Proceedings of the Prehistoric Society 61, 1996, pp. 133–166

Seeing the Sites: Survey and Excavation on the Anglezarke Uplands, Lancashire

By CHRISTINE HOWARD-DAVIS[1]
with contributions by M. BAIN, H. BAMFORD, B. BARNES, R.H. LEECH, *and* J. QUARTERMAINE

The Anglezarke/Rivington uplands of central Lancashire have, in recent years, suffered severe erosion. In response a programme of field survey was undertaken during 1983 and 1985, supplemented by palynological investigation, modern vegetation survey, and sample excavation. Two sites were investigated in detail, a cairn of likely Bronze Age date and a flint scatter of earlier Mesolithic type. The field survey demonstrated human activity on the upland throughout the prehistoric period and emphasised the heavy post-medieval exploitation of the moorland. Sample excavation confirmed the prehistoric activity and, in the case of the Mesolithic site at Rushy Brow, demonstrated the possibility of recognising and reconstructing periods of prehistoric activity of very short duration — perhaps only a few hours.

Between 1983 and 1985 a programme of field survey and associated excavation was undertaken on Anglezarke and Rivington Moors in southern Lancashire. It was initiated as a response to the drastically accelerated erosion of upland blanket peats on widespread areas of the moorland landscape. The work was undertaken by members of the Cumbria and Lancashire Archaeological Unit (now Lancaster University Archaeology Unit) and was financed mainly by English Heritage, with additional support from North-West Water.

This report is presented in three parts; the survey proper and relevant associated material, the excavation of a cairn on Hurst Hill, and the excavation of an earlier Mesolithic site at Rushy Brow. General dates cited in this text are uncalibrated BC, radiocarbon determinations are calibrated using CALIB 2 or OxCal v2.18 as appropriate, using the datasets provided and, unless specifically stated, are expressed at 2 sigma confidence. The use of OxCal for dates before *c.* 7000 BP relies on the dataset of Kromer & Becker (1993).

[1] Lancaster University Archaeological Unit (Newcastle Office), 3rd Floor, Bolbec Hall, Westgate Street, Newcastle-upon-Tyne

Received December 1991. Accepted November 1995

DESCRIPTIVE BACKGROUND

Anglezarke and Rivington Moors (SD 61 NW and NE) form a substantial western outlier to the South Pennines and comprise an area of approximately 37 km² of unimproved or reverted moorland (Fig. 1). Whilst generally less elevated than the main bulk of the Pennine chain at this point, most of the moorland lies above 200 m OD and, at Winter Hill on Rivington Moor, it rises to over 450 m, which is comparable to most of the higher land of the southern Pennine chain.

The Anglezarke–Rivington area is well defined, bounded to the east by the South Pennines and to the west by the very low-lying Lancashire coastal plain, with the modern coastline within 25 km. To the south lies the urban sprawl of Greater Manchester and to the north, Blackburn and lower-lying farmland. In geological terms it represents the western extremity of the Rossendale Anticline and its extreme western boundary is marked by a typical Pennine fault scarp (the Brinscall Fault) which largely dictates the nature of the drainage around the western foot of Anglezarke Moor. The solid geology of the area belongs to the Upper Carboniferous Millstone Grit Series, the major local components being Fletcher Bank Grit (a coarse, pebbly sandstone incorporating large quartz crystals) and Haslingden Flags (a coarse sandstone with a blocky jointing system). Both have been quarried

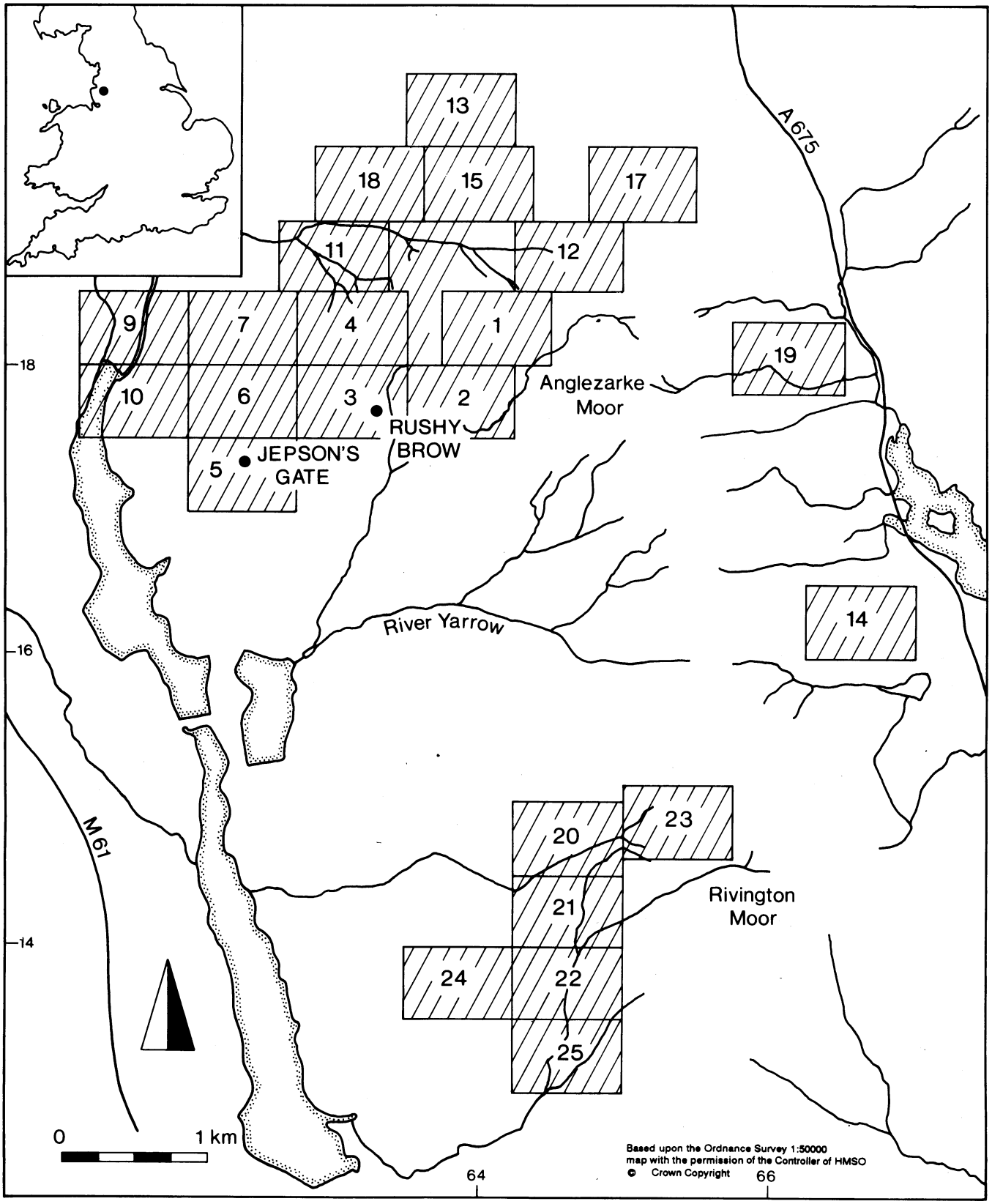

Fig. 1
Anglezarke Moor, the survey area and excavated sites are indicated

extensively where they outcrop at the western edge of the moor, the former for the production of millstones and the latter for civil engineering purposes, including the construction of the Anglezarke reservoir system, and as ballast in the construction of the M61 motorway (Isaac 1972). Localised mineralisation of the fault lines has resulted in the formation of deposits of witherite, barites, and galena, all of which have been taken on a small-scale, sporadic basis. Poor quality coal has also been mined from the moors but only in a very limited and localised fashion, often for individual domestic use.

The topography is typically dictated by underlying Millstone Grits: plateau moorland and stepped hillslopes, resulting from differential weathering of the interleaved soft shales and mudstones and harder sandstone. Unconsolidated Newer Drift Boulder Clays and blanket peat overlie these, and for the most part dictate the drainage of the upland plateau. The soils are those typical of upland moorland, podzols on the slopes, and elsewhere gleyed mineral soils and peat, together supporting a typical *Molinia/Calluna* vegetation (see Bain, below).

General peat formation appears (see Barnes, below) to have been initiated in this area towards the end of the Bronze Age (around 1200 BC) and the present-day peat cover varies greatly in depth, from a few centimetres to several metres; it appears to be subject, currently, to accelerated erosion. The action of long-term 'natural' erosion of upland peat has been summarised by Tallis (1986) who has demonstrated the genesis of the present-day deeply scored gullies and haggs of the southern Pennines to lie in the late 1st millennium AD, and has suggested that there have been large expanses of bare peat in that area since that date. Such long-term processes probably account in part for the erosion of peat on Anglezarke and Rivington Moors, exacerbated undoubtedly by the very high rainfall of the area (in excess of 1250 mm per year). Without further detailed study, however, this natural cycle cannot be divorced from the traumatic effect of anthropogenic erosion factors such as over-grazing, drainage, burning (both deliberate/controlled moorland management and large-scale accidental fires like those suffered in the occasional drought summers of recent decades), softwood re-afforestation, and industrial pollution, resulting in the death of the peat-forming *Sphagnum* sp., all of which remove the stabilising vegetation cover and facilitate wind and water erosion. Indeed large areas of redeposited peat of considerable depth are visible on Anglezarke Moor today.

Whilst occasional finds and isolated monuments have clearly demonstrated the exploitation of Anglezarke and Rivington Moors by Man since the early post-glacial period, they have not been subject to extensive archaeological investigation. Although there was sufficient evidence to demonstrate human activity at all periods, the paucity of obvious field monuments was, perhaps, discouraging to the Victorian dilettante and encouraged the ill-founded but general belief that there was little of archaeological interest in the north-west. This has, until recently, proved a major inhibiting factor to the pursuit of serious archaeological studies in this area.

ARCHAEOLOGICAL BACKGROUND

Although, like most of the Central Pennine chain, Anglezarke has been scoured by flint collectors, little modern archaeological investigation has taken place on the moors (*pace* Bu'lock and Hallam) and only the most obvious monuments have attracted attention. These few sites have been consistently viewed in isolation, and until this survey, no attempt has been made to take a wider view. Multi-period prehistoric exploitation and/or occupation is not, however, in doubt. Flint collecting has produced both Early and later Mesolithic material, often from small scatters situated about the 300 m contour; the lithic assemblages can be related to those of the Central and South Pennines and, further east still, to those of the East Coast.

Pikestones (SD 627 172), an isolated and, in Lancashire hitherto unique, chambered long-cairn, is the only field monument of unequivocally Neolithic date, although Round Loaf (SD 637 182), possibly a large round barrow, bears a strong resemblance to the group of large Neolithic round barrows typified by Duggleby Howe in North Yorkshire. They lie within a kilometre of each other on the moor, but are not intervisible. Close to Round Loaf, but bearing no obvious relationship to the barrow, is Devil's Ditch (centred on SD 638 178), a substantial (over 2 km long), probably man-made, but undated, linear feature of no obvious function. It is tempting, however, to suggest that it may have been a land boundary of the kind associated elsewhere with the Neolithic/Bronze Age exploitation of upland areas.

Neolithic types are well represented in the collections of lithic material from the moor.

Bronze Age activity is most obviously represented by a small number of round cairns. The Winter Hill cairn on Rivington Moor (SD 656 149) was excavated by Chorley Archaeological Society under the direction of Bu'lock and linked to palynological study by Dimbleby (Bu'lock *et al.* 1960; Dimbleby 1962). Whilst the construction of the cairn was carefully noted, the excavation ended prematurely when it was established that the primary burial had been long-since robbed. Noon Hill (SD 648 148) also on Rivington Moor, produced, upon excavation, secondary cremation burials with tanged-and-barbed arrowheads and an Enlarged Food Vessel of 'hooped bucket' type. A third cairn, Two (*Twa*') Lads, (SD 655 134) now a 'confused heap of stones' (Bu'lock *et al.* 1960), was presumably excavated without record in the 19th century. As with the Neolithic, Bronze Age lithic types are well represented in collections from the area, but, unlike the adjoining low-lying coastal plain, few, if any, copper alloy artefacts have been reported.

