

ARTICLES

BELT, SHOULDER-BAG OR BASKET? AN ENQUIRY INTO HANDAXE TRANSPORT AND FLINT SOURCES

by R.J. MacRae

The historian George Trevelyan defined the writing of history as a guess at the most likely probability. If we extend that to prehistory, and concede that the more remote the time the more elusive truth becomes, we might essay the thought that the elucidation of the very distant past is an exercise in speculation developing into possibility and clarified by investigation into probability, but still dependent upon observation and deduction.

Such ponderous reflections need to be brought down to earth, and so they are during my muddy wanderings in gravel pits in the upper Thames valley from which in the last fifteen years I have rescued quite a lot of Lower Palaeolithic artefacts. Most are of flint, some are of quartzite, and the latter have already been dealt with (MacRae 1988).

My theme is the transport of raw materials and ready-made tools from a presumed source of flint in the foothills of the Chilterns to a number of locations upstream, where nodules or roughouts were fashioned into handaxes and presumably used. Far up the river valley it would seem that only finished flint bifaces were carried, used and abandoned. The corollary involves what is called 'procurement strategy' and 'resource stress', which simply mean that it is sensible to shop at ASDA (Schofield 1986). The evidence for such activities lies in sites spread over a distance of 53 kilometres (Fig. 1). Deductions from this evidence could be controversial, and comments would be welcome from palaeophiles.

It is plain that Acheulian hunter-gatherers were seldom deterred in their pursuit of protein by the absence or shortage of familiar tool materials. If a good hunting ground were known to exist, or a blood-trail had to be followed into places where there was no usable flint, several options were open to ensure a supply of stone tools. One way, well-evidenced in the upper Thames - should a group have set out from a base camp with not enough flint handaxes to deal with an emergency kill or an unforeseen scavenging opportunity - was to pick up quartzite cobbles and knock them into something resembling sharp bifaces, good enough for the job on hand. This presupposes a base camp near a good flint source, and that there was no flint on the hunting trail. I think that was the case in the upper Thames valley.

Possibly flint nodules or roughed-out handaxes were carried on excursions away from base and flaked to a finish as required. Or optimists new to the terrain set out unarmed, hoping to find workable flint along the way, which they didn't because there isn't any. The next bedrock source of flint north of the Chilterns is in the Lincolnshire chalk wolds. There is flint of a sort all along the valley, contained in the remnants of the Plateau (or Northern) Drift, many times re-worked since its pre-Cromerian origin. This archaic flint, together with Bunter

pebbles from the Midlands, was and still is available and plentiful (Briggs 1988). It is almost useless as a tool material because, long before our Acheulians came to the region, it was decayed, frost-cracked and heavily corticated. Only rarely have I found a piece just good enough to flake into a small, misshapen ovate. The rest just disintegrate.

Quaternary specialists continue to try to interpret the chronology of the upper Thames, its turbulent geomorphological history, and the physical environments encountered by early man. These complexities are not within the scope of this paper. Relevant to this present argument, however, is the Summertown/Radley terrace in which about half of the 600 artefacts occur. The bulk of that terrace is cold-stage, with an earlier warm channel underneath, and discontinuous warm-stage gravels above the cold-stage (Briggs *et al.* 1985, 69-107). For a summary of the current chilly thinking on Palaeolithic archaeology and the British Quaternary sequence the reader should refer to Wymer (1988), but do I dare, as a heretic amateur, to continue to believe that our Thames Acheulians preferred decent warm weather to tundra cold? While much Acheulian activity is now said to be identified with cold-stage deposits, a lot of handaxes in many areas could originate or be derived from earlier warm-stage sediments as seen in the Summertown/Radley terrace. Briggs (1985; 1988) strongly inclines to this view in regard to the upper Thames.

The difficulty is to identify those temperate climates - Hoxnian, Wolstonian interglacials or early Ipswichian? Typology contributes only more or less according to one's opinions. Technology gets nearer and several industries can be distinguished. Most varieties of Acheulian appear, plus Late Acheulian/Micoquian, a little Levallois technique, and some Mousterian, evidently a succession of visits over a very long period of time. There are so far no primary context sites, but I have fished out handaxes from small areas at two of the sites on or just above the clay bedrock in fairly fresh condition. Mammalian fauna are not so far diagnostic, mammoth teeth and rhino bone lying in cosy proximity in the lowest gravels at Stanton Harcourt.

