SOME OBSERVATIONS ON THE NON-FLINT LITHICS FROM CRESWELL CRAGS

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ABSTRACT

In 1986 R. J. MacRae ("Mac") asked me to contribute a list of the non-flint lithic artefacts from Creswell Crags to a volume which he was editing with Norah Moloney on the non-flint stone tools of the British Palaeolithic (MacRae and Moloney 1988). At that time I felt that my knowledge of this material was incomplete and I failed to contribute. This short paper, it is hoped, may go some way towards making amends.

INTRODUCTION

Creswell Crags is a shallow gorge in the Permian Lower Magnesian Limestone on the border between north-east Derbyshire and north-west Nottinghamshire (Figure 1). It is approximately 450m in length. Non-flint lithic artefacts believed to be of Late Middle Palaeolithic (Mousterian) age have been collected from four of the caves in the gorge — Pin Hole, Robin Hood Cave and Mother Grundy’s Parlour on its northern (Derbyshire) side and Church Hole on the southern (Nottinghamshire) side.

Elsewhere, I have provided a list, brief description and some illustrations of the Middle Palaeolithic artefacts from Church Hole (Jacobi in press). In this paper I want simply to present lists of the non-flint lithics from Robin Hood Cave and Pin Hole and point to what seems to be an interesting difference between the samples from the two caves.

Figure 1. Location of Creswell Crags and plan of the Crags showing caves mentioned in the text

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ROBIN HOOD CAVE: HISTORY, CONTEXT AND LIKELY AGE

Robin Hood Cave (SK 5338 7407) is the largest cave in the Magnesian Limestone of the British Isles and is about mid-way along the gorge (Figure 1). The cave has four openings in the cliff face and a small choked entrance on the plateau above the gorge. In the front of the cave are two large chambers – the “Western” and the “Eastern Chambers” each with its own entrance. Linked by passages to both these chambers is the “Central Chamber” (Figure 2).

The Western Chamber and the Western Entrance were explored by W. Boyd Dawkins, Thomas Heath and J. Magens Mello in 1875 and 1876 (Dawkins 1876; 1877; Heath 1879; Mello 1876a; 1877a). Within the Western Chamber they recorded three principal fossiliferous units with Late Pleistocene fauna and archaeology. From base to top these were termed the “Red Sand and Clay”, “Cave-Earth” and “Breccia”. Locally, between the Red Sand and Clay and the Cave-Earth, they distinguished an additional unit, the “Mottled Bed”. Along the southern side of the Western Chamber and in its entrance the Breccia largely replaced the Cave-Earth. Between the Cave-Earth and the Breccia was a “Conglomerate” of waterworn pebbles suggesting stream action.

Stratigraphic details recorded by Mello (1877a), Heath (1879) and Laing (1890) make it clear that the deposits in the Western Chamber were linked to, but younger than, those in the Central Chamber. From here, Laing recovered a fauna which included hippopotamus (H. amphibius) for which a Last Interglacial (Ipswichian) age appears probable. This fauna provides a useful terminus post quem for the fossiliferous sediments in the Western Chamber (Figure 3).
Figure 3. Robin Hood Cave: diagrammatic representation of the stratigraphy of the Western and Central Chambers with contexts of archaeological and palaeontological material (based on Mello 1876a and 1877a; Heath 1879; Laing 1890)

The accounts given by the three principal reporters of the contents of the Western Chamber contain a number of contradictions and uncertainties but, leaving these aside, it appears probable that spotted hyaenas (Crocuta crocuta) were the principal agents of faunal accumulation during the time when the Red Sand and Clay and the Cave-Earth were forming. Radiocarbon determinations for bones and teeth of hyaenas, and for the characteristically gnawed bones of their prey, show them to have used the Creswell caves for over twenty thousand years of the Middle Devensian. By contrast, humans, hunting or trapping mountain hares (Lepus timidus), were the main contributors of bones to the Breccia. This was during the Late Glacial.

In 1875, no artefacts were found in the Red Sand and Clay (Dawkins 1876: 255) and in 1876 only a small number were recovered (Dawkins 1877: 591). These had been made from quartzite and are assumed to have been Middle Palaeolithic.

Middle Palaeolithic and Upper Palaeolithic artefacts were collected from the Cave-Earth. The majority of the non-flint lithics from the cave were clearly found in this sediment. Within the Cave-Earth it was observed that “… on the whole …” artefacts made from flint were found in its upper part “… while the quartzite implements were mainly found in the lower portion …”
(Dawkins 1877: 591). However, it is unclear whether the excavators were observing a change in raw-materials during the Middle Palaeolithic or a boundary between the Middle Palaeolithic and Upper Palaeolithic.

The greater number of artefacts from the Breccia are clearly Late Upper Palaeolithic, but also recorded as from this unit are Early Upper Palaeolithic (“Jerzmanowician”) leaf-points and a few quartzite artefacts (Dawkins 1876: 254).

There is a single electron spin resonance (ESR) age determination for a tooth of woolly rhinoceros (Coelodonta antiquitatis) from the Red Sand and Clay of ~ 55 ± 4 ka ago (Jacobi and Grün 2003). Being from the Red Sand and Clay, it is from deeper than almost all the artefacts, including those considered Middle Palaeolithic, and so provides a terminus post quem for most of the human activity in the Western Chamber.

The second source of Middle Palaeolithic non-flint lithics from Robin Hood Cave was an excavation by John Campbell in 1969 and immediately outside the Western Entrance of the cave (Campbell 1970). Quartzite artefacts were found in the spoil of the nineteenth-century exploration and in sediments which had accumulated outside the entrance most probably during the final part of the Late Glacial. Most of the artefacts from these sediments are Late Upper Palaeolithic and there was extensive evidence for the contemporary hunting or trapping of mountain hares (Charles and Jacobi 1994). The Middle Palaeolithic artefacts and items of Middle Devensian fauna from the same sediments are interpreted as having been flushed out of older deposits within the cave. Two radiocarbon determinations on fauna collected at this time support the interpretation of some of the material from this excavation as being as old as the Middle Palaeolithic:

OxA – 3454 Coelodonta antiquitatis, upper cheek tooth, RH69, AI, OB; 42,900 ± 2400 BP (Hedges et al. 1994).

OxA – 14944 Crocuta crocuta, right P₂, RH69, AI, OB, Spit 16; > 49,800 (T.F.G. Higham pers. comm.).

Campbell (1977: 67) mentions a “quartzite scraper” (Ibid. Figure 152.1) found in the lowest layer of this excavation (layer A) which appeared to him to have been burnt. It was found to carry an “equivalent radiation dose” of 60 k. rad, indicating that either it had not been burnt at all, or that it had been burnt > 100 Ka ago. This suggested to Campbell the possibility of what was then termed a “Wolstonian” age for this heating. In reality, it is not an artefact and reconsideration of the single glow curve which was taken in 1970 suggested to Joan Huxtable that it had not been burnt (pers. comm.). Thus, there is no evidence of a pre-Devensian age for any of the quartzite artefacts.