There are no Iron Age or Romano-British field monuments from the Anglezarke–Rivington Uplands, but several palynological studies (Barnes, below) have recorded recurring periods of clearance in the forested moorland margin, associated with a rise in the representation of Cerealia and other species generally associated with mixed agricultural activity at this period. The obvious inference is that areas of the moor and peripheral woods were subject to controlled modification/improvement in order to favour presumably small scale, agricultural activities. This must imply that there was some, probably limited, occupation of the moorland margin during the Iron Age and Romano-British periods.

The name Anglezarke appears to be Norse in origin, from *Anlaf* (Old Norse personal name) and *Erg* (sheiling or summer pasture-hill) but, beyond a series of place names, there is no evidence for early medieval activity on the moors. During the historical period little has been recorded of the moor. Lead-mining rights were held by the Knights Hospitaller and, from the late 14th century to 1600, when it was sold by the 6th Earl to the Moseley family for £400, the moor was held by the Stanley family, Earls of Derby. It afterwards passed to the Standish family of Duxbury. In 1904 it was bought by Liverpool Corporation for water catchment and in due course passed into the holdings of North West Water, who own and administer it today.

The moors have not been densely populated in recent historical times. In 1666, 25 hearths were liable to tax and in 1832 there were 32 families living on and around the moor. By 1961, the population had fallen to a total of 30. The modern settlement pattern, as might be expected, reflects the inhospitable nature of the upland plateau, with the farmsteads, many now abandoned, lying in the more sheltered peripheral river valleys. The surviving farmhouses have a southerly aspect and are characterised by deliberately planted stands of fast-growing trees intended as windbreaks. They were surrounded by some improved land, intended largely for domestic use, but their primary income was derived from pasturing sheep on the upland commons. This, as elsewhere in Lancashire, was never sufficient as a sole source of income and was supplemented in the post-medieval period by the spinning and weaving of woollens. On Anglezarke the mineral resources were also exploited for supplementary income.

RESEARCH STRATEGY

The research strategy was based in the first instance on that developed for Shaugh Moor (Wainwright *et al.* 1979) and modified with regard to the work of Leech on the south-western Cumbrian Fells (Leech 1983). It comprised four major components:

1. A detailed assessment survey of the whole area, incorporating sites of all periods in order to establish an accurate primary database.
2. A modern vegetational survey and a programme of palynological research, in order to place the upland complex within both its modern and ancient environmental contexts.
3. A study of available archaeological material, in order to provide local comparisons for material collected in the course of the survey.
4. Flexibility within the basic research framework allowed the design of a sample excavation strategy based on the questions presented by the survey and resulted in the excavation of two sites, a moderately substantial cairn, the exposure of which was attracting increasing attention from vandals, and a small and very insubstantial lithic scatter, exposed by natural erosion.

THE PALYNOLOGICAL CONTEXT

(based on a fuller statement by B. Barnes & M. Bain 1985)

The deep and extensive deposits of peat in the Pennines represent an important potential source of ecological information. In the South and Central Pennines the facts of both long term, and accelerating recent anthropogenic erosion, are well documented and the full sampling of these peats is seen as imperative before they are, at best, drastically truncated or, at worst, completely destroyed by erosion.

Whilst some areas of the South Pennines have been subject to extensive palynological research, little has been previously undertaken on Anglezarke and Rivington Moors, except for that by Dimbleby, carried out in conjunction with Bu'lock's investigation of the Winter Hill Cairn (Bu'lock *et al.* 1960; Dimbleby 1962). However, immediately to the south of Anglezarke, Red Moss, a lowland site, has been the subject of extensive study (Hibbert *et al.* 1971) which, with Winter Hill, forms a good cross-reference for studies on Anglezarke Moor. To provide an environmental context for the archaeological research on the moors, a pollen sampling programme was initiated.

Hibbert's study of Red Moss (*ibid.*), which established an improved chronological framework for the Flandrian period, has great relevance to studies on the Anglezarke–Rivington Uplands, although it is at a considerably lower altitude and is generally earlier in deposition. The upper levels of the Red Moss profile, however, overlap with the lower levels of a number of the Anglezarke–Rivington profiles and work at Hatch Brook (pine) (Barnes & Bain 1985; undated) has extended the Anglezarke–Rivington profile back to Flandrian I. The dating of the initiation of peat growth has been extensively discussed for the South–Central Pennines. It is generally accepted to have begun, in small and localised areas above 370 m OD, by the Boreal–Atlantic transition (Conway 1954); substantial evidence has accumulated (Tallis 1964) indicating that growth initiation spanned the Atlantic period, through the *Ulmus* decline, on into the Sub-Atlantic and into more recent times, especially at lower altitudes or in areas of increased exposure. Thus, localised peat formation had begun by *c.* 5500 BC, became more widespread during the Atlantic and Sub-Atlantic phases, and reached a distribution almost equivalent to that of the present day by *c.* 3000–2500 BC (Tallis 1985). Much of the Anglezarke–Rivington Uplands can, however, be demonstrated to have still been forest-covered at this date (Tallis & McGuire 1972) and it is likely that the major spread of peat over the moor was more than a thousand years later (Bain unpublished).

The South Pennine pollen record has been well documented from the period *c.* 3000 BC, and a picture presented of initial widespread deciduous forest cover, displaced at various times to give open upland landscapes with developing ombrogenous peat. Bronze Age deforestation is widely reported (Hicks 1972; Tallis & McGuire 1972) and is followed by repeated phases indicative of human exploitation, generally denoted by coincident peaks in the pollen record of such taxa as *Plantago* spp., Cerealia, Gramineae, *Artemisia*, *Rumex* spp., and Caryophyllaceae, although care has to be taken in the interpretation of such fluctuations of 'indicator species' (Behre 1980).

For the historical period clear indication is becoming more generally available for increased upland exploitation throughout the Pennines associated with the Romano-British period, Norse colonisation, and the later Middle Ages (Tallis & McGuire 1972; Hicks 1972; Tinsley 1975). A similar succession of events is emerging from the Anglezarke studies.

SURVEY OF THE MODERN VEGETATION

(M. Bain)

Survey and methods

A detailed vegetational survey did not exist for this area and was considered to be an important adjunct to the archaeological and palynological study of the moor: a) as a statement of the current vegetational status of the upland region, b) as an aid in environmental interpretation of its development to present status, and c) as a relevant pre-requisite to interpretation of the pollen diagrams recently constructed for the area.

The survey is primarily reconnaissance oriented — designed to establish the major vegetational elements and associations and their geographical distribution. Further work will enable the field data to be related closely to existing vegetational schemes for upland Britain (eg. Ball *et al.* 1981)

A summary only of the work is published here. A full account of the method, and a copy of the full field notes forms part of the Anglezarke Moor archive.

Summary of results

The evidence presented indicates a widespread species-poor moorland occupying virtually all land over 274 m (900 ft) OD. This is covered by a vegetational mosaic with *Molinia caerulea*, *Deschampsia flexuosa*, *Eriophorum* spp., and *Calluna vulgaris* as the major constants in a species-poor, grassy heath community. Within the area there is widespread compositional variation amongst these four dominants and additionally *Nardus stricta*, *Juncus* spp., *Empetrum nigrum*, *Pteridium aquilinum*, and *Vaccinium myrtillus* form important, though more localised, elements of the vegetational facies. The woodland areas are generally small and scattered, with a peripheral moorland distribution, many of them located below 274 m OD. A large number of the wooded stands occupy incised gullies associated with stream courses and are apparent in the landscape as linear features. A few isolated stands are located in the moorland on reverting farmland above 274 m OD and these appear to represent 18th and 19th century attempts at economic diversification by upland tenants; *Fagus sylvatica* is here an important species.

Farmland expansion has in the past evidently encroached into moorland areas, although now virtually all farmland above 274 m OD is in a state of variable reversion back to moorland, and this can be demonstrated by measurement of species diversity (Lewis 1983). Some of the earlier abandoned farmland is now fully reverted. Much of the farmland is only of value for the grazing of sheep, which is also prevalent in the moorland areas and imposes an additional pressure on the plant community. Other pressures evident from the survey are increased afforestation, recreational use and the frequency of burning, all of which will continue to influence the development of the upland vegetation over the next few years, as they have apparently in the recent past.

PREVIOUS COLLECTIONS OF LITHIC MATERIAL FROM ANGLEZARKE MOOR

(H. Bamford, based on information provided by J. Hallam)

Since 1960, work by individual collectors and local archaeological groups has led to the recording of numerous finds of worked flint and chert on several separate sites on and around Anglezarke Moor. All but one of these sites lies above 213 m OD, within an area of about 5 km^2 bounded by Black Brook and Great Hill to the north, and by Limestone Brook to the south. The locations of over 100 other finds of lithic material, collected from the same area during the 1950s and early 1960s (J. Smith Collection), have been recorded only approximately. The one recorded outlying site of this group lies on farmland below, and about 2 km to the west of, the moor.

Sites

The 14 individual sites and areas are listed in Table 1. The finds from Anglezarke Flat (site 9) were collected during a search over land ploughed for tree planting. All the other sites on the moor were marked by scatters of flakes and implements on surfaces exposed by localised erosion of the overlying peat. The principal and most productive of these were each visited and searched several times over a period of years. At Stronstrey Bank (site 1) the discovery of surface finds was followed up by a small excavation.

TABLE 1: SITES ON ANGLEZARKE MOOR MENTIONED IN THE TEXT

Site no.	*Site name*	*NGR*	*Height OD (m)*	*Type of investigation*	*No. of pieces recorded*
1	Stronstrey Bank	SD619 178	213–229	Surface finds/excavation	317
2	Above Stronstrey Bank	*c.* SD623 180	251–259	–	–
3	Black Brook B	SD630 185	274–297	Systematic surface collection	271
4	Black Brook C	SD632 186	274–297	Systematic surface collection	100
5	Black Brook D	SD631 185	274–297	Systematic surface collection	21
6	Black Brook E	centred SD631 188	244–297	Surface collection	6
7	Black Brook A	centred SD631 188	267–282	Surface collection	2
8	Great Hill Area	SD644 190	335–373	Random surface collection	32
9	Anglezarke Flat	SD628 170	*c.* 267	Collection from ploughed surface	8
10	Upper Black Hill	SD643 182	343–351	Random surface collection	22
11	Lower Black Hill I	SD640 178	312	Random surface collection	12
12	Lower Black Hill II	SD640 177	305	Random surface collection	14
13	Round Loaf Barrow	SD638 182	328	Collection from surface of mound	11
14	Phillipson's Farm	*c.* SD605 195	122–137	Random surface collection from ploughed fields	15

The small number of lithic finds from the much lower-lying site 14 was distributed over five fields and picked up after ploughing.

The largest and most significant groups of finds are from site 1 and from Black Brook, where two sites (sites 3 and 4) are of particular interest. The bulk of the finds which are recorded as from Anglezarke in the J. Smith Collection were also found in the general areas of Stronstrey Bank and the Black Brook sites.

STRONSTREY BANK: SITE 1 (ANGLEZARKE SURVEY SITE 67)

This lies on a west-facing slope at the southern end of the rocky terrace which forms the north-western edge of Anglezarke Moor. The soil is of podzol type with a recognisable iron pan. The surface on which flints were first found was exposed by a moorland peat fire in 1958. The subsequent excavation, 31 m² in extent, was carried out by members of the Chorley & District Archaeological Society in 1961. Almost all the flints from this excavation were found in brown soil which underlay the humus. The exceptions were one or two fragments from below the iron pan, and two scrapers and a fragment of barbed-and-tanged arrowhead which lay in the humus. Small chips and flakes less than 5 mm long are sufficiently numerous to suggest efficient recovery within the excavation.