In whatever climate the handaxe-makers operated and in whatever period, I am convinced that all but very few of the 370 flint bifaces known to come from upper Thames deposits are made out of flint from the Wallingford fan-gravels, a five-mile deep strip of solifluxion deposits sludged down from the Chiltern chalk and underlain in parts by the bedded gravels and sands of an old Thames terrace. The fan-gravels began to accumulate in the early Anglian and during several stages of deposition warm climates existed at least twice (Horton *et al.* 1981). Though the abundant flint in the gravels is now severely frost-cracked and internally shattered, it is evident that there was sound flint available for the handaxe-makers at some time or other, either from the old lower bedded layers before the periglacial freeze-ups or from surface spreads of unaffected flint fluvially eroded afterwards and carried from the chalk or the clay-with-flints which caps some of the hills.

There may be clues in the 122 handaxes found in the fan gravels (Arkell 1945, 1947), some frosted, some quite unharmed. Wymer (1968, 104-7) favoured a date for the gravels in the

Gipping ('Wolstonian') and suggests that the handaxes may derive from earlier sites later destroyed. If there were spreads of good flint it may not have been easily gained in temperate palaeoenvironments when eroded nodules would tend to be obscured by heavy valley vegetation or in established grassland on valley slopes. Stream beds could have been a better source. Some selection would have been necessary, as Chiltern flint is not of the finest quality, being plagued (from the knapper's point of view) by numerous hard, cherty inclusions, and the nodules are distinctly knobby and irregular.

In the course of this enquiry suggestions were made that chalk areas further from the Thames might have been alternative flint sources. This has been carefully considered, in field work and with maps. Space forbids listing the reasons, but the Lambourn Downs just south of Wantage, and the Sinodun Hills chalk outlier over the river from Berinsfield, can be eliminated. It remains the most likely probability that the main 'flint bank' was near the river, east and north-east of Wallingford.

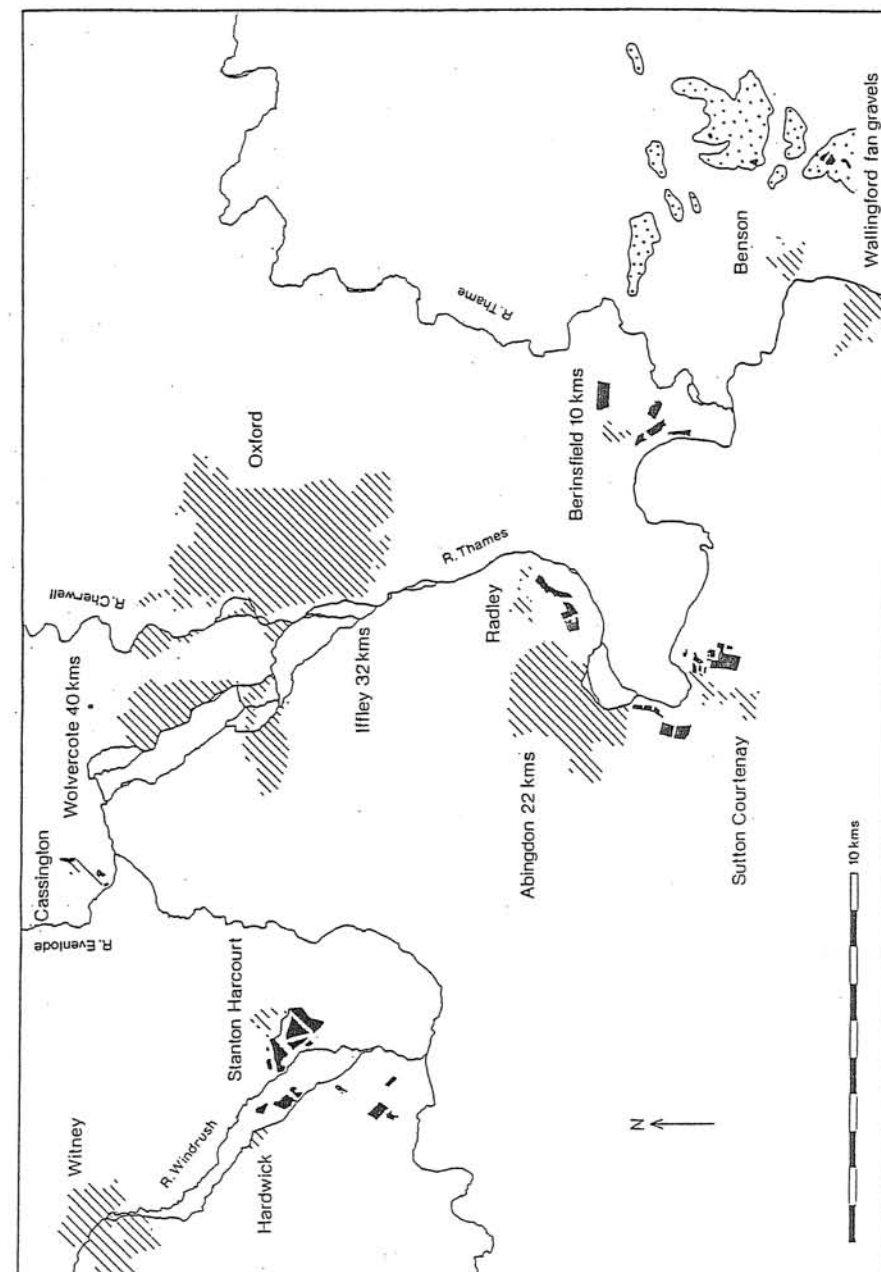
I am well aware of the topography trap and am not assuming Middle Pleistocene landscapes to have been even similar to those of today, but it has to be asked how far, and in what form, was the flint carried along the banks of the Thames, or across country taking short cuts where the river bends, assuming that the terrain was negotiable. It is clear that the Thames was following something close to its present course in the Oxford area by Cromerian times (Briggs 1988). There are six main sites between Wallingford and Stanton Harcourt and these account for most of the 270 handaxes listed by Roe (1968, 247-55), to which can now be added about 150 recovered since then (MacRae 198). Flakes and worked fragments make up an artefact total of over 600. Nearly all were within 2 km of the present rivers Thames and Windrush.