The third and in many ways most useful excavation for understanding the age of the Late Middle Palaeolithic occupation of Robin Hood Cave took place in November, 1981. Its location was the south-western corner of the Western Chamber immediately adjacent to where two school-boys had found a human mandible. This is now known to be of Roman age (Hedges et al. 1997). The excavation, directed by Rogan Jenkinson, sampled 1.9m of sandy loam and loamy sand which was excavated in 29 spits numbered from top to base (Griffin 1988: 240–249). The site of the 1981 excavation is separated by a fissure from the remainder of the Western Chamber and it is not possible clearly to link the sediments investigated in 1981 to those described by Mello. However, a best guess might be that they were equivalent to a part of the Cave-Earth.
Evidence for human activity mainly took the form of small pieces of carbonized large-mammal bone and these have been identified from spits 3–23. Quartzite artefacts were found in spits 17 and 19 and a minute spall from retouching a flint tool in spit 15. Pollen evidence indicates a landscape with juniper, grasses and a wide range of herbaceous taxa (Jenkinson et al. 1986) and there is a small, but useful, fauna of both large and small-mammals. Abundant fragments of coprolites, as well as the teeth of the animal itself, confirm that human use of what is believed to have been a former cave-entrance was penecontemporaneous with that of the occupation of the cave by spotted hyaenas. There are now six radiocarbon determinations for single bones and teeth from this excavation. These are:

Spit 3 *Rangifer tarandus*, right scaphoid   OxA – 14879 33,100 ± 1400  1.
Spit 7 *Panthera leo*, left C   OxA – 12799 > 38,500  2.
Spit 9 *Crocuta crocuta*, right M₁   OxA – 12800 > 42,000  2.
Spit 12 *Crocuta crocuta*, right tibia   OxA – 12771 45,300 ± 1000  2.
Spit 26 *Crocuta crocuta*, right P₃   OxA – 12736 > 52,800  2.


These determinations confirm the Middle Devensian age of the fauna and, by extrapolation, the evidence for human activity. The shallowest and most recent of the radiocarbon ages is from a context where carbonized bones were found and may imply that use of this part of the cave continued as recently as the Early Upper Palaeolithic.

**ROBIN HOOD CAVE: COLLECTIONS AND SAMPLE**

The total of non-flint lithic artefacts identified as from Robin Hood Cave is 93. Those from the exploration of 1875–1876 are distributed as follows:

The British Museum 59
The Natural History Museum 1
Cliffe Castle, Keighley 6
Manchester Museum 4
Brewhouse Yard Museum, Nottingham 11
Natural History Museum, Wollaton Hall, Nottingham 1
Total 82

Artefacts collected in 1969 (9) and 1981 (2) are all at the Creswell Crags Museum and Education Centre.

The total of non-flint lithic artefacts from the excavation of 1875–76 is 82. Forty-seven of the pieces in the British Museum are part of the Christy collection. These came from Mello in January, 1876 and June, 1883 (through A.W. Franks) and from the Creswell Caves Exploration Committee in March, 1878. A small number of those given by Mello have blue-bordered octagonal labels marked RHC often followed by a catalogue number. The catalogue to which these refer no longer exists. Other artefacts are directly marked RHC or R.H.C. in ink. Some of the artefacts from Mello and all of those presented by the Creswell Caves Exploration Committee are unmarked and unlabelled and it is only the information in the *Slip Catalogue* of the Christy collection which provenances them to Robin Hood Cave. All the
artefacts illustrated by Dawkins (1876; 1877) are in the Christy collection. In addition to the material in the Christy collection the British Museum has a small group of non-flint lithics marked RHC, R.H.C., R.H.C or R.H.C. in thin ink. This group lacks history, but the markings are similar to some of those among the material originating from Mello.

The single artefact in the Natural History Museum is a chopping tool given by Mello in February, 1908. It is figured in the *Hand-Book to the Geology of Derbyshire* (Mello 1876b: pl. 1).

The non-flint lithic artefacts at Cliffe Castle, Brewhouse Yard Museum and Wollaton Hall are all from the collection of J. Magens Mello. Those at Cliffe Castle have come to us via William Cudworth and form a small, well-documented group. Pieces in all three museums have Mello’s octagonal labels and catalogue numbers.

The four pieces in the Manchester Museum are from the excavation of 1876 and, like many of the flints from this season, are marked with a small ink R — presumably by Dawkins.

The collections at four institutions have been omitted from this listing because of doubts as to the reliability with which the artefacts can be attributed to Robin Hood Cave.

In the collection of the British Geological Survey at Keyworth there are a single flake of grey quartzite and three small flakes of grey (“Wolds” type) flint. Originally given to the Geological Society of London in June, 1875 by Mello, these are catalogued as having come from a “… side cavern in Cresswell Crags, Derbyshire …”. This is assumed to have been Robin Hood Cave, but it need not be so.

Artefacts catalogued as from Robin Hood Cave and from the collection of W.L.H. Duckworth are in the University Museum of Archaeology and Anthropology, Cambridge. While five (a “flaked flake” and four flakes) are of quartzite and are almost certainly from Creswell Crags, the group also includes what are clearly non-British artefacts. Six pieces, including two of the non-British artefacts, have been illustrated by Jenkinson (1984: Figure 33) as from the “ossiferous fissure” (Cave C8: Figure 1) explored by Duckworth and Swainson (Duckworth and Swainson 1895). None is marked with a provenance.

I have also, with some regret, omitted two cordiform handaxes made from quartzite and in Derby Museum. Their attribution to “Robin Hood’s Cave” appears recent and only one can be confidently traced in the *Stock-book* of the museum. This is described simply as being from the “Creswell Caves” and was acquired in 1921 as a part of the collection of George Pullen of Corsham, Wiltshire. While there is nothing improbable in the provenance, it is worth noting that also described as from the Creswell Caves, and in the same collection, is a modern reproduction of a bifacial knife or spear-head (Jenkinson 1984: Figure 30.1).

Finally, I have left out a “pseudo-Levallois point” and blade, both made from quartzite and in the collection of the Harris Museum and Art Gallery in Preston. They are from the material which once formed part of the Cross Street Museum. They are unmarked and lack any reliable historical information that might confirm their provenance. However, there is little doubt but that they are from Creswell Crags.