The assemblage as a whole is clearly heterogeneous in character and includes implements of both Mesolithic and Neolithic or early Bronze Age type. It seems probable that the original stratigraphy had been truncated and distorted by hillwash and erosion, and there is no record that the lithic components were in fact separated in any way within this context. It seems best, therefore, to regard this group as effectively unstratified.

BLACK BROOK: SITES 3–7

(ANGLEZARKE SURVEY SITES 36, 37, 38, 106, 107)

These lie to the south of Black Brook, and within 600 m of it. Sites 3, 4, and 5 are clustered around the head of a group of small tributary streams and lie on the ridges between them. Most of the finds were made between 1962 and 1975 on the surface of the stony clay soil exposed by erosion. The finds from site 4 were highly localised within an area of 9 m², most being concentrated within 2 m². All the diagnostic pieces from these sites are Mesolithic, and the composition of each assemblage appears to be internally consistent. Sites 6 and 7 denote areas searched respectively to the south-west and north-east of the main group and do not relate directly to the latter.

The worked lithic material

A total of 831 pieces, at least 12.5% of which are retouched, is recorded from the 14 sites. The general composition of the assemblage as a whole, and of each individual group, is shown in Table 2; a selection of artefacts is shown on Figure 2.

TABLE 2: THE LITHIC ASSEMBLAGE

	Site 1	*Site 2*	*Site 3*	*Site 4*	*Site 5*	*Site 6*	*Site 7*	*Site 8*	*Site 9*	*Site 10*	*Site 11*	*Site 12*	*Site 13*	*Site 14*	*Total*	*J. Smith Collection*
Microlithic points+related forms	1	–	3	3	3	–	–	–	–	4	–	1	–	1	19	7
	1.3%	1.1%	3%	–	–	–	–	–	–	–	–	–	–	–	2.3%	–
Scrapers	33	–	–	–	–	1	–	2	–	–	–	1	–	2	39	–
	10.4%	–	–	–	–	–	–	–	–	–	–	–	–	–	4.7%	–
Other retouched pieces	24	–	3	–	1	4	1	1	–	4	1	2	–	3	46	2
	7.6%	–	1.8%	–	–	–	–	–	–	–	–	–	–	–	5.5%	–
Unmodified flakes and blades (intact and broken)	139	–	170	66	17	1	1	15	2	7	1	7	10	4	440	80
	43.8%	–	62.7%	66%	–	–	–	–	–	–	–	–	–	–	52.9%	–
Cores, core fragments + nodules	1	–	43	3	–	–	–	1	1	2	1	–	1	–	52	7
	0.3%	–	15.9%	3%	–	–	–	–	–	–	–	–	–	–	6.3%	–
Chips, fragments and burnt flint	116	–	50	28	–	–	–	14	5	5	9	3	–	5	235	12
	36.6%	–	18.5%	28%	–	–	–	–	–	–	–	–	–	–	28.3%	–
Totals	317	–	271	100	21	6	2	32	8	22	12	14	11	15	831	108

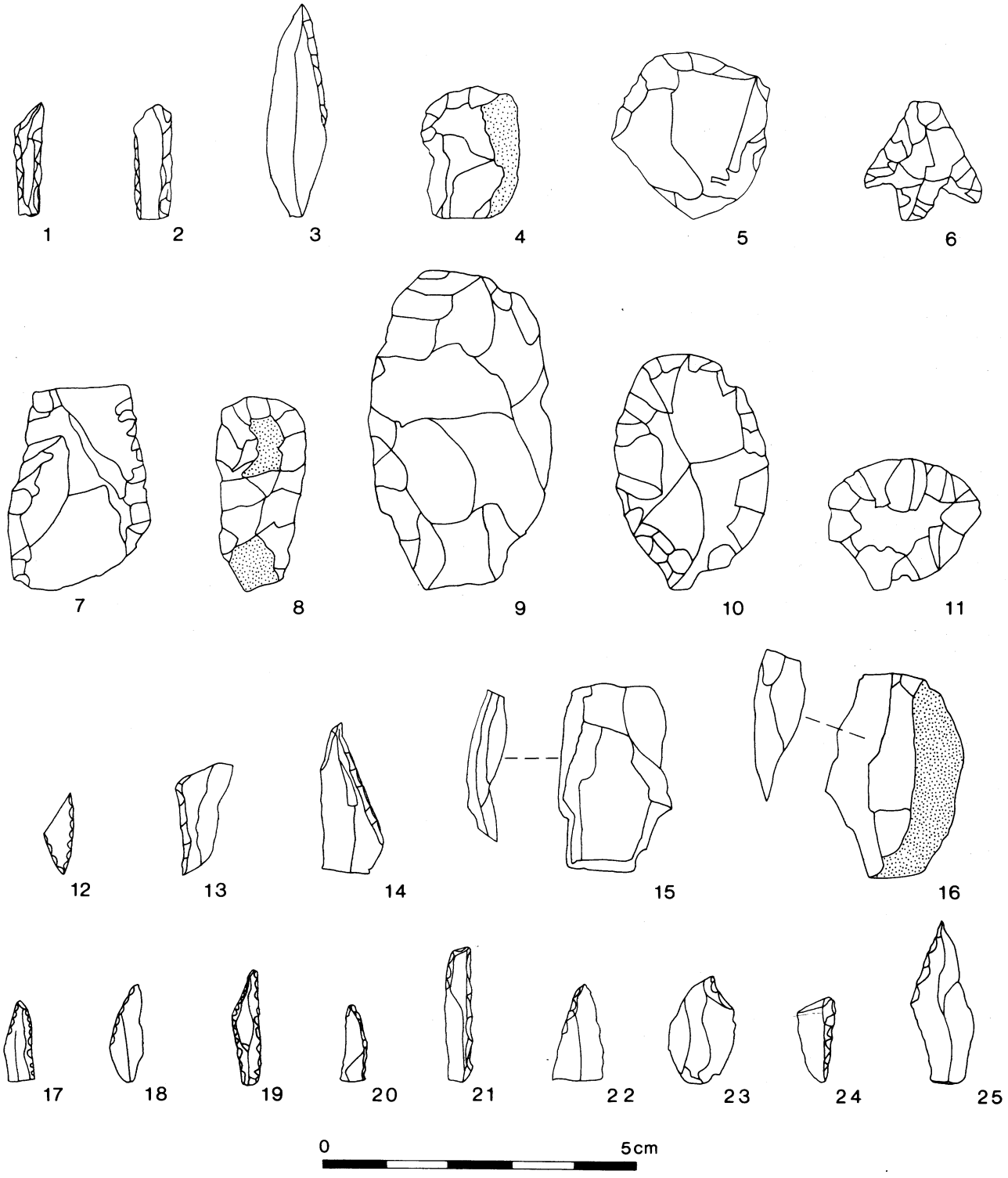

Fig. 2
Lithic material collected from the moor. 1–11: Site 1, Stronstrey Bank; 12–16: Site 2, Black Brook; 17–18: Site 3, Black Brook; 19–23: Site 9, Black Hill; 24: Site 11, Black Hill; 25: Site 13, Phillipson's Farm. Scale 1:1

Microlithic points and related forms were found on seven of the sites (sites 1, 3, 4, 5, 10, 12, and 14) and the assemblages from sites 3, 4, and 5 appear to be purely Mesolithic in character. The forms typical of the latter three sites are small blades, blade cores, and narrow and pointed flakes. Amongst the smaller groups, those from sites 7, 9, and 12 also appear to be predominantly or wholly Mesolithic. The finds from site 10 (Upper Black Hill) include a microburin. Finds from the J. Smith Collection, from the same general area include several microlithic points as well as a high proportion of small blades and blade-like flakes.

Implements of specifically Neolithic or Early Bronze Age type were found at three locations, namely site 1, where there was the greatest concentration, and sites 6 and 7.

MICROLITHS

The microlithic points and related forms which were found on the seven sites mentioned above may be classified as follows: obliquely blunted points; small isosceles triangles; narrow scalene triangles; bilaterally edge-blunted 'rods'; edge-blunted points; miscellaneous small edge-blunted flakes. Their incidence is summarised in Table 3. The six scalene triangles in the J. Smith Collection were all found in the general area of Stronstrey Bank, within a radius of 500–700 m from site 1.

Obliquely blunted points on relatively broad blades are common in earlier Mesolithic industries in Britain, but small, narrow forms such as the scalene micro-triangles and 'rods' occur only in later Mesolithic industries, dated not earlier than *c.* 6800 BC (Jacobi 1976, 71*f*). On this evidence it would appear that the Mesolithic material from almost all of these sites either belongs entirely to the later tradition, or is of mixed date. Only the group of material from site 3 could be entirely of the earlier period.

NEOLITHIC AND EARLY BRONZE AGE IMPLEMENTS

Isolated examples of Neolithic or Early Bronze Age implements from Anglezarke Moor include a disc scraper and a bilaterally retouched flake knife found on site 6, and a barbed-and-tanged arrowhead from site 7. Otherwise, almost everything which is identifiably of post-Mesolithic type was found on or around site 1. The types in question include:

Arrowheads: 1 leaf-shaped arrowhead (broken), 3 barbed-and-tanged arrowheads and 7 fragments, probably of barbed-and-tanged arrowheads.

Knives: 1 bilaterally retouched, straight-edged flake knife, 2 plano-convex knives (one broken) and 2 flake knives resembling plano-convex types, 1 oval flake knife.

Bifacially worked 'laurel leaf' scrapers: at least two of the 33 examples from the site are not of Mesolithic type, being discoidal in form, with invasive scale retouch. Most of the rest are simple end-scrapers which are difficult, if not impossible, to date on typological criteria alone. It may be noted, however, that no scrapers are recorded with the Mesolithic material from sites 3–5.

The typology of these implements is consistent with a later Neolithic or Early Bronze Age date for this non-Mesolithic element. Small scrapers with invasive scale retouch seem to be associated most commonly with later Neolithic/Early Bronze Age Beaker assemblages (*cf.* Smith 1965, 107), and barbed-and-tanged arrowheads are well known to be a predominantly Beaker and Early Bronze Age form (Green 1980, 137*ff*). Plano-convex and straight-edged flake knives are associated particularly with Food Vessel and Beaker pottery and also with Grooved Ware (Manby 1974, fig. 23:38, fig. 25:97 *& passim*; Healy 1984) though similar forms have occasionally been recorded in earlier contexts. Leaf arrowheads and 'laurel leaves' are common to the earlier Neolithic tradition, but their isolated presence in a later Neolithic or even Early Bronze Age assemblage need not necessarily be seen as anomalous (Green 1980, 94*f*).

TABLE 3: MICROLITHIC POINTS AND RELATED FORMS

	Site 1	*Site 3*	*Site 4*	*Site 5*	*Site 10*	*Site 12*	*Site 14*	*Total*	*J. Smith Collection*
Obliquely blunted point	2	1	1	–	1	–	1	6	–
Isosceles triangle	–	1	–	–	–	–	–	1	–
Edge-blunted point	–	–	1	–	–	1	–	2	–
Scalene triangle	1	–	–	3	2	–	–	6	6
'Rod'	1	–	–	–	1	–	–	2	–
Other	–	1	1	–	–	–	–	2	–
Totals	4	3	3	3	4	1	1	19	6

TABLE 4: RAW MATERIALS EXPRESSED AS A PERCENTAGE TOTAL FOR EACH SITE

	Site 3	*Site 4*	*Site 5*	*Site 6*	*Site 7*	*Site 8*	*Site 9*	*Site 10*	*Site 11*	*Site 12*	*Site 13*	*Site 14*	*All sites (excluding 1)*
Total number of pieces	271	100	21	6	2	32	8	22	12	14	11	15	–
Flint	57%	74%	62%	50%	100%	50%	87.5%	68%	92%	64%	83%	93%	64%
Fine black chert	34%	–	–	–	–	6%	–	–	–	–	–	–	18%
Coarse chert	9%	26%	38%	33%	–	44%	12.5%	32%	8%	36%	18%	7%	18%
Other	–	–	–	17%	–	–	–	–	–	–	–	–	–

Raw materials

Both flint and chert were used on these sites and the latter constitutes more than 30% of all the material found. Little investigation has been made of the sources of raw materials for implements found on the moor; it is, however, discussed with regard to the site at Rushy Brow (below). Their incidence is shown in Table 4. Precise figures are not available for Stronstrey Bank, and are therefore omitted.