The six sites are briefly described below. All except Abingdon have been fairly well published, but only scant reference has been made to raw material sources. I have calculated two distances (within 1 km to allow for finds scattered over the bigger pits):

1. From the presumed flint source if the river bank is followed to the site and
2. An imaginary cross-country route or 'beeline'.

Except for Wallingford and Wolvercote, the implements were contained in the Summertown/Radley or Floodplain terraces and the condition of most of them precludes their having been moved very far from the place where they were found.

Wallingford. Finds early this century from the fan gravels. Horizons uncertain. Few flakes recovered, 122 handaxes known. Ample flint and little need for curation. River: 2 km; cross-country: 2 km.



Berinsfield (Dorchester-on-Thames). Extensive gravel workings since the 1930s. Virtually unexplored until the 1970s when 240 artefacts recovered (MacRae 1982, 1985, 1988) including 80 flint bifaces and 10 of quartzite. Numerous flakes and tools. Evidence of periodic occupation and differing technologies. Implements stained but rarely patinated, many broken butts and tips suggesting local use. Perhaps a base-camp for up-river activity. River: 10 km; cross-country: 11 km.

Abingdon area (Radley, Drayton, Sutton Courtney). Many commercial pits, old and new, mainly in floodplain. Finds scanty (?lack of search pre-1980). No flakes. Less than a dozen flint bifaces but 16 quartzite artefacts. Two, possibly more, fine bout-coupé Mousterian handaxes (Tyldesley 1984b). River: 22 km; cross-country 11 km.

Iffley. An old pit, early 1900s. The 30 handaxes include 10 of non-flint rocks. Many bifaces small and crude, others well-made. Little information about this Middle Acheulian site at the base of the Summertown/Radley terrace. River: 32 km; cross-country: 15 km.

Wolvercote. The channel at the base of this old brickpit, closed half a century ago and now water-filled, is one of Britain's most important but controversial sites. Many of the 78 handaxes are large, elegant, plano-convex and fresh, generally attributed to Late Acheulian/Micoquian. There are 11 quartzite bifaces. Well over 100 flakes, but numbers and analyses differ - certainly there are more than 60 primary and finishing flakes but in the early 1900s collectors often ignored flakes. Probable transport of some blanks or roughouts, and finished handaxes, from distant flint source. Many archaeological and geological papers summarised by Tyldesley (1986). River: 40 km; cross-country: 22 km.

Stanton Harcourt. The westernmost site, near confluence of Thames and Windrush. Large area of water-filled old pits, gravel extraction from others still proceeding. Palaeolithic potential not exploited until 1984, since then 50 flint artefacts including 30 well made handaxes recovered, plus 15 quartzite bifaces. Despite meticulous and prolonged search only 4 flakes found. Probable conversion of 6 broken handaxe fragments into small tools. The only local flint used is for two crude bifacial points with pebble butts. Handaxes variable in size and form, include one big cleaver and one 27 cm 'giant' (MacRae 1987). Distinctive heavy yellow alkaline patination on all artefacts. River: 53 km; cross-country: 24 km.