The total of pieces confidently identified as from the excavation of 1875–76 is clearly only a small part of the total collected. It is impossible to assess how many non-flint lithics were
found in 1875. The total may have been 95 or 106, but the critical table is difficult to interpret (Dawkins 1876: 254). In 1876 the total appears to have been 479 (not including 53 “round stones”: Dawkins 1877: 591, table). Some of the missing pieces are among the large number of unmarked, non-flint artefacts now with a no better provenance than “Creswell Crags” or the “Creswell Caves”. However, even these are probably insufficient to make up the shortfall and it is clear that a quantity of material from this excavation remains unaccounted for. For the flint artefacts, this is further apparent from the existence of drawings and casts of untraced tools.

**RAW MATERIALS**

The non-flint lithic artefacts from Robin Hood Cave (all sources) have been made from the following raw-materials:

<table>
<thead>
<tr>
<th>Raw Material</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartzite</td>
<td>83</td>
</tr>
<tr>
<td>Clay ironstone</td>
<td>4</td>
</tr>
<tr>
<td>Carboniferous chert</td>
<td>2</td>
</tr>
<tr>
<td>Biotite — felsite</td>
<td>1</td>
</tr>
<tr>
<td>Rhyolite</td>
<td>1</td>
</tr>
<tr>
<td>Not identified</td>
<td>2</td>
</tr>
</tbody>
</table>

The majority have been made from fine- or medium-grained sedimentary quartzite, a raw-material that can be picked up locally in the form of pebbles and cobbles, the latter sometimes of a large size. Their source was the “Bunter” pebble beds of the Triassic. Normally grey or pinkish-grey this quartzite can also be pink, red, brown, purple or even liver-coloured. It flakes with a clear conchoidal fracture.

Clay ironstones (black-band ironstones) were the basis of the iron industries of Clay Cross, Renishaw and Sheffield in the nineteenth century. Nodules of clay ironstone could have been picked up by Palaeolithic people from soils in the exposed coalfield or as erratics derived from the Coal Measures (R. Firman pers. comm.). It is interesting that two of the four pieces of worked clay ironstone from Robin Hood Cave are handaxes (Figure 4) and that there should be a reference to a third, now lost (Mello 1877: 582). A handaxe of clay ironstone is recorded from Mother Grundy’s Parlour (Dawkins and Mello 1879: 729) and there is a handaxe-retouch flake from Pin Hole (see below). From Ash Tree Cave, 2.75km northwest of Robin Hood Cave, there is a group of small handaxe-retouch flakes of the same material. There would seem, therefore, to be a clear link between this raw-material and handaxe manufacture. Clay ironstone is fine-grained and flakes with a clear conchoidal fracture. Its nodules can also occur in the form of flattened spheres predisposing them to handaxe making. However, its softness would make artefacts made from it of limited practical use.

The other two pieces of clay ironstone from Robin Hood Cave are in the Manchester Museum. They were found in 1876 and are listed as “fragments” by Dawkins (1877: 591, table). One is a short, thick flake with slight longitudinal curvature, but not certainly from
Figure 4. Robin Hood Cave: 1–2. Clay ironstone handaxes found in 1875 and 1876. British Museum.
handaxe making. The other is a small heavily spalled block with traces of bifacial removals around part of its perimeter. It is unclear whether this is the remnant of a core or handaxe. Both small flakes of black, fine-grained chert are in the Manchester Museum. The nearest primary sources are the chert beds of the Carboniferous Limestone in the White Peak and these may have been the source of the chert used in the Creswell area during the Mesolithic. There is no evidence of Mesolithic activity at Robin Hood Cave and the morphology of one of the flakes suggests that it is possibly from the making or trimming of a handaxe. There is no reason why chert should not have been brought to Creswell Crags by earlier humans and a single artefact (a double convex side-scraper) from Ravencliffe Cave in Derbyshire (Storrs Fox 1930: 75) may be evidence that Middle Palaeolithic hunters operated in the Peak. However, it is more likely that the chert was picked up locally in the East Midlands having been brought to the area by pre-Devensian drift and, interestingly, Mello mentions “unfashioned pebbles” of black chert as occurring in the Robin Hood Cave sediments (1876a: 244).

Pre-Devensian drift may also have been the source of the biotite-felsite and rhyolite. These may have originated in Charnwood Forest, the Welsh Borders or the Lake District (R.W. Sanderson pers. comm.). Both would need thin-sections to establish their origin more closely. These two flakes, both at the Brewhouse Yard Museum, are referred to by Dawkins as “greenstone” (1876: 249).

The two unidentified items, a flake and a broken flake, are in the British Museum. It is hoped that these can be identified in the near future.

**CONDITION OF ARTEFACTS**

Most of the artefacts from Robin Hood Cave are sharp. However, many, including those made of materials other than flint, show small-scale natural damage that mimics notching, denticulation or even scraper retouch. Some of these pieces have been illustrated as tool-forms by Coulson (1990). Movement within the cave was the most likely cause of this damage and it has already been suggested that Middle Palaeolithic artefacts and Middle Devensian fauna from the Late Glacial sediments immediately outside the Western Entrance had been flushed out of the cave. One of the clay ironstone handaxes (Figure 4.1) appears rolled, and Mello (1877: 581–583) suspected that running water had sometimes been active in the cave.

**INVENTORY**

The non-flint lithic artefacts from Robin Hood Cave are listed on Table 1. The listing of the debitage and cores follows that used by Geneste (1988) in his description of the reduction sequence at the Grotte Vaufrey in the Dordogne, although there is no suggestion that the chaîne opératoire at Creswell ended in the production of Levallois flakes. The only change that has been made is insertion of a category of “broken flakes”. Listing of retouched tools follows the typology of Bordes (1961).
Table 1. Robin Hood Cave: non-flint lithic artefacts

DEBITAGE AND CORES

There are seven pieces of non-flint debitage that are not quartzite. These are three flakes (clay ironstone, rhyolite and unidentified raw-material), two broken flakes (Carboniferous chert and unidentified), a core edge removal flake (biotite-felsite) and a handaxe-retouch flake (Carboniferous chert).

There are 38 flakes and four broken flakes of quartzite. The largest of the flakes has a maximum dimension (breadth) of 130mm which gives some clue to the size of cobbles available. This is the largest artefact from the cave.

Five flakes and two broken flakes are wholly covered in “skin” and 21 flakes and one broken flake are more than half covered (the term skin is used here as equivalent to cortex on flint).

In the case of two further quartzite flakes the dorsal surface appears to be made up wholly of natural fractures. Seven flakes have skin along one lateral margin so that the pieces mimic “naturally backed knives”. However, in that this margin is in no case perpendicular to the ventral surface, they fail to qualify in the strict typological sense, even though a cutting function is easy to envisage. What they do demonstrate is that the flaking faces of the cores from which they came had been rotated during knapping — clockwise in two cases and anti-clockwise in five.