FLINT

The flint is of varying type and quality and may be classified broadly under three main headings:

1. Grey, brown or black flint of good quality.
2. Grey, mottled flint with white inclusions.
3. Reddish or pink banded flint.

The first two types were used for the manufacture of both Mesolithic and Neolithic implements, and all the specifically later Neolithic/Early Bronze Age types are of such flint. The third type is recorded on only one site, site 4, where 47% of all pieces, or 62.7% of all flints, were of this material.

CHERT

The chert is of two types:

1. Fine-grained, black chert ('Derbyshire' type)
2. Coarser black or grey chert of varying quality ('Pendleside' type)

The first is recorded only on site 3, where it constitutes more than a third of all material represented, and on the neighbouring site 8, on Great Hill. It was used in the manufacture of microlithic points, since one such was found on site 3, and working of the chert on site is attested by at least one core together with two joining flakes from it. Flakes and fragments of coarse chert occurred on virtually all the sites.

A struck flake of what appears to be an igneous rock was picked up from site 6. It has not been petrologically examined, but might be from a stone axe, since these are known to have been, on occasion, cannibalised for flake production.

Discussion

It is clear that the lithic assemblages from the Anglezarke Uplands (survey sites 1–14) derive from at least two, and probably more, widely separated and very different episodes of prehistoric activity. The Mesolithic material alone probably represents several minor episodes which may have spanned a very long period.

The material from site 1 is obviously of mixed date and may have been residual in hill-wash deposits. There are, therefore, no clues beyond those presented by the datable artefacts themselves as to the nature of the activities which resulted in their deposition. The relatively high ratio of retouched implements of all types to unmodified flakes and fragments suggests that flint working was not carried out intensively in the immediate vicinity, as does the fact that only one core was found, and that some of the flakes were utilised and not simply waste. The range of later Neolithic/Early Bronze Age implement types is such as might be expected on a domestic site, and if the scrapers were all, or for the most part, contemporary with these, their marked predominance would be in no way unusual. Suggestions as to the significance of such domestic activity, on a small scale and in such a locality, can in this instance be no more than speculative; one possibility is that the site was used for seasonal pasturage.

The Black Brook sites, 3–5, are rather more straightforward, although the lithic material itself is still the only source for interpretation, and what can be inferred from it is, at present, strictly limited. The finds from these three sites can probably be regarded as discrete groups. Finds from site 4 were tightly concentrated in a small area and are further distinguished by the fact that almost half of them, including the single core fragment recovered, are of a distinctive coloured flint which did not occur on any of the other sites under consideration. This latter observation, as well as the compact distribution, suggests that the flint was worked on the spot. The full extent of sites 3 and 5 is uncertain, as is the actual density and distribution

of artefactual material below the exposed and weathered surfaces from which the collection was made. It is possible that the smaller group of finds from site 5 related directly to the other but, as has been noted, the flints from site 5 include microliths of later Mesolithic type, whereas those from site 3 do not. The large number of cores and nodules from site 3, and the incidence of at least a few rejoining flakes, indicates the working of both chert and flint within or near the area of collection.

Some of the flakes and blades in all three groups of material were evidently utilised, as on the other sites. Since, however, it has not been possible to carry out any detailed examination or analysis of the use-wear on these or on the microlithic points, it is not possible to comment any further on the nature of activity on these sites.

Most, but not all, of the sites and findspots recorded by Hallam (Hallam 1986) were identified during the course of the 1983 and 1985 surveys and appear in the following account.

THE ANGLEZARKE SURVEY

(J. Quartermaine)

A comprehensive archaeological survey was undertaken on *c.* 23 km² of the Anglezarke–Rivington Uplands (Fig. 1), over two seasons, in 1983 under the direction of R.H. Leech, and in 1985 under the direction of the author. The survey, which was set up partly as a response to severe peat erosion (caused by extensive fires in the late 1970s and early 1980s), was also seen as an opportunity (in conjunction with other work) to assess the development of the moorland environment and man's impact upon it.

Methods

The archaeological sites were located from oblique aerial photographs (taken by A.C.H. Olivier) and by systematic field walking: the moorland was searched by walking parallel traverses, 20–60 m apart (depending on the terrain), taking special care in areas of peat erosion to ensure that surface finds were also recovered. The sites were surveyed with respect to a primary control, triangulated from the Rivington Pike and Darwen Hill triangulation points. The detail was surveyed by stadia and EDM tacheometry. The survey plans were drawn at 1:1000 with topographic detail enlarged from OS 1:10,000 maps. The sites were all

TABLE 5: SITES FOUND DURING THE ANGLEZARKE SURVEY

	Withnell Moor	Wheelton Moor	Anglezarke Moor (Stronstrey Bank)	Anglezarke Moor (Jepson's Gate)	Anglezarke Moor (Hurst Hill/ Rushy Brow)	Anglezarke Moor (Black Hill)	Anglezarke Moor (Black Brook)	Rivington Moor	Smithills Moor
Mesolithic lithic scatter	–	2 (sites 111; 115)	2 (sites 50; 117)	1 (site 11*)	2 (sites 21; 110)	3 (sites 112; 114)	–	–	–
Undated lithic scatter	–	–	1 (site 117)	–	–	–	5 (sites 36–38; 108; 109)	1 (site 88*)	
Lithic findspot	–	–	1 (site 66*)	3 (sites 62–64*)	3 (sites 19*; 25*; 66*)	1 (site 15)	2 (sites 106; 107)	–	1 (site 118*)
Long cairn	–	–	–	1 (site 82)	–	–	–	–	–
Round cairn/barrow	1 (site 2*)	–	1 (site 40)	1 (site 73)	–	1 (site 13)	–	2 (sites 86–87*)	–
Clearance cairn	–	–	2 (sites 56; 57)	4 (sites 61; 79; 80; 81)	5 (sites 20; 22; 24; 27; 28)	2 (sites 14; 16;	–	–	–
Cist	–	–	–	–	1 (site 18*)	–	–	–	–
Rectilinear enclosure	2 (sites 1*; 3)	–	–	1 (site 78*)	–	–	–	–	–
Enclosure	–	–	1 (site 51*)	–	–	–	–	–	–
Ring feature	–	–	–	–	2 (sites 23; 29)	1 (site 17)	–	–	–
Linear ditch	–	–	–	–	–	–	–	1 (site 91*)	–
Stone bank	–	–	–	1 (sites 70–72; 76–77)	–	–	–	–	–
Post-medieval field system	–	1 (sites 8*; 9*)	–	–	–	–	–	–	–
Stone quarry	–	4 (sites 6*; 7*; 10*; 12*)	10 (sites 39*; 41–48*; 58*)	–	–	–	–	1 (site 93*)	10 (sites 96*–105*)
Other mining	–	2 (sites 5*; 11*)	1 (site 65*)	–	–	–	–	1 (site 95*)	–
Post-medieval wooden track	–	1 (site 4*)	–	–	–	–	–	–	–
?Natural features	–	–	4 (sites 52–55*)	–	5 (sites 30–34*)	–	–	–	–
Beacon	–	–	–	–	–	–	–	1 (site 90*)	–

described and measured in the field and have been incorporated into the Lancashire Sites and Monuments Record. A summary appears as Table 5. A full catalogue is available with the archive.

Results

A total of 105 sites were recorded from the survey area (Fig. 3), which comprised five distinct areas of moorland: Withnell, Wheelton, Anglezarke, Rivington, and Smithills. Sites 106–118 were lithic scatters identified and collected before the 1970s (Hallam 1986; see also Bamford, above), which could not be relocated with accuracy during the survey, as a result of the regrowth of groundcover. Sites marked with an asterisk (*) are not marked on Figure 3.

WITHNELL MOOR

This area is bounded to the south-west by Wheelton Moor, to the north by the large Withnell quarry and enclosed land, and to the east by the A675 road. The south-eastern part of the area is open moorland with deep, undisturbed peat deposits. The few archaeological monuments were found in the northern part, where the peat deposits are relatively thin. They include a round cairn (site 2*), probably of Bronze Age date, and two rectilinear enclosures (sites 1* and 2*).

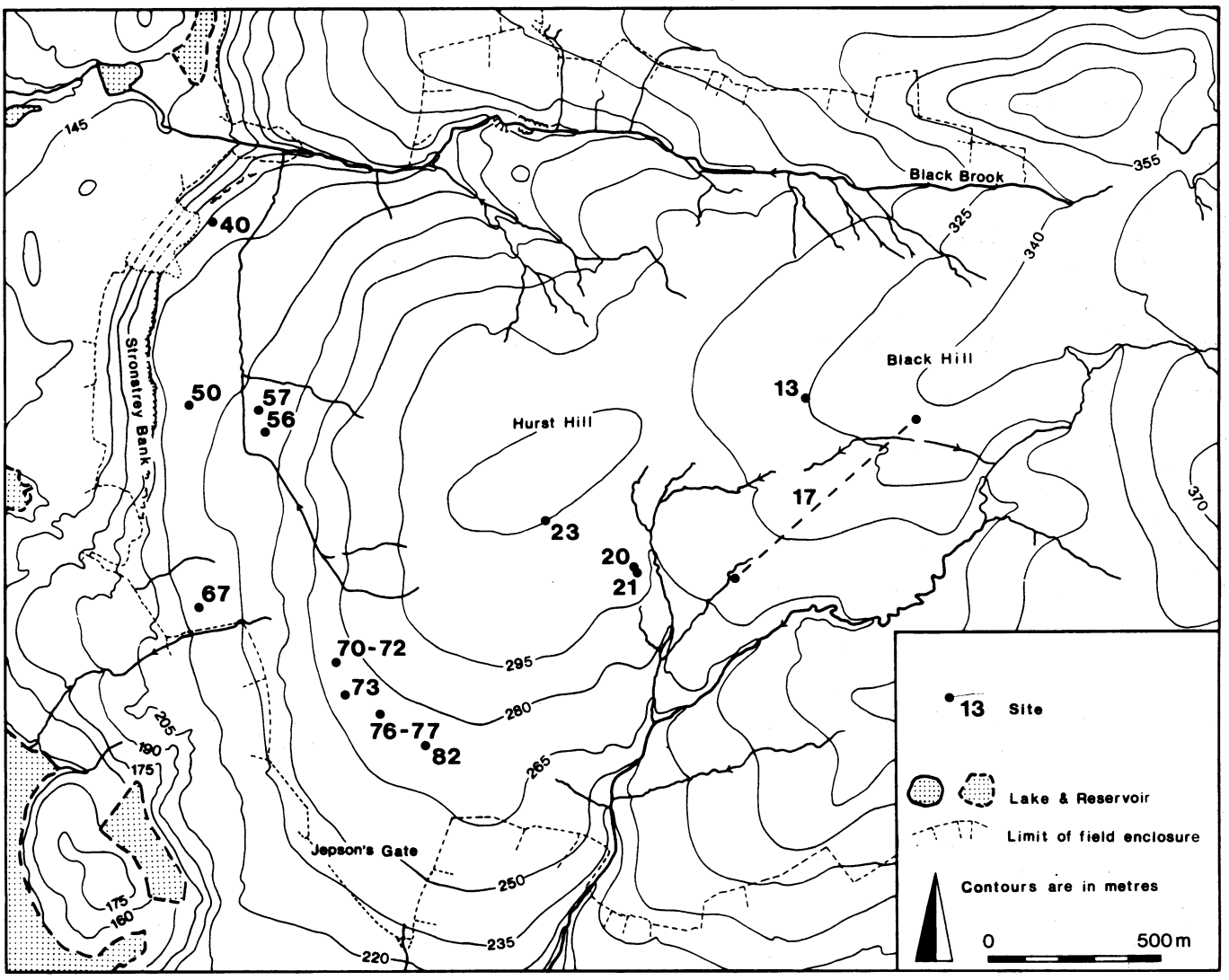

Fig. 3
Sites located by the Anglezarke Survey

WHEELTON MOOR

This area naturally divides into two terrain types: a central area of open undulating moorland with deep peat deposits, and the moor edge, steeper and with better natural drainage. The latter is enclosed land associated with four abandoned farms. Apart from the Mesolithic lithic scatters (sites 111 and 115), all the sites were post-medieval in date. This might suggest that there was little prehistoric exploitation of the moor, but it might equally reflect the limited erosion of peat in this area.

