starting point the indelible recognisability of successive stages of the reduction process, and went on to demonstrate its practical worth in the field. His first case study concerned what is usually a no-go area for field survey: the permanent pasture. Here, in this case in the Peak District, he showed a programme of shovel-testing reflected the practice of different stages of reduction in different topographical settings, during the implicit conduct of different activities. Turning to his current research in the Great Langdale quarries, he used a similar approach to sketch a preliminary picture of the techniques by which the quarries were worked and of the social and spatial organisation of their exploitation.

Frances Healy used the excavation of a multi-period site on Spong Hill, Norfolk, to demonstrate that the kinds of context from which concentrations of unstratified and residual lithic material were excavated varied with the cultural and chronological affinities of those concentrations. Predominantly Earlier Neolithic material came mainly from periglacial formations and later archaeological contexts; predominantly Later Neolithic/Early Bronze Age material mainly from the base of the modern ploughsoil. Having shown the dichotomy to be a frequent one, and suggested behavioural explanations for it, she spelt out its implications for the differential entry of lithics of the two phases into the ploughsoil and for the all-too-familiar dominance of Later Neolithic/Early Bronze Age material in surface collections.

Julie Gardiner described the largely untapped potential of lithic material amassed haphazardly in museum collections over the last hundred and fifty years, and summarised the methods which she has developed for studying it. These included the ordering of artefacts into groups of morphologically similar forms, which could be used to characterize collections and, with particular effect, to detect and define tell-tale, an essential preliminary to comparison between or synthesis of the collections of numerous individuals. She proceeded to present her main results, on the broad canvas of a block of three southern English counties, stripped to their geological bones, Impressively, if predictable, correlations between collection composition, raw material type, and topography interacted with inescapably cultural factors, unseen most clearly in the unmarred distribution of fine objects, linked far more with the presence of communal monuments than with detectable geographical or economic variations.

Julian Richards presented the fruits of the Stonehenge Environs Project, in the form of techniques developed for it and of experience acquired in the course of it. He underlined the