Information on striking platforms can be gathered for 40 of the 42 whole and broken quartzite flakes. In 28 cases the butts are plain. Among these it is difficult to tell whether use had been made of a previous flake scar to form the platform or of a fortuitous, but convenient break
surface. One flake has what would have to be described as a faceted butt and a second a dihedral/faceted butt. What is ambiguous in these cases is whether we are seeing deliberate platform preparation or whether the flakes have come from migrating platform cores where a previous flaking face has now become the striking platform. These pieces might then be described as flakes with a “relict core edge” (Ashton and McNabb 1996: 244). Five quartzite flakes have been removed using the unmodified skin to provide the point of impact for the blow which has detached them. Five flakes retain their bulbs but no platform remnants.

The dorsal scar pattern gives further information on knapping procedures (Table 2). Half of the flakes have as their only dorsal removals flake scars that can be interpreted as originating from the same striking platform as the blow which had detached the flake. In possibly as many as eight cases, there are dorsal removals impinging from one lateral margin, showing that the flaking face had been rotated during the working of the core and use had been made of at least two platforms approximately at right angles to each other.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flakes removed from proximal end only</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>Flakes removed from proximal end and one lateral (left or right) margin</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Flakes removed from one lateral (left or right) margin only</td>
<td>6</td>
</tr>
<tr>
<td>10</td>
<td>Dorsal surface wholly skin or natural fractures</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Not determined</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 2. Robin Hood Cave: whole quartzite flakes, dorsal scar pattern using scheme of Ashton and McNabb (1996: 242–243)

Dawkins (1876: 251) drew particular attention to an outside (primary) flake (Coulson 1990: pl. 6–3.4 + 7977), which was thick at the butt end and possessed a thin fan-like distal end — what he described as a “… curved hatchet-edge …”. That the distal end was the functional edge was suggested by its notched outline. This notching is here interpreted as natural damage. Dawkins identified the object as a “chopper” comparing it to examples from Le Moustier, La Madeleine and Gravel Hill, Brandon. He remained interested in similar flakes and went on to see similarities for others with the split-cobble hide-scrapers (teshoa) described as still being in use among the Shoshones (Jones 1875: 261; Dawkins 1877: 592–593). He suggested a similar use for the flakes from Robin Hood Cave.

There is a single naturally backed knife of quartzite. This elongated flake differs from some of the flakes listed above only in the steepness of its “backed” margin relative to the ventral surface.

There are two quartzite blades. The longer (84.5mm) is a true blade (lame vraie: Bordes 1961, 6) in the sense that the margins and single dorsal ridge (arris) are parallel to each other and perpendicular to the butt.

Of the four quartzite “pseudo-Levallois points” one bears more than a superficial resemblance to an unretouched “Levallois point”, but differs from this type, as do the other three examples, in that the axis of percussion does not bisect the point. It has been mis-orientated when illustrated (Coulson 1990: pl. 6–3.1 + 7980). There is no unambiguous evidence that the Levallois technique was applied to non-flint raw-materials at Creswell Crags and indeed there are only three potentially Levallois flint artefacts from Robin Hood Cave. (Another of the pseudo-Levallois points is illustrated in Cook and Jacobi 1998: Figure 18.6.3). There are also
four “core edge removal flakes” (éclats débordants). One of these, in a remarkable olive quartzite, has been illustrated by Cook and Jacobi (1998: Figure 18.6.2). While treated here as debitage, a study of core edge removal flakes of flint from the Mousterian site of Corbehem in North France suggested that some had been used, like naturally backed knives, as tools (Beyries and Boëda 1983).

There are two clear examples of discoidal cores (Boëda 1993: 393–398; Locht et al. 1994: 20; Cook and Jacobi 1998: 128–131). They differ slightly from each other in the way in which they have been exploited. In outline, when viewed from above, both are pentagonal. Their cross-sections are asymmetrically bi-convex. Around the greater part of the perimeter of each between the two convex surfaces is a sinuous intersecting edge (charnière: literally, hinge-joint). This edge forms the line of the striking platform. The line was constantly changing as each removal from the core detached a part of it. The axis of removal for flakes from discoidal cores crosses the intersection of the convex core surfaces and Boëda (1993: 394) has referred to this as the intersecting plane of detachment (plan sécant) and contrasted it with the method used in Levallois technique where removals tended to be parallel with the intersecting edge between the two core surfaces. The flakes from discoidal cores can be “centripetal” with the axis of removal aimed towards the mid-point of one of the convex faces, or “chordal” when the axis is offset. Chordal flakes include the pseudo-Levallois points and core edge removal flakes noted above.

On the first of the discoidal cores from Robin Hood Cave, made from liver-coloured quartzite, the flakes on one face appear solely to prepare the striking platform for the removal of flakes from the other face. The flakes removed in preparing the platform are short and broad; those removed from the principal flaking face include at least three chordal flakes. The cobble has been used as a hammerstone (Mellars 1974: Figure 5.5; Coulson 1990: pl. 6–3.10 + 7976).

The second discoidal core differs in that what appear to be useable flakes have been detached from both convex surfaces, possibly by first taking flakes from around one face (the largest removal ending in a prominent hinge fracture) and then from the other. The flakes removed from this second face were both centripetal and chordal. This quartzite cobble had been used as a hammerstone prior to the detachment of flakes.

Two discoidal cores have also been recognized from Church Hole (Jacobi in press) and a single chordal flake (Cook and Jacobi 1998: Figure 18.6.1). Chordal flakes, both pseudo-Levallois points and core edge removal flakes, were recognized from Oldbury in Kent and many of the smaller flakes here could have been struck from discoidal cores (Cook and Jacobi 1998). The collection from Oldbury, largely on the basis of its handaxes, is thought to date from the mid-part of the Last Cold Stage (Devensian). Chordal flakes have also been recognized from the Hyaena Den at Wookey Hole, Somerset, and from Uphill quarry, near Weston-super-Mare in North Somerset. Both localities, on the basis of their large mammal faunas, are thought to have been used by Late Middle Palaeolithic humans at about the same time as Robin Hood Cave. In the case of the Hyaena Den this correlation is supported by radiocarbon determinations (Jacobi et al. in press). These observations are not intended as an argument that use of discoidal core technology is a hallmark of the Late Middle Palaeolithic, but rather that it was used at this time as one of a number of core reduction strategies which elsewhere, as at Bramford Road and Hadleigh Road in Ipswich and the Conningbrook Manor Pit, Kennington near Ashford, Kent, could include Levallois technique.
There are three possible core fragments. One, described by Coulson as a “globular” core (1990: pl. 6–3.9 +7991), may be a vertically split fragment of another discoidal core which this time has had flakes removed alternately from the two convex faces. The second might also be from a discoidal core, but split transversely approximately along the line of its intersecting edge. The third and most uncertain is the heavily spalled “block” of clay ironstone at Manchester Museum.