ANGLEZARKE MOOR

Anglezarke Moor, because of its complexity, has been subdivided into 5 smaller areas.

Stronstrey Bank

This natural terrace between two sharp breaks of slope is relatively flat and well drained. The peat deposits are moderately shallow (*c.* 0.5 m) in comparison with those on top of the moor, and there are only small, isolated areas of erosion.

The lithic scatters (sites 50 & 117), are small and of Mesolithic character. Site 67, however, which was excavated by L. Parker in 1961 (Hallam 1986), is a more extensive scatter, and produced 412 worked flakes of flint and chert; although mainly Mesolithic, it included a Neolithic/Early Bronze Age element. The two small cairns (sites 56 & 57) are close to, and on either side of, the reported location for lithic scatter site 117.

The chambered round cairn (site 40) is of an unusual type. It is a large, slightly pear-shaped, prominent cairn and has a chamber formed by a large unworked slab, used as a capstone. This stone slopes down to the ground at the back, but is supported at the front by an upright portal on one side, and the body of the cairn on the other. The cairn is situated close to post-medieval quernstone workings, but is quite distinct, both in form and its deliberate construction, from the later activity. Although the chamber is incorporated within a cairn and is not free-standing, there are similarities with some of the megalithic tombs of north Wales (eg. Bron Y Foel Isaf, Powell *et al.* 1969, 125–6).

Jepson's Gate

This is a sloping area of moorland, bounded to the south by field enclosures, to the west by the natural terrace of Stronstrey Bank, to the east by recent forestry plantation, and to the north by Hurst Hill. The peats are shallow in comparison to those on the Anglezarke plateau and there have been extensive fires, which have severely reduced the deposits. This truncation is demonstrated by the pollen profile from an area adjacent to the cairn, site 73 (ANG 83/01 EXT, Barnes & Bain, below), which suggests a maximum timespan from the later Bronze Age (*c.* 1250 cal. BC) through to the early Roman period ; later deposits having been removed by peat erosion.

Again, the presence of Mesolithic material (site 116*) suggests activity from an early date on this part of the moor. Pikestones chambered long-cairn (site 82) is one of only two in present-day Lancashire (Bu'lock 1958), the other, site 40, was discovered in the course of this survey. The chamber is a large free-standing cist at the northern end of the cairn. Of Neolithic type, it has been suggested by Lynch (1966) that it may belong to the group of Derbyshire megalithic tombs. The kerbed oval cairn (site 73) is discussed below. Excavation did not provide a date, but such monuments are normally attributed to the Bronze Age.

The stone bank complex (sites 70–72, 76–77) has two main sections which lie at right-angles to each other. Both are irregular heaps of stone with no indication of a dry-stone structure (site 72). They are clearly badly damaged and no function is apparent from the surviving evidence. The complex lies on the peat and must, therefore, post-date the onset of peat formation in the later Bronze Age.

Hurst Hill and Rushy Brow

The area around Hurst Hill, on top of Anglezarke Moor, is bounded to the north by the Black Brook area, to the west by a sharp break of slope and Stronstrey Bank, to the south by the Jepson's Gate area and to the east by the Black Hill area. The peat deposits are generally around 1 m deep, but there are areas of severe peat erosion at the edge of Hurst Hill and on a small hillock at Rushy Brow. The sites located are from the areas of erosion.

The lithic scatter at Rushy Brow (site 21) was excavated in 1985 (see below), and is in close proximity to a small cairn (site 20). The ring feature (site 23) is a circular bank of mineral soil resting upon a thin peat deposit. It is unlikely to be a natural feature and, because of the thin sub-layer of peat, probably post-dates the onset of peat formation in the area. Within the ring feature there are some large earthfast boulders which are not consistent with it being a hut structure.

Black Hill

This is a moderately flat plateau bordered to the north and south by drainage systems. There are peat deposits of 2–3 m thickness and comparatively little peat erosion.

The Mesolithic lithic scatters (sites 112 and 114) are poorly provenanced, but again indicate activity on the moor. Round Loaf (site 13), is a large pear-shaped mound with a maximum height of 5.5 m, which has, in the past, been assumed to be a tumulus. The edge of the mound forms a sharp break of slope with respect to the moorland, and thus gives it an artificial appearance. On the top of the mound, however, erosion has exposed a compacted mineral soil, within which a small scatter of Mesolithic lithic material was found (Hallam 1986), implying that the mound is probably natural in origin.

The Devil's Ditch (site 17) is a long, straight, flat-bottomed earthwork which does not conform to any lines of natural drainage or the local topography. There is only limited evidence for banks on either side of the ditch. Findspot 15, comprising three flint waste flakes, was a small area of eroded peat which lay close to the reported location of lithic scatter site 112, which comprised mainly waste flakes of a Mesolithic character (Hallam 1986).

Black Brook

This area lies on the steep southern banks of Black Brook and its tributary system. The peat deposits are 2–3 m thick, but there are occasional areas of erosion, usually associated with the natural drainage. The few sites are all Mesolithic in date and the isolated finds are mainly Neolithic.

RIVINGTON MOOR

The area is bordered to the north, west, and south by distinct breaks of slope, which to the north and west also form the boundary with enclosed land. To the east the survey area was limited by the Lancashire/Greater Manchester county boundary. The moor is at a height of about 330–450 m OD, and has predominantly undisturbed deposits of deep peat. In general, the sites are either sufficiently substantial as to protrude from the peat cover or occur where the peat cover is thinnest, on the south-western part of the moor. A limited, mixed assemblage of lithic material was found on the hill called Two Lads (SD 6553 1329). Although this is in the vicinity of Rivington Moor, it does not fall within the survey area (being in Greater Manchester). If, however, considered with the lithic scatter (site 88) and the two barrows (Bu'lock *et al.* 1960) on the moor, it provides further evidence of prehistoric activity there.

SMITHILLS MOOR

This is a large area of open, undulating moorland. The moor is bounded to the north by the A675 road and the Belmont/Rivington road, the moorland which lies to the south-west of the Lancashire/Greater Manchester county boundary was excluded from the survey area. The peat deposits are thick and mainly undisturbed. Apart from a barbed and tanged arrowhead (site 118*) there is no evidence for a prehistoric presence on this part of the moor.

Discussion

The earliest human activity on the Anglezarke–Rivington Uplands appears to date to the earlier Mesolithic period. Evidence is provided by the numerous lithic scatters and findspots throughout the study area. The Neolithic period is represented by a single lithic scatter (site 67, as reported by J. Hallam), four isolated findspots and probably two chambered long-cairns. All these sites were found at the edge of the moor, between 210 m and 280 m OD. The evidence for Bronze Age exploitation of the moorland landscape is limited. The kerbed cairn (site 73) is of Bronze Age type, but otherwise there is no clear dating evidence. The stone bank complex (sites 70–72 and 76–77) was constructed on top of a peat deposit that probably started forming in the later Bronze Age, and hence must be later in date. Apart from the bank complex there was little tangible evidence for human activity until the post-medieval period when the western part of the study area was subject to extensive mineral extraction.

This brief chronological resumé is based upon the small number of datable sites located during the survey, but there were many more sites which, though undated, reflect intensive exploitation of the area. One such, Devil's Ditch (site 17), is, on the ground, a 630 m long, flat-bottomed ditch, but air photographs (RAF VAP, sortie 540–1764) appear to show its continuation on the far side of a stream gully (shown as a single broken line on Fig. 3), which indicates a total length of 2.1 km. It is clearly not an artefact of the natural drainage regime and there is no other obvious natural cause. It does, however, have similarities to the Pennine pack horse tracks reported by Raistrick (1978, 57–9). Round Loaf, a large mound of artificial appearance resembles the large Neolithic round barrows of East Yorkshire. Probing the area around the mound, however, has shown that the mineral soil lies at a uniform depth below the peat, implying the absence of either a surrounding ditch or quarries. This, coupled with the presence of a Mesolithic lithic scatter on top of the mound, might well suggest that it is more likely to be a natural glacial feature. The uncertainty surrounding this site might be resolved by further work. There are also 13 small cairns (diameters *c.* 2 m) which have no obvious function. Viewed in isolation they cannot be dated, but it is perhaps significant that six of them are in the immediate vicinity of lithic scatters or findspots (cairns 14, 16, 20, 61, 56, & 57), which must raise the possibility that they were associated chronologically as well as spatially.

The archaeological monuments located during this survey are likely to be only a relatively small part of the total number in the study area, because despite erosion, blanket peat still obscures all but the larger monuments. Most sites located lay in areas of peat erosion, and from aerial photographs it is apparent that the areas of severe erosion represent only a fraction of the total area of moorland. The presence of a large number of lithic scatters and findspots on the Anglezarke–Rivington Uplands must be an indication of the sustained exploitation of the moors during the Mesolithic and, to a lesser extent, later prehistoric periods. Thus, although the survey records only a sample of the archaeology of the uplands, it does, at least, provide an indication of the potential of comprehensive field survey in areas of open peat moorland.

THE EXCAVATION OF A POSSIBLE BRONZE AGE BURIAL CAIRN AT JEPSON'S GATE (SITE 73)

(from an outline by R. Leech)

The cairn, which lies on the south-west slopes of Hurst Hill (SD 6239 1734) within a complex of walls and other possible features, was first reported as under possible threat in July 1983. Field visits and preliminary investigations established that severe erosion of the surrounding peat, in places down to the mineral soil, was not only in itself damaging the monument, but also, by exposing it, leaving it vulnerable to vandalism (the moor supports heavy recreational usage and therefore small acts of vandalism are a constant threat to exposed monuments). Subsequent visits in the same month confirmed that the cairn had in fact suffered some damage and in consequence it was excavated in September of the same year.

The cairn prior to excavation

This description is based on the field observations of P. Gibbons, field officer, CLAU, 1983. Lying approximately on the 267 m contour, the cairn was oval in shape, and measured approximately 5.3 m by 3.8 m. It survived to a height of 0.4 m (photographs taken in 1982 indicate that it then stood to a height of 0.6 m). The edge of the cairn was well defined, particularly on the north and west sides where it appeared as an even curve (Fig. 4). The eastern side appeared to have suffered some collapse in antiquity and stones lay embedded in the peat beyond the cairn's edge.