A few quick, and probably disputable, deductions may be drawn, admitting that the long river route was not likely to have been used every time and in every period, or that the terrain may not have made 'beeline' trips possible. Very few implements indeed have ever been found more than 2 km from the river. At Berinsfield most tools were made on site, an easy journey from the flint source. Handaxes at Abingdon and Iffley were transported from source, supplemented by local quartzite. Wolvercote is (as usual) enigmatic - the distances seem too far for nodule or roughout transport but the flakes testify at least to some fabrication on the spot. The case for Stanton Harcourt is clearer - too far from source to carry anything but ready-made flint handaxes, and local quartzite made up any tool

deficiency!

So if the hunting/gathering conditions were good right up the valley in temperate climates, just when did the carrying of nodules or roughouts become an unbearable chore? And why were so many perfectly good handaxes discarded up-river? Were they abandoned, or cached for future use? There could be a way to solve some of the problems. Volunteers willing to carry even a couple of 16 cm/800 g (typical) handaxes from Wallingford to Stanton Harcourt are so far lacking. I offer aids to ease the burden, as

a deerskin shoulder-bag

a sling of woven rawhide

a wicker basket (also useful for berries)

a fibre belt with holsters (see frontispiece of Worthington Smith's Man the Primaevial Savage)

As my friend the digger driver at one pit brightly suggests, some modern archaeological hearties could try one in each hand and one between the teeth. Or a pair slung round the neck like rugger boots.

Any takers?

Acknowledgement

I am most grateful to Dr D.A. Roe, Director of the Donald Baden-Powell Quaternary Research Centre in Oxford, for his scrutiny of this paper and for his wisely constructive criticism. The opinions expressed, however, are entirely my own.

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DISCRIMINANT FUNCTION ANALYSIS (DFA) OF MIXED LITHIC SCATTERS IN THE NORTH-EAST OF ENGLAND: A CASE OF MISCLASSIFIED IDENTITY?

by R. Young and D. Kay

In 1988, at the conference 'Breaking the Stony Silence' held in Sheffield, one of the present authors (RY) gave a paper entitled 'Mixed Lithic Scatters and the Mesolithic-Neolithic Transition in the North-East of England: a Speculation' (Young forthcoming). In this it was argued that the growing number of sites coming to light in the north-east which show basic 'Mesolithic'-type assemblages in surface association with typologically later material (predominantly leaf-shaped and barbed and tanged projectile points) might represent late, if not the latest, Mesolithic sites in the area, standing right at the interface of the local Mesolithic/Neolithic transition.

This contention was argued in detail in Sheffield and, as the paper is to be published, there seems little need to rehearse the main points here. However, the contribution did cause some interesting discussion, with some colleagues arguing that the mixture of material was fortuitous, the product of re-use of favourable locations over a long period of time or the end result of ploughing or other erosional factors.

Spurred on by this kind of discussion, we determined to try to test our theory statistically, if possible. To this end a discriminant function analysis (DFA) was conducted on material from the Wear Valley area of Co. Durham (Young 1987) to examine the extent to which simple measurements of length, breadth, thickness, weight and angle of retouch, on a variety of categories of lithic material, could provide 'objective' measurements of discrimination between Mesolithic and Neolithic/Bronze Age assemblages in the area.

The categories of material included cores, scrapers, miscellaneous retouched/utilised flakes and complete 'waste' flakes. The approach was inspired by the research of Pitts and Jacobi on postglacial lithic material from excavated contexts in the south of England (Pitts 1978; Pitts and Jacobi 1979). Their work and earlier analyses by Mace (1959) and Smith (1965) among others, shows that it is possible, for southern England at least, to distinguish between Mesolithic, Early, Middle and Late Neolithic and Bronze Age assemblages of waste flakes. This is done on the basis of variation in length and breadth determinations and ratios, with flakes tending to become squatter through time. These observed changes in waste flake shape have proved useful in categorising southern assemblages which have produced no 'diagnostic' artefacts and, mindful of Pitts' warning that things may be different in other areas of Britain, we were anxious to see if a similar situation prevailed in the area of study.

This is the first time that such an analytical programme has been carried out on north-eastern material, and it was hoped that, if it proved possible to discriminate between Mesolithic and Neolithic/Bronze Age material on these bases, then, by broadening the scale of the analysis to include mixed assemblages, we might be able to say whether these latter had more of an affinity with either Mesolithic or Neolithic/Bronze

PLEA

A member would like to obtain a copy of Sieveking, G., and Hart, M.B., (eds), The Scientific Study of Flint and Chert (Cambridge University Press 1986).

A. Briggs, 109 Howard Road, Clarendon Park, Leicester, will be glad to hear from potential vendors.