There is a single handaxe-retouch flake, thin with gentle longitudinal curvature and hinge termination. It is of interest as the handaxe from which it came had been made from Carboniferous chert and there are no handaxes of this material among the small sample from Creswell Crags. Other handaxe-retouch flakes from Robin Hood Cave are of flint and several are from tools much larger than the two flint handaxes known from the cave. Either these had become much worked down while at the cave or larger flint handaxes had passed through the site.

Finally, there are three pieces of flaking debris and six fragments.

HAMMERSTONE

There is a single hammerstone. This is a naturally broken cobble of quartzite with a single small patch of contusions on its skin. In addition, two cores and six of the chopping tools (see below) appear to have been used as hammerstones and a single flake is from a cobble that had previously been similarly used.

RETOUCHED TOOLS

There are three scrapers, each differing from the others.

One of the most frequently illustrated pieces from the Creswell caves is a convergent scraper (Dawkins 1876: Figure 2; 1880: Figure 43; Mello 1877b: Figure 4; Evans 1897: Figure 413a; Smith 1902: Figure 76; Jenkinson 1984: Figure 19.3; Coulson 1990: pl. 6–3.3 +7970; Wymer 1999: Figure 69). Made from an outer flake or split cobble of medium-grained grey quartzite it is the largest retouched artefact from Robin Hood Cave. On the right hand margin is a straight scraper edge and on the other a shorter length of convex scraper edge. These converge at the distal end of the piece, but the present rounded tip may have been slightly fore-shortened by natural damage. Because of its silhouette this piece has sometimes been mistaken for a handaxe (cf. an elongated cordiform) and it is because of this outline that it was originally described by Dawkins as a “hache”.

The side-scraper on the ventral surface is, from the disposition of the retouch, more accurately described as an “off-set side-scraper on the ventral surface” in that there are two convergent modified edges, but the line bisecting the angle between them is clearly off the axis of percussion of the flake (Coulson 1990: pl. 6–3.3 38). The presence of a scraper made on the ventral surface at Robin Hood Cave provides an obvious technological link with Pin Hole where there are six or seven examples. As Coulson points out (1990: 269) the underside of the scraper is naturally strengthened by being formed by the outside skin of the cobble.

The third scraper is clearly a transverse scraper in that the scraper retouch is opposite to where the butt of the flake would have been had it not been removed by bifacial flaking. This flaking which “thins” the piece, may have been intended to allow the scraper to be hafted or it may be
wholly unconnected with the scraper edge – a scraper and “flaked flake” (Ashton et al. 1992a) on the same support. The two areas of modification contact, but do not impinge on each other (Jenkinson 1984: Figure 18.3; Coulson 1990: pl. 6–3.4 +8128).

There are three (possibly four) flint scrapers from Robin Hood Cave that seem likely to be Middle Palaeolithic. One of these is a remarkable single straight side-scraper made on a large flake of translucent flint, which was found in April, 1889 by W.F. Jackson of Dore near Sheffield. It is illustrated by Armstrong (1925: Figure 19).

The piece described as a “notch” is a flaked flake with three “Clactonian” notches on its ventral face (Jenkinson 1984: Figure 21.1). In that these notches are separate from each other they do not constitute denticulation. Use-wear studies of similar notches from French Mousterian sites suggest that most were employed for planing and scraping wood possibly the shafts of spears (Beyries 1987; Anderson-Gerfaud 1990). Flint flakes from Robin Hood Cave have notches or denticulation and are also believed to be Middle Palaeolithic. They are of interest in having mostly been made from an opaque grey flint similar to that from the Wolds of North Lincolnshire and East Yorkshire. However, the cortex of this flint is waterworn and small, rolled fragments of similar flint were collected from the cave-earth at Pin Hole where they appear to have been natural inclusions in the filling. It is assumed that this flint was introduced into the area by glacial action.

There are eight “chopping tools” from Robin Hood Cave, six of which were found in 1875–76 (Jenkinson 1984: Figure 20.3 & 21.4) and the other pair in 1969 in the spoil from this excavation. All are bifacially modified. Dawkins believed that chopping tools had been used as hammers to break open bones to access the marrow (1877: 593–4), but more recent experimental work suggests that this can be more successfully done by using an unmodified cobble (Ashton et al. 1992b). Other tasks attributed to chopping tools such as wood chopping and butchery can be more efficiently achieved using large flakes (Ibid.) leading to a rejection of chopping tools as a functional type. Therefore, despite their inclusion in Bordes’ type-list as tools, we should consider the equally plausible interpretation of many of these pieces as cores.

The chopping tools from Robin Hood Cave vary considerably in size, with the maximum dimension of the smallest being 48mm and of the largest 89mm. The largest chopping tool is markedly asymmetric in its flaking pattern and in this asymmetry far more resembles a core. It has been developed on a cobble of greyish-brown quartzite. A single large flake has been detached creating a striking platform and effectively dividing the cobble along its longer axis. Using this platform, three short parallel flakes have been detached from one face. Identical cores with a single (broad) flaking face occur in the collection from Church Hole. The cobble from Robin Hood Cave has then been turned and what was the flaking face has become the platform for the removal of a single flake across the surface of the original platform. In its final form the piece is typologically a chopping tool.

Another of the chopping tools, on a small cobble of grey quartzite, is similarly asymmetric (Jenkinson 1984: Figure 20.3; Coulson 1990: pl. 6–3.6 +7988) and it too can be interpreted as a core. Two semi-converging flake scars form the striking platform and from this a single flaking face has been developed extending around about half the perimeter of the cobble. From this at least five short flakes have been removed.
The other chopping tools appear to have been prepared by “classic alternate flaking” or “complex alternate flaking” (sensu Ashton & McNabb 1996: 244–5) with no clear distinction between platform and flaking face. The flakes that have come from several of these chopping tools would have been very small and so would not seem to have been very useful. This may be an argument that some of the smaller chopping tools from Robin Hood Cave had in fact been made for use (cf. Toth 1985: 107).

Curiously, six of the eight chopping tools appear to have been used as hammerstones on part of their unflaked surface. This is most apparent on the single chopping tool in the collection of the Natural History Museum which was figured by Mello (1876: pl. I) as a “quartzite hammer” (see also Mello 1876a: 243–4).

There are four, possibly five, non-flint handaxes from Robin Hood Cave. They can be summarized as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cordiform handaxes</td>
<td>2</td>
</tr>
<tr>
<td>Limande</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous handaxe</td>
<td>1</td>
</tr>
<tr>
<td>Partial handaxe</td>
<td>1</td>
</tr>
</tbody>
</table>

The best known of the handaxes is a damaged cordiform of clay ironstone (Figure 4.2). It is one of a pair of “… leaf-shaped …” handaxes made from this material and found in the “Cave-Earth” in 1876. This one was found towards the back of the Western Chamber in the westernmost of the two openings that lead into the passage that forms a connection with the Central Chamber (Mello 1877a: 582).