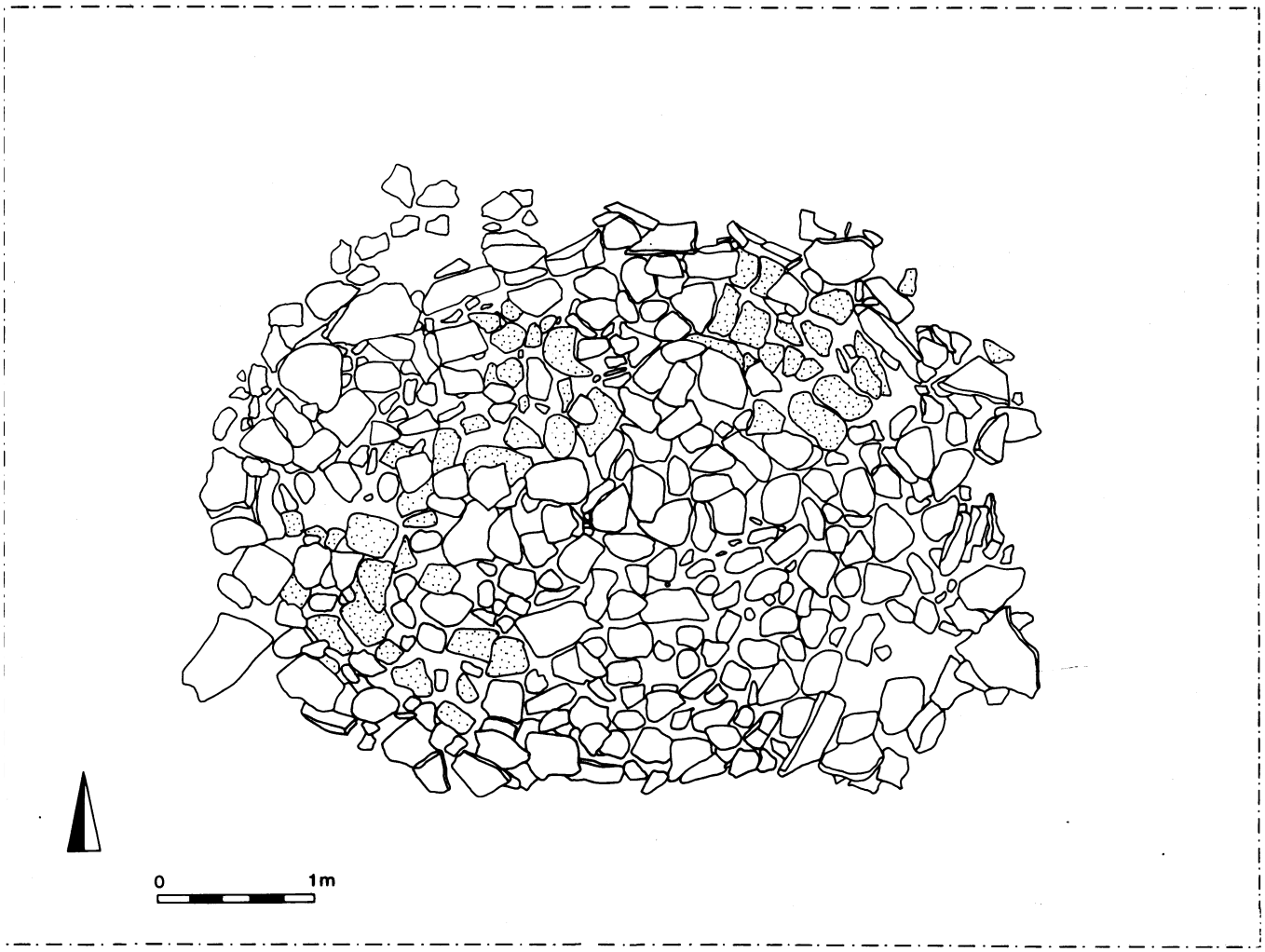

Fig. 4
Jepson's Gate: cairn prior to excavation

The body of the cairn was constructed from naturally weathered millstone grit — approximately 70% of the material comprised rounded stones 0.15–0.3 m in diameter, 20% rounded stones 0.3–0.5 m in diameter, 5% stones less than 0.15 m diameter and 5% large flat stones (*c.* 0.6 m by 0.45 m by 0.15 m). For the most part, but not in the southern quadrant, the cairn was constructed of material which was closely-packed but not apparently fitted together with any great care. All the large flat stones were situated towards the edge of the cairn and some of them, in the north and east quadrants, leaned inwards, as if intended to support the structure; they did not, however, at that time, appear to form a kerb. In general the interstices of the structure were peat-filled, but recent erosion had left many of the stones free-standing, exposing voids in the structure. This would suggest that the structure was without earth packing. The centre of the cairn had been disturbed and material removed (possibly two courses of stones) to a distance of 4 m from the cairn.

Some peat remained in the vicinity of the cairn forming a band, 0.6 m wide, along its western edge and a more substantial bank to the north and north-west. The remaining parts of the edge had been completely denuded of peat by run-off.

The excavation (from an outline by R. Leech)

Excavation was confined to an area 6 m by 8 m and the cairn lay entirely within this area. It was planned at scale 1:20 prior to excavation. The loosely packed nature of the construction made excavation by quadrants impossible and so the cairn was carefully dismantled until only one course remained. During this removal it was determined that the upright slabs noted by Gibbons (1983) did, in fact, form a

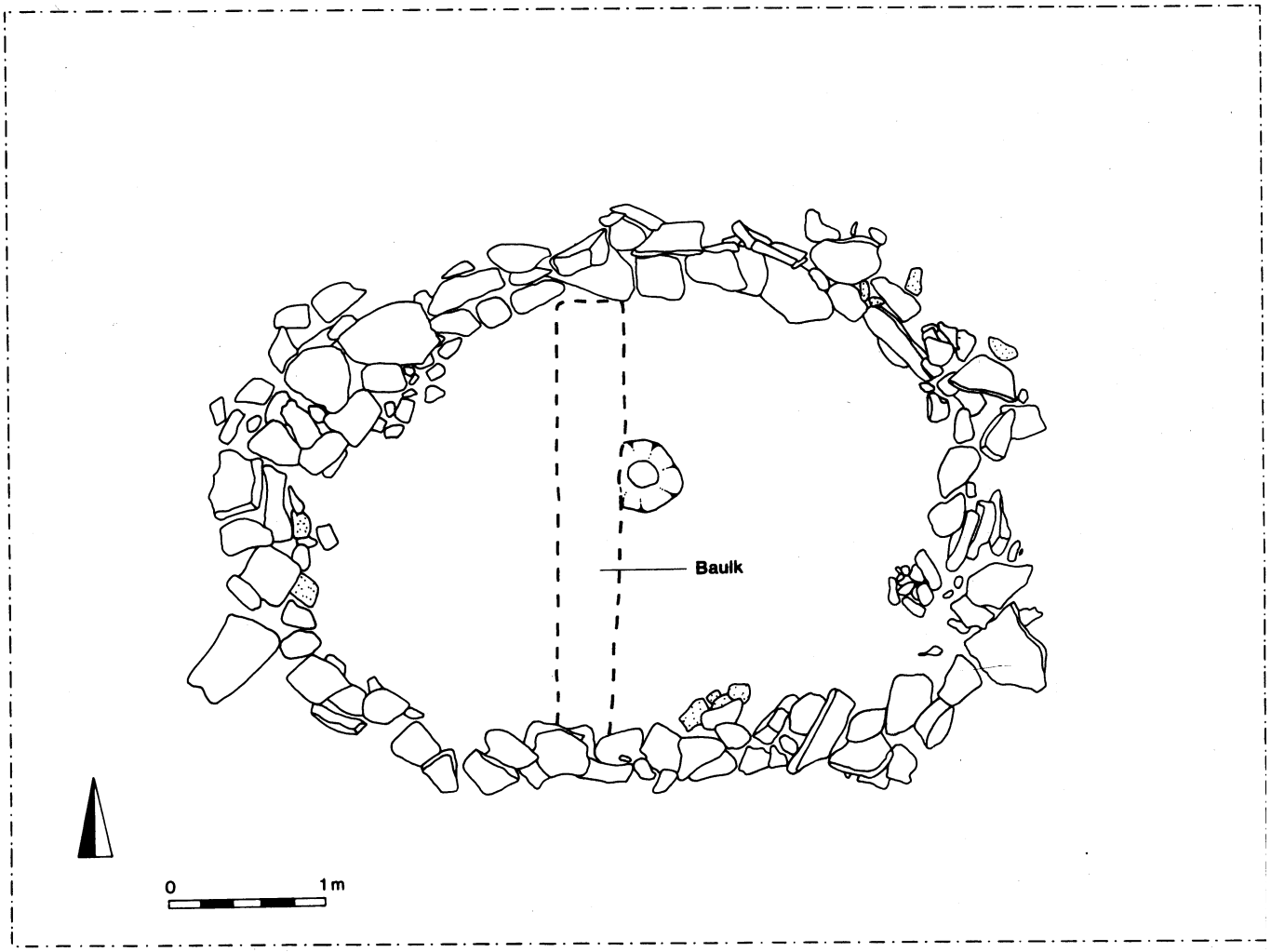

Fig. 5
Jepson's Gate: cairn after excavation, showing the kerb

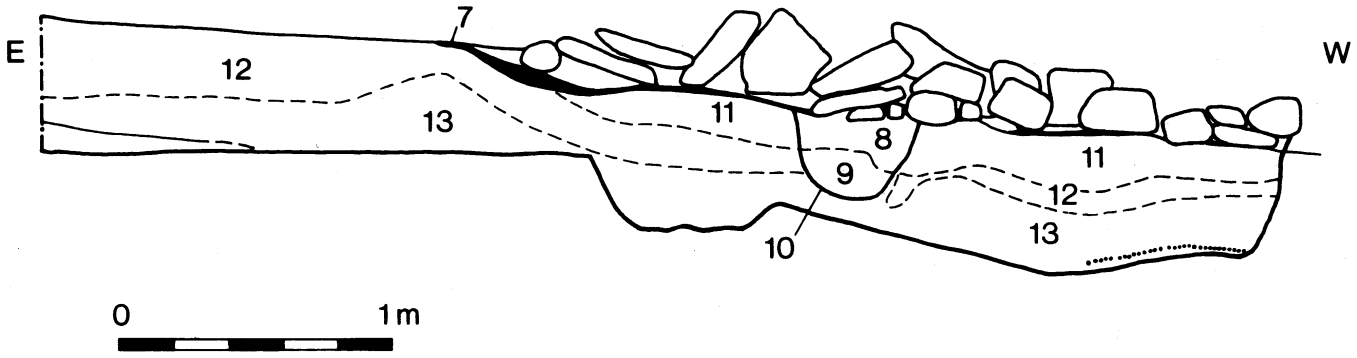

Fig. 6
Jepson's Gate: cairn in section

liscrete kerb round the edge of the cairn (Fig. 5). At this oint a second plan was made at 1:20 and subsequently one alf of the remaining cairn, except for the kerb, was emoved. The resultant section was drawn (Fig. 6). It ecame evident, during this removal, that approximately alf of the construction material showed signs of severe urning. However, this was only confidently discernible vhen the stone was dry and a subsequent prolonged period f continuous wet weather made a full analysis of burnt and nburnt stone impossible.

A section across the cairn (within contexts 12 and 13) was emoved for soil and palaeobotanical analysis (see Barnes elow). Examination of the vertical east face of this section evealed the presence of a pit (10) cut into the mineral soil, vhich, on excavation, proved to be 0.43 m in diameter and).31 m deep. It was filled with a black soil (9), which ontained much charcoal and some apparently unburnt wood subsequently recognised as modern tree root). The sides of he pit were sealed by a thin lining of brown clay (16) with an nner black, peaty layer (15) which possibly represented the emains of a very badly decayed ceramic vessel.

No artefacts were recovered from within, or beneath, the airn. Two fragments of worked chert were found on the urface of the subsoil, to the west of the cairn, but within the xcavated area.

Discussion

uch small cairns have often been attributed to field learance and, lying as it does within a complex of alls, at first sight such an intepretation would have eemed appropriate for the cairn on Hurst Hill. As ibbons noted in 1983, however, there is a large mount of millstone grit lying upon the old surface mineral soil) all around the cairn and thus it would e reasonable to suggest that the cairn was not the esult of stone clearance in the immediate environs.

The careful, kerbed construction of the cairn and he pit, placed centrally beneath it, could suggest that he cairn fulfilled a funerary purpose. This may be corroborated by indications of a concentration of high phosphate values around the area of the central pit (D. Gurney pers. comm.). But, although it contained a burnt deposit, there were no visually recognisable signs of a cremation burial or funerary vessel and so interpretation of the function of such a cairn on Anglezarke Moor must remain largely speculative.

In size and shape it is paralleled by oval cairns within many of the groups of small cairns on the south-west Cumbrian Fells (Leech 1983); within these groups the proportion of oval to round cairns is roughly 1 to 10. Excavation of a similar small cairn near Devoke Water, Cumbria, also failed to determine a function (P. Howard pers. comm.). The Hurst Hill cairn possibly also lies within a scattered group of small cairns, all still partially buried by peat.

RESULTS OF THE PALYNOLOGICAL RESEARCH

(B. Barnes)

As part of the programme of pollen studies two profiles associated with the excavation of this small oval cairn (site 73), thought to be of Bronze Age date, were examined; whilst results from that in direct association with the cairn proved disappointing, those from the external profile are discussed below. Work on the palynological material was undertaken jointly by B. Barnes and M. Bain. The material was prepared using conventional techniques (Faegri & Iversen 1964) and nomenclature for flowering plants was based on Clapham *et al.* (1981). Cereal pollen was distinguished on size criteria, ie. < 45 mm. A full account of the method, pollen counts, and a copy of the full report forms part of the archive.

A sample column was taken from within the cairn (ANG 83/01 INT) and a second one from 3 m outside it (ANG 83/01 EXT) as a comparison. Unfortunately it only proved possible to prepare a pollen diagram for the latter, as there was insufficient pollen available from all but two horizons in the sample from the cairn interior. Stratigraphy of the two profiles was as follows:

ANG 83/01 EXT

Surface	Charred, bare peat exposure.
0–50 mm	Somewhat granular, dark greyish-brown humified peat with traces of charcoal, fragments of monocot material, and ferruginous silty material; 10YR 4/2.
50–220 mm	Very dark brown, fairly amorphous peat with fragments of fine rootlets and monocot leaves; charcoal frequent between 50 and 200 mm, occasional below this. Silt and fine quartz grains noted at 165 mm, recorded as frequent at 180 mm and below; 10YR 5/2.
220–310 mm	Very dark greyish-brown humus stained decayed stone, granular in texture grading into parent gritstone rock. Some traces of monocot leaf and rootlets, plus remains of highly decayed *Eriophorum* rhizomes; 10YR 3/2.
310 mm	Limit of excavation.

ANG 83/01 INT

0–50 mm	Very dark brown amorphous peaty soil, abundant in charcoal and with high silt content; 10YR 2/2.
50–280 mm	Light yellowish-brown mineral material including silt, sands and flattish pieces of gravel up to 100 mm diameter, material grading to brown (10YR 5/3) below 150 mm; traces of organic material throughout, charcoal occasional to 250 mm, becoming frequent below. Humic staining evident; 10YR 6/4.
280–380 mm	Material as above but richly interspersed with black amorphous material thought to be charcoal. Colour very dark grey; 10YR 3/1.
380–440 mm	Yellow to light yellowish-brown decayed gritstone and rock flour, many pieces of gritstone to 100 mm diameter with a superficial concretion of iron oxide. Short lengths of carbonised material up to 10 mm, possibly decayed tree roots, particularly around 400 mm; 10YR 6/4–10YR 7/6
440 mm	Limit of excavation.

The pollen diagram

ANG 83/01 EXT (Fig. 7) demonstrates low values for pine, elm, and lime, the major tree taxa represented being oak, alder, birch, and hazel; herbs make a significant contribution to the total pollen rain (never less than 30%). The deposits relate to the Flandrian III chronozone of the regional pollen diagram prepared for Red Moss, Horwich, by Hibbert *et al.* (1971). The diagram can be divided conveniently into five assemblage zones, here labelled AEa to AEe; they are described as follows.

AEa, 250–200 mm: Hazel–Birch–Alder zone: characterised by high *Corylus* and Gramineae values which decline, along with *Betula*, through the zone. There are corresponding increases in oak and alder at the upper boundary. Spores of Polypodiaceae show their highest values for the profile.

AEb, 200–160 mm: Oak–Alder zone: the expansion of the above taxa continues through the zone and high values for *Calluna* and *Pteridium* occur, corresponding with a decline in Gramineae levels. The arboreal pollen is dominated by *Alnus*, with values in excess of 40% AP.

AEc, 160–120 mm: Alder–Heather zone: an initial expansion of alder is accompanied by a general decline in arboreal pollen, particularly *Quercus*, and a significant rise in *Calluna* pollen and the ericaceous taxa generally. Herbaceous taxa decline to a minimum in this zone. Charcoal displays a sustained presence.

AEd, 120–50 mm: Oak–Ash–Gramineae zone: a significant expansion of herbaceous taxa, particularly Gramineae, coincides with a reduction in the ericaceous types. Oak expansion occurs in the zone. Ash is recorded through most of the zone, whilst *Alnus* shows a reduction from the previous high levels.

AEe, 50–0 mm: Birch–Oak–Hazel–Alder zone: a decline in herbaceous taxa is accompanied by a slight increase in tree and heath types. *Fagus* is recorded and values for oak and birch are maintained. A range of herb taxa persist, particularly those associated with open situations such as *Plantago*, *Urtica*, *Rumex*, and Chenopodiaceae.

The palynological evidence favours a mid-Flandrian III period for the deposits at this site (Baines unpublished). Comparison with radiocarbon dated sites in the area has helped to locate the deposits more firmly and enables the following interpretation of the evidence.

General Interpretation of Pollen Assemblage Zones, ANG 83/01 EXT

Zone AEa

The indications of a regional open damp *Betula–Alnus* woodland probably relate to lower altitudes, as a local presence would be expected to give a much greater pollen representation than has been obtained. Extensive *Corylus* scrub could be indicated, however, by the high value for Coryloid pollen, both as the flowering understorey of a light woodland canopy and, possibly extending to higher elevations nearer to the site itself. The high Gramineae values could indicate open clearings, but more probably

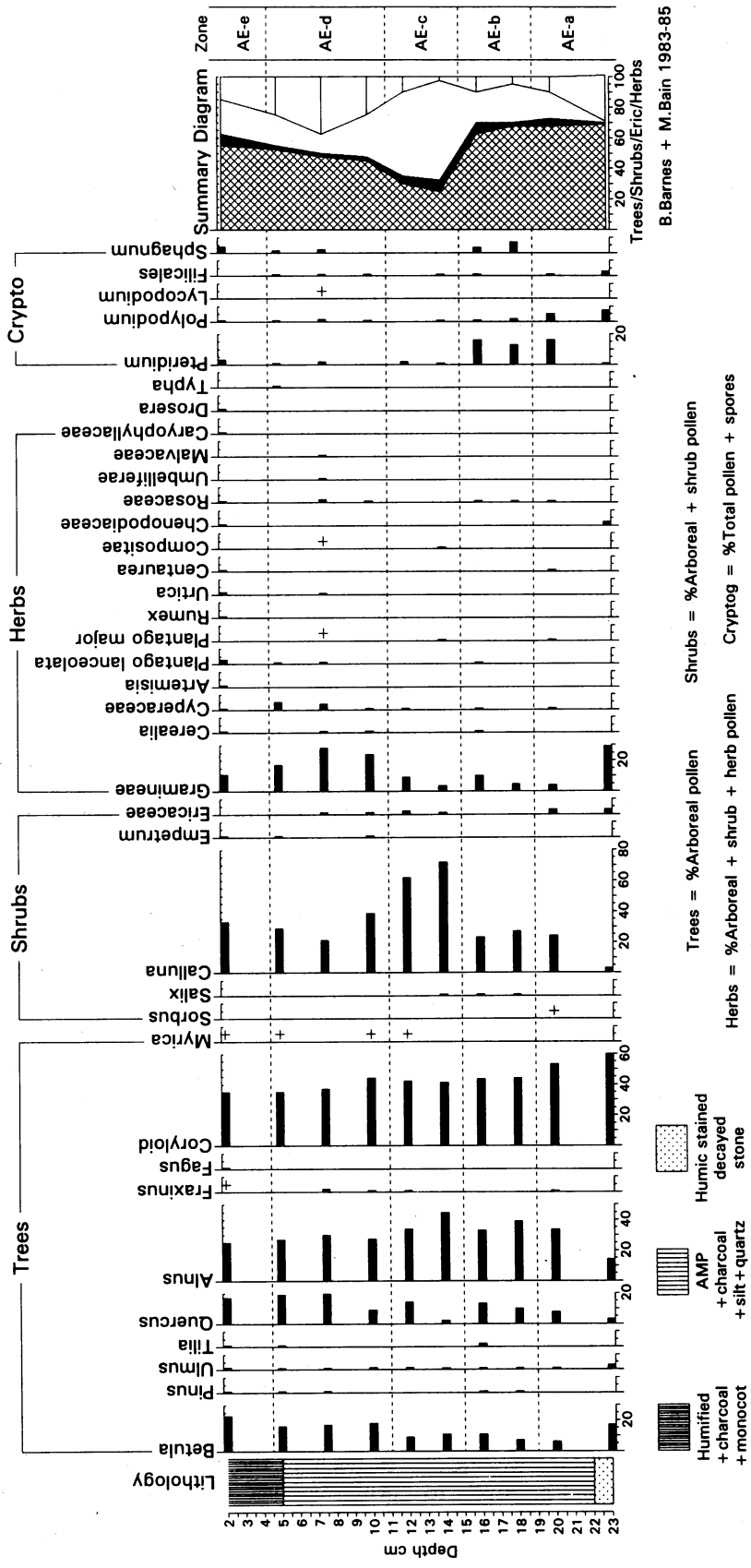

Fig. 7
Jepson's Gate: pollen diagram

result from a grassland vegetation in the vicinity of the site, indicative of cleared upland plateaux along the western margin of Anglezarke Moor. Elevations of cryptogam levels could reflect epiphytic colonisation of damp woodlands and scrub.

Stratigraphically, pollen assemblage zone AEa occupies the upper mineral soil layers and the noticeable change in the pollen spectra from 230 mm to 200 mm, involving most of the taxa represented in the basal levels, could be indicative of an erosional episode. The inwash of silty, mineragenic material could account for the mineral component in the highly humified peat between 220 mm and 180 mm, and appears to support the above suggestion.

The low *Ulmus* values and discontinuous *Tilia* representation indicates a later Flandrian III onset of peat formation, at some time during Godwinian zone VIIb/VIII, and this relates well to other diagrams from the immediate area (Pikestones sites, Bain unpublished).

Zone AEb

The overall increase in AP representation could indicate an increase in canopy with *Quercus* cf. *petraea* replacing *Betula* in flanking woodlands. At higher altitudes, *Calluna* heath appears to replace the grassland, perhaps indicating a period of continuing soil deterioration — a view which is reinforced at 180 mm and 160 mm by the *Sphagnum* representation. If the latter reflects a general increase in wetness, then soil leaching, with consequent podzolisation, would favour the expansion of heathland, and could also give rise to the mineral inwash present throughout the site, mentioned previously, which corresponds to the low *Sphagnum* peak. The expansion of *Pteridium* indicates local bracken extension in areas near to the site, possibly reflecting anthropogenic activity and a shifting form of agricultural activity in the areas marginal to the moorland. Such activity is also apparent in the locality, reinforcing the above view, some cultivation being confirmed by the presence of Cerealia pollen; additionally, *Plantago major, Centaurea,* and Rosaceae (*?Potentilla*) are represented, all of which have been associated with arable exploitation.