The second handaxe is here classified as cordiform lacking its lip (Dawkins 1876: Figure 4; Mellars 1974: Figure 5.4; Jenkinson 1984: Figure 21.5; Coulson 1990: pl. 6–3.8 +7972). A slightly tighter description might be as a damaged “flat-butted cordate handaxe” (cf. Wymer 1968: 59). It has been made transverse to the longitudinal axis of an outer flake of grey quartzite. It is the handaxe from Robin Hood Cave with the clearest shape imposed upon it and this has been achieved with the minimum of removals, leaving much of one face formed by the skin of the cobble from which it has been made and much of the other made up of the unmodified ventral surface of the flake. Such are the areas of unmodified surface that this might qualify as a “partial handaxe” in the Bordes’ typology. The red matrix noted by Coulson (1990: 302) is casting wax. Dawkins had casts made of many of the significant pieces from the 1875 season of excavation which he could not procure for the Manchester Museum. Campbell was similarly misled by this material when attributing Early Upper Palaeolithic leaf-points to sediments (1977: 148–9).

The third handaxe is a “limande” (literally, dab fish: Figure 4.1). It has been made from clay ironstone. Another limande is known from the Hyaena Den (Tratman et al. 1971: Figure 43.6), but is made from Carboniferous chert. As already noted, Middle Palaeolithic use of the Hyaena Den is likely to have been of about the same age as that of the Creswell caves. Both handaxes are very small and, interestingly, Bordes (1961: 63) notes that where they occur in the Mousterian of Acheulian Tradition, which in southwest France was the contemporary of the two British find-spots, they tend to be diminutive.
 Classified as “miscellaneous” is a small pointed handaxe made transverse to the longitudinal axis of a thick flake of purple quartzite (Jenkinson 1984: Figure 19.2; Coulson 1990: pl. 6–3.9 R.H.C. Bif.).

The artefact categorized here as a “partial handaxe” (Jenkinson 1984: Figure 20.2; Coulson 1990: pl. 6–3.6 +7975) was described by Coulson as a “chopping tool”. It is a subtriangular cobble of pinkish quartzite with bifacial chipping along one converging margin. A single (?unintended) blow has removed the apex of the cobble and from this originates a single step-terminating longitudinal removal. There are incipient cones of percussion visible on the skin of its other, unmodified converging margin and it is possible that these represent unsuccessful attempts to initiate flaking on this side of the cobble. The piece is here interpreted as a failed attempt to produce a handaxe from a cobble whose silhouette should have pre-disposed it to this end. It was found in 1875 and is described by Dawkins (1876: 251) as “…intended for use in the hand; its point, however, has been broken away…” — in other words, a handaxe with damaged tip.

There are two flint handaxes from Robin Hood Cave (Figure 5). Both are small cordiforms and much re-sharpened, so much so that their lateral margins are now quite steep. The handaxe found in 1876 (Figure 5.1) has also been re-sharpened by removal of longitudinal spalls originating from its tip. The same technique was used on a tiny flint handaxe from Uphill. Interestingly, while most notched and denticulated flint tools from Robin Hood Cave have been made from grey flint (see above), both handaxes have been made from semi-translucent flint. This matches the observation made for some French Mousterian sites that the simpler tool-forms, such as notches and denticulates, had been manufactured from poor-quality raw-materials while more complex artefacts, such as handaxes and scrapers, had been made from high-quality raw-materials. This could be interpreted as a difference between *ad hoc* tools and curated items (Mellars 1996: 136–8).

**PIN HOLE**

Pin Hole (SK 5331 7413) is also on the north side of Creswell Crags and at its western end (Figure 1). It is a narrow, solutionally enlarged fissure some 46m in length. This is the “Main Passage” which widens to form the “Outer” and “Inner Chamber”. A short passage leads off eastwards from the Inner Chamber (Figure 6).

There have been several excavations in Pin Hole, initially by Mello and Heath in 1875 (Mello 1875; 1876a), then by Armstrong from 1924 to 1936 (Armstrong 1925; 1926; 1932; 1939; 1956), by Collcutt in 1974 (Collcutt 1975) and most recently by Jenkinson from 1984 to 1989.

All of the artefacts listed below were collected by Armstrong who, in the Main Passage, investigated a length of 24.4m, including a re-examination of its first 7.0m, which had been only partially excavated by Mello and Heath. Armstrong also cleared the “Eastern Passage” and the “Trefoil Chamber” at its termination.
Figure 5. Robin Hood Cave: 1–2. Flint handaxes found in 1876 and 1969. 1. Manchester Museum; 2. Creswell Crags Museum and Education Centre
It is not intended to discuss the stratigraphy and dating of Pin Hole in detail here, as these are considered in other publications (Jacobi et al. 1998; Jacobi et al. in press). Likewise, it is intended that the artefacts from the cave should be the subjects of a longer paper.

Suffice it to say, Armstrong described two principal sediment bodies — an “Upper (Red) Cave-Earth” and a “Lower (Yellow) Cave-Earth” with a maximum thickness totalling 5.2m. It would seem that Early and Late Upper Palaeolithic artefacts are to be associated with the Upper Cave-Earth while those of the Middle Palaeolithic came mainly from the Lower Cave-Earth. The Lower Cave-Earth is also the source of the large vertebrates that define the Pin Hole mammal assemblage-zone (Currant and Jacobi 2001).
Uranium-series dating of broken calcite speleothems, which had probably originally been deposited in phreatic side-tubes or roof-avens and had subsequently fallen to the contemporary cave-floor, becoming incorporated into the Cave-Earth as this accumulated, indicates that deposition of the Lower Cave-Earth began after ~ 64 ka ago (Jacobi et al. 1998). Electron spin resonance dating of wild horse (*Equus ferus*) and woolly rhinoceros teeth, together with what is now a very large series of radiocarbon determinations on bones from the Lower Cave-Earth suggest a most likely age for the Middle Palaeolithic occupation of between 50–40 ka ago (Jacobi et al. in press).

There are no stratigraphic grounds for subdividing the artefacts from the Lower Cave-Earth and they can, therefore, be treated as forming a single sample. What is unclear, however, is whether the diffuse distribution of artefacts should be interpreted as indicating visits over a long period of time or whether the debris of a single occupation has been re-distributed through a greater thickness of sediment by processes of mixing. That some mixing may have taken place is suggested by the radiocarbon determinations where older and younger ages are sometimes inverted.

The important difference between the lithic samples from Pin Hole and Robin Hood Cave is that there is every reason to believe that we have all, or very nearly all, the Middle Palaeolithic artefacts from Pin Hole. These are in the collections of:

Derby Museum and Art Gallery  
Manchester Museum  
Sheffield City Museum

The raw-materials from which the Middle Palaeolithic artefacts have been made are flint, quartzite and clay ironstone. Coulson (1990) has figured artefacts made from schist and shale as being from Pin Hole. These are, in fact, from Bambata Cave in Zimbabwe (Armstrong 1931). Several of the artefacts illustrated by Coulson also appear to be geofacts (e.g. 1990: pl. 6–2.5 PH(L)648; pl.6–2.11 34/37 5°0’). As a result, the total of non-flint artefacts considered here is significantly smaller than that given by Coulson. These are listed on Table 3.

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortical flakes (&gt;50%)</td>
<td>7</td>
</tr>
<tr>
<td>Partial cortical flake (&lt;50%)</td>
<td>1</td>
</tr>
<tr>
<td>Ordinary flakes</td>
<td>2</td>
</tr>
<tr>
<td>Diverse core type</td>
<td>1</td>
</tr>
<tr>
<td>Handaxe-retouch flakes</td>
<td>2</td>
</tr>
<tr>
<td>Other retouch/re-sharpening flake</td>
<td>1</td>
</tr>
<tr>
<td>Hammerstone</td>
<td>1</td>
</tr>
<tr>
<td>Convergent convex side-scraper</td>
<td>1</td>
</tr>
<tr>
<td>Offset side-scraper</td>
<td>1</td>
</tr>
<tr>
<td>Side-scraper on the ventral surface</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Side-scraper with bifacial retouch</td>
<td>1</td>
</tr>
<tr>
<td>Chopping tool</td>
<td>1</td>
</tr>
<tr>
<td>Handaxe</td>
<td>1</td>
</tr>
</tbody>
</table>

(Figure in parentheses indicates uncertain identification)

Table 3: Pin Hole: non-flint lithic artefacts
The principal feature of the collection, which this table brings out, is that almost half of the non-flint lithic artefacts from Pin Hole fall into the category of retouched tools and that most of these are various forms of scraper – with a clear majority side-scrapers on the ventral surface (Figure 7). There are spalls from trimming or re-sharpening handaxes and a scraper. One of the handaxe-retouch flakes is the only piece of clay ironstone from the cave.

In the case of Robin Hood Cave it is difficult to give a count for flint artefacts likely to be of Middle Palaeolithic age, as the cave had also been occupied during the Upper Palaeolithic and there is now no stratigraphic separation possible among these finds. For Pin Hole, it is possible to identify the flints from deeper than the distribution of Upper Palaeolithic artefacts. These are assumed to be Middle Palaeolithic and are listed on Table 4. The points to note are that the only retouched tools are scrapers and that among the debitage the greater number of pieces are retouch or re-sharpening flakes.

At Pin Hole there has been some reworking of older materials into younger contexts. This is most clearly shown by radiocarbon-dated specimens of Middle Devensian fauna found among Late-Glacial fauna and artefacts in the Upper Cave-Earth. There also appear to be a number of Middle Palaeolithic flint tools from similar contexts and these are summarized on Table 5. Again, all are scrapers (see also Campbell 1977: Figure 101.1 and 3 and Figure 102.1). Middle Palaeolithic debitage from such contexts is not so easily recognizable and it is not possible to give an accurate count for this.

The only artefact found by Mello and Heath at Pin Hole is another single convex side-scraper (Dawkins 1876: Figure 8).

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortical flake (&gt;50%)</td>
<td>1</td>
</tr>
<tr>
<td>Ordinary flakes</td>
<td>5</td>
</tr>
<tr>
<td>Broken flakes</td>
<td>2</td>
</tr>
<tr>
<td>Handaxe-retouch flakes</td>
<td>3 (1)</td>
</tr>
<tr>
<td>Other retouch/re-sharpening flakes</td>
<td>7 (3)</td>
</tr>
<tr>
<td>Flaking debris (&lt;30mm)</td>
<td>3</td>
</tr>
<tr>
<td>Small flake/fragment (&lt;30mm)</td>
<td>1</td>
</tr>
<tr>
<td>Single convex side-scrapers</td>
<td>2</td>
</tr>
<tr>
<td>Offset side-scraper</td>
<td>1</td>
</tr>
<tr>
<td>Convex transverse scraper</td>
<td>1</td>
</tr>
</tbody>
</table>

(Figures in parentheses indicate uncertain identifications)

*Table 4. Pin Hole, Lower Cave-Earth: flint artefacts*

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single convex side-scrapers</td>
<td>2</td>
</tr>
<tr>
<td>Convergent convex side-scrapers</td>
<td>2</td>
</tr>
<tr>
<td>Side-scraper fragment</td>
<td>1</td>
</tr>
</tbody>
</table>

*Table 5. Pin Hole, Upper Cave-Earth: possible Middle Palaeolithic tool-forms*
Figure 7. Pin Hole: 1–2. Quartzite side-scrapers on the ventral surface. Manchester Museum
ROBIN HOOD CAVE AND PIN HOLE COMPARED

As already noted, the sample of non-flint lithic artefacts found in Robin Hood Cave in 1875–1876 is only a small part of those excavated. All the items illustrated by Dawkins (1876; 1877) and Mello (1876b; 1882; 1891) or known from casts can be traced today. Thus, it is likely that most of the significant pieces recovered are accounted for. The obvious exception is the third handaxe of clay ironstone mentioned by Mello (1877a: 582). It would seem that the present shortfall is most likely to be among the debitage. Nevertheless, among what survives four out of five pieces are debitage or cores.

Again, as already noted, the information given about the non-flint lithic finds from the 1875 season is difficult to interpret (Dawkins 1876: 254). However, artefact totals for 1876 are reported with greater clarity and the number of non-flint lithics appears to have been 479. Of these 442 are described as “chips” and a further 19 items as “hammerstones”. In other words, there was a very substantial debitage group. Mello (1877a: 582) comments that “… flint chips and some fine flakes were found pretty generally distributed in the cave-earth; but they were far outnumbered by the rudely fashioned implements of quartzite. There were so many of these in all stages of wear as almost to suggest a manufactory of them …”. Dawkins (1877: 593) added that “… the large number of splinters in the cave proves that it was used by the hunters as a place of resort for a considerable time and that they brought the raw material along with them, and made their cutting-tools as they were wanted, on the spot …”.

By contrast, there are very many fewer Middle Palaeolithic artefacts from Pin Hole. A significant proportion are retouched tools and there is a clear dominance of scrapers. This specialization was observed by Jenkinson who speculated that skin-working might have taken place in the cave, an activity which requires a cool, sheltered environment for raw skin preservation and to combat insect infestation (1984: 75). It would clearly be interesting to examine some of the quartzite scrapers for microscopic use-wear traces in an attempt to pin down what had been going on. The flint is all altered by patination.