Zone AEc

The major fall in Arboreal Pollen values, particularly *Quercus*, and a coincident increase in *Calluna* could indicate considerable destructive exploitation of the peripheral woodland and its replacement by developing *Calluna* heath. *Alnus* values are little affected, possibly growing in less favourable, wetter localities. This could indicate oak clearance associated with the lower slopes, perhaps with some replacement by birch. *Fraxinus* displays a continuous record at this point in the profile, and this could well have increased as a result of woodland clearance.

The continued low Gramineae values through the zone reflect further continuation of an upland plateau heath vegetation, whilst the sustained Coryloid values probably reflect the ability of *Corylus* to thrive where the woodland canopy is opening, and, possibly, to respond positively to fire. Fire is indicated by increased charcoal representation both in macro- and micro-fossil checks. This maintenance of the Coryloid values could, alternatively, reflect a better flowering of *Corylus* in a thinning canopy even though the density of specimens may have been reduced. A possible source for at least some of the Coryloid pollen, as *Myrica*, should not be excluded, in which case expansion of the heath-bog conditions would also favour the maintenance of Coryloid representation, perhaps at a time when *Corylus* itself may well have been under threat from active clearance.

Zone AEc would certainly seem to reflect a period of active anthropogenic modification of the marginal forest.

Zone AEd

This appears to indicate limited forest regeneration and changes in the forest composition, favouring oak. Declining *Calluna* values may relate to the peripheral extension of the forest canopy, but alternatively to an expansion of grassland, as indicated by the Gramineae peak in this zone. This could relate to non-anthropogenic ecological change in the bog surface, but the intermittent records of charcoal may suggest recurrent burning, promoting the expansion of grassland. Evidence for both pastoral and arable farming is further suggested by the presence of *Plantago lanceolata, P. major, Centaurea,* Compositae, and Cerealia pollen, particularly in the upper part of the zone.

Zone AEe

This reflects a continuation of the forest regeneration of the preceding zone as well as the continued representation of taxa indicative of mixed agrarian activity. The recovery of *Calluna* values suggests some heath expansion and this coincides with evidence for a reduction in charcoal representation which, if it reflects less burning activity, would favour *Calluna* regeneration. The upper zone AEe levels must, however, be viewed with caution — stratigraphically there is a considerable mineral inwash in the peat, which must question the integrity of the spectra achieved, and also surface material was badly charred, apparently from recent burning.

Relationship to other pollen diagrams and suggested dating

Several pollen profiles have been constructed from sites on the Rivington-Anglezarke uplands (Bain unpublished) and a regional pollen assemblage zone sequence has been formulated from these. In relation to these sites the ANG 83/01 EXT profile compares closely in its PAZ b, c, and d to regional zone D, which displays the following features.

Arboreal pollen is dominated by *Alnus*, *Quercus*, and *Betula*, along with moderately high Coryloid values. *Tilia* representation is sporadic and low, as are *Ulmus* and *Pinus*. *Calluna* increases through the lower part of the zone while *Pteridium* displays a succession of small but increasing peaks, coincident with increases in pastoral and arable weed pollens. *Sphagnum* values show considerable fluctuation throughout the zone, a peak in lower zone D coinciding with the first increases in accumulation rate in deeper profiles, whilst further high values are associated with the upper section of the zone. Also, at the upper end of the zone,

here are marked falls in pollen density, indicative of further ıcrease in the accumulation rate, which immediately ırecedes a pronounced clearance agricultural phase epresented on diagrams throughout the Rivington-ınglezarke uplands and dated to the Romano-British ıeriod. Cerealia representation is sporadic and low in upper one D.

From radiocarbon dates so far received, regional pollen ssemblage zone D appears to span the period from *c.* 1200 al. BC to *c.* 50 cal. AD, a timespan calculated from dates vhich generally bracket the zone, but in some instances the one boundaries are dated, as follows (calibrated range to 1 igma):

lack Brook (Upper zone D)
HAR–6420 1840±70 BP 80–240 cal. AD
Winter Hill (Immediately below Lower zone D)
HAR–6206 2940±70BP 1270–1030 cal. BC
Upper zone D)
HAR–6419 1890±80 BP 20–220 cal. AD
'ikestones (Mid to upper zone D)
HAR–6209 1710±70 BP 240–410 cal. AD
Round Loaf (Mid zone D)
HAR–6417 2570±100 BP 80-540 cal. AD
Lower zone D)
c. 1200 BC projected from accumulation rates

By cross reference, the earliest date for the zone b spectra ıt the ANG 83/01 EXT site would be *c.* 1250 cal. BC, with he probability that it relates to the upper half of zone D rom about Black Brook (Upper zone D) 650–550 cal. BC. This is based on the general presence of Cerealia pollen, elated to the upper half of the zone, and considered along vith stratigraphic, *Sphagnum* value, and pollen density vidence, all of which indicate greater wetness and peat growth, particularly at the top of the zone, and all of which ıre features indicated by the ANG 83/01 EXT profile. The atest date for the upper part of the profile is *c.* 100–200 cal. ıD, or the earlier Romano-British period. The indications ıre therefore that the profile at Anglezarke has a maximum ime range from the later Bronze Age, *c.* 1250 cal. BC, to the Romano-British period. Erosion at a later date has removed ubsequent deposits which may have overlain the present eat burden, and has given a truncated profile as shown.

The pollen evidence indicates an environmental context for he Late Bronze Age–Iron Age/Romano-British period of ıpland wet grass–heath vegetation with the marginal slopes eing progressively cleared of *Betula–Quercus–Alnus* voodland and *Corylus* scrub, in order to facilitate ntermittent agricultural exploitation through a period of ncreasingly wetter climate. The other, deeper profiles btained from the area, *viz* Black Brook, Round Loaf, and Winter Hill, indicate that the peripheral woodland and scrub vas secondary and resulted from a considerable clearance ıctivity earlier in the Bronze Age period. Although alynological evidence from the lower part of ANG 83/01 NT, ie. the cairn site, was minimal, the two pollen spectra rom the top of the 50 mm capping the cairn were substantial. The 50 mm spectra from both pollen sites compare reasonably well, although the 10 mm ANG 83/01 INT and 20 mm ANG 83/01 EXT compare less favourably. The upper levels of both sites, however, show signs of disturbance (see above), so that comparisons are highly tentative.

Discussion of the provenance of the ANG 83/01 EXT deposits suggests that the uppermost deposits accumulated not later than 200 AD, thus the construction of the cairn appears to pre-date this figure.

AN EARLIER MESOLITHIC SITE AT RUSHY BROW (SITE 21)

Rushy Brow (SD 6329 1769) lies at the south-western edge of Anglezarke Moor, where it forms the eastern bank of an upper tributary of Limestone Brook, which descends from the moor via the steep-sided and narrow Limestone Clough. To the immediate north, Hurst Hill rises to over 312 m OD and from there the land falls away in all directions; southwards, it descends to the edge of the moorland at Parson's Bullough (198 m OD). Thus Rushy Brow forms an off-summit shoulder to the upland plateau. The excavated area lay at the top of a steep, east-facing slope overlooking Limestone Clough at a point where it broadens rapidly and becomes significantly shallower, disappearing completely just to the north of the site. Below the site the clough is steep, rocky and constricted; above it, the watercourse is congested by vegetation and the shallow floor of the clough is largely waterlogged.

The site has unimpeded vision southwards, overlooking the clough and providing an extensive view over the South Lancashire Plain. Eastwards the landscape is dominated by the bulk of Winter Hill and to the north-east there is a clear view over the main plateau of Anglezarke Moor. To the west, however, vision is much restricted by the rise of Hurst Hill.

The environs of Rushy Brow have been subject to substantial recent erosion. Much of the slope below Hurst Hill is denuded of vegetation to some extent and there are large eroded patches. The minor watercourses are deeply scored and in many places there has been substantial redeposition of water-eroded peat. The present-day vegetation is largely dominated by combinations of *Molinia caerulea*, *Deschampsia flexuosa*, and *Calluna vulgaris* in varying proportions. On Rushy Brow itself there are large areas of bare peat and exposed mineral soil dotted with small islands of peat, preserved by a stabilising topping of tussock grass.

The site, represented as a small scatter of poor quality chert flakes (site 21), was located during the course of the rapid field surveys of 1983–5 detailed above. On its discovery a small sample of chert flakes was collected for preliminary identification and dating, but most of the observed material was left *in situ*. The exposed position of the site, upon the very shoulder of Rushy Brow, placed it under considerable threat from wind and water erosion and it was clear that the scatter would not remain intact for any extended period of time. The subsequent excavation, which was dominated by periods of extremely high winds, emphasised the transient nature of an exposed lithic scatter; small flakes were on occasion blown away, and the scouring action of the winds would have undoubtedly loosened the larger components of the assemblage and left them vulnerable to downhill movement by heavy rain.

Research design

A significant Mesolithic presence on Anglezarke Moor has been obvious for some time, but until this project was undertaken, and although the moor has been scoured by flint collectors, few detailed or methodical records appear to have been generated. No earlier excavations of Mesolithic material are recorded and recent study is represented solely by the work of Hallam. In consequence any statement on the Mesolithic material of Anglezarke has had to be based on typological and locational analogy to sites elsewhere in the Pennines, such as Warcock Hill and other sites in the area of Marsden, near Huddersfield, West Yorkshire.

The research strategy for the site at Rushy Brow consisted of four inter-related objectives:

1. To record, fully and accurately, a threatened site prior to its destruction by natural agencies.
2. To establish exactly what such a relatively small lithic scatter might represent archaeologically.
3. To relate the site to a) other similar sites on the moor, b) other sites of the South and Central Pennines and c) to a wider view of spatial distribution and subsistence strategy within the Mesolithic of northern England.
4. Lastly, to establish, and quantify if possible, the nature and scale of the threat posed by the removal of peat cover and subsequent exposure to wind, rain and human agency, to an archaeological site as ephemeral as a small lithic scatter.

The Excavation

The excavation at Rushy Brow (Fig. 8) took place over a period of three weeks in October 1985, running concurrently with the final season of survey on the moor. Prior to excavation, as a preliminary assessment of the extent of the surviving lithic scatter, the entire shoulder of Rushy Brow, to the bottom of the clough, an area of about 2000 m^2, was intensively field-walked, employing parallel traverses of approximately 2 m separation. This rapid investigation confirmed the original impression that the lithic material was confined, at least at the surface, to a small area about 9 m^2 in extent.

In order to encompass the entire scatter, a 10 m square with a 1 m grid, was laid out with the scatter at its approximate centre. The NGR coordinates of the grid were added to the general survey database and a contour survey of the hillside undertaken (Quartermaine, above).

The decision was made to strip the entire site, rather than adopt the more usual previous approach to Pennine Mesolithic flint scatters of excavating in 1 m squares. As a preliminary exercise the excavation area was intensively searched and the coordinates of each visible element of the lithic scatter recorded to the nearest 10 mm prior to its removal. The entire area was then cleaned and again all lithic material encountered was plotted.

The remote location of the site (about 45 minutes uphill walk from the nearest point of access to the moor) and its exposed situation, led to a number of logistical problems, not least in the range of equipment that it was possible to take to the site. Thus, whilst three-dimensional plotting of the finds would have been desirable, it proved impossible with the equipment available. The extremely high winds which prevailed throughout the period of the excavation rendered the results of the use of tape and plumb line meaningless and so all finds were plotted only two-dimensionally.

The patchy peat overburden (003), varying in thickness, where it survived, up to 180 mm, was removed to reveal a stony red–brown mineral soil