There are no technological refits among the non-flint lithic material and only one refit among the flint. The impression drawn from the larger debitage is, therefore, one of items being brought to the cave, having been made elsewhere, or of single removals from cores that have themselves been taken on elsewhere. There is only one re-sharpening spall from a non-flint scraper (the scraper itself is not present in the collection) and it is probable that these were made elsewhere and introduced into the cave as finished tools. Among the flint debitage there are flakes and chips from the sharpening of scrapers and handaxes, and an absence of refits strongly suggests that the tools from which they came had been taken away after use in the cave. There are no flint handaxes in the collection. The impression received from the Middle Palaeolithic lithics at Pin Hole is that of tools coming and going. The same impression comes across for the Late Upper Palaeolithic where, among a much larger sample of material, there is only one technological refit.

Robin Hood Cave and Pin Hole are very different sorts of caves. In its Western Chamber, Robin Hood Cave possesses the largest enclosed covered space in the Crags (Figure 2). It is a “social” cave in that there is space for a group to have spread out for conversation round a fire. It is reconstructed in this way in a painting by Bob Nicholls on the Creswell Crags website (www.creswell-crags.org.uk/virtuallytheiceage). Pin Hole, though its passage widens slightly in the Outer and Inner Chambers (Figure 6), is a narrow cave. Could it be that the
form of the two caves had been a determining factor in the uses to which each was put — Robin Hood Cave being the better suited to the making of a camp?

A curious difference is that there are only two pieces of carbonized bone from the Lower Cave-Earth at Pin Hole. By contrast, there are fragments of carbonized bone from 12 of the 29 spits of the very small excavation in 1981 at Robin Hood Cave. In several cases, there are multiple fragments from the same spit. Mello, describing the contents of the Cave-Earth at Robin Hood Cave, mentioned that it contained “… many small fragments of charcoal …” (1876a: 244). It is unclear from the usage of the time whether he was referring to wood or bone charcoal. Dawkins, talking generally of the cave, mentioned that the “… fragments of charcoal and calcined bone show[ed] also that game was roasted inside the cave …” (1877: 594).

We are still a long way off understanding the uses to which sites were put in the British Late Middle Palaeolithic. There would seem, however, to be a clear difference in the archaeological signature as between Pin Hole and Robin Hood Cave — and this is a valuable observation in its own right. It is possible to envisage Pin Hole as used by people who (usually) arrived substantially “geared-up” and Robin Hood Cave as used by people who, by contrast, undertook a significant amount of stone working at the site. Were tools produced at Robin Hood Cave used at Pin Hole?

Inevitably, there is considerable imprecision in the dating of the Middle Palaeolithic archaeology of both caves. Therefore, it is unknown whether use of the two caves was contemporary and likely to have been connected. It would certainly be an interesting exercise to look for refits between the two caves, but even this, if successful, need not be a sure indicator of connectedness, as raw-material still exposed on the surface of one may have been collected and re-used long after that cave had been abandoned (cf. Scheer 1993).

It is tempting to interpret Robin Hood Cave as the local operational base for Late Middle Palaeolithic activity in the Creswell area. With this in mind, an attempt was made to refit the clay ironstone handaxe-retouch flakes from the small site at Ash Tree Cave to the handaxes from Robin Hood Cave to see whether the users of Ash Tree had travelled out from Robin Hood Cave. This was unsuccessful. Interpretation as a local base would certainly be possible, but it would largely depend on the fact that Robin Hood Cave is the East Midlands site with the highest artefact count for the Middle Palaeolithic. It is also the Creswell Cave with the largest number of tool-forms likely to date from the first half of the Late Glacial Interstadial, but it would seem that the only subsistence activity that took place from the cave at this time was the trapping of hares. More recent consideration suggests that the cave was then perhaps no more than a stop-over for people whose movements after game took them through the gorge (Pettitt in press). For the Late Glacial the recent discovery of the very extensive flint scatter at Farndon Fields just south of Newark (Garton 1994) perhaps provides a more convincing operational base for the hunters of this time in the East Midlands. A similar find could transform our understanding of the local Late Middle Palaeolithic.

For the moment, this paper flags up the apparent differences between the lithic inventories of two adjacent cave-sites whose use by (Neanderthal) humans may have been of broadly similar age. In the end, as already noted, it is the lack of resolution in the chronology which is the biggest stumbling block in understanding the relationship between the two caves. Was use of the caves contemporary, the caves being used for different purposes, or was the gorge visited by different human groups, with different goals and who used different caves?
Finally, occupation of different caves may have had less to do with human choice and more to do with which caves were, or were not, occupied by spotted hyaenas whose use of the Crags appears to have been penecontemporaneous with that of Middle Palaeolithic humans (see above). A presence of denning hyaenas in the other caves may have been the reason for Middle Palaeolithic use of Church Hole, the most unfavourable of the occupied caves in its narrowness and north facing aspect. The Middle Palaeolithic artefact assemblage from here is smaller than those from Pin Hole and Robin Hood Cave (Jacobi in press) and, intuitively, bears more resemblance to that from Robin Hood Cave. Perhaps this is a hint that it was Robin Hood Cave that was made uninhabitable by a presence of hyaenas.

The Middle Palaeolithic of Creswell Crags is of particular interest and importance for its seemingly recent age – Middle Devensian. It is of further special interest in showing that even at its end the Middle Palaeolithic could still make heavy use of local sources of raw-materials. That this should have been so may be seen as evidence of the adaptability of this technology and it is this flexibility that makes the British Late Middle Palaeolithic so fascinating. Similar flexibility existed at earlier times (MacRae and Moloney 1998) and it was this which particularly intrigued “Mac”. Such use of local materials could be interpreted as a measure of the confidence that earlier Palaeolithic humans felt in their knowledge of the local landscape and its resources.

ACKNOWLEDGEMENTS

The writing of this paper was funded as part of the Leverhulme Trust project Ancient Human Occupation of Britain (AHOB). It was written in the Department of Prehistory and Europe at the British Museum and I thank Nick Ashton for his constant encouragement. I would like to thank all the curators and staff of the institutions whose collections have been used in this study; the Trustees of the British Museum for permission to figure material from the collection; John Prag at Manchester Museum and Ian Wall at the Creswell Crags Museum and Education Centre for allowing me to include drawing of objects in their charge. The drawing of the clay ironstone and quartzite artefacts are by Mike Angel and those of the flint handaxes by Hazel Martingell. The other figures are by Robert Symmons, formerly a member of AHOB. I am grateful to him for all his help as I am to Silvia Bello (AHOB) who typed and prepared the manuscript. Lastly, I thank Kate Cramp and Matt Pope for inviting me to contribute to this volume and their patience in waiting for the result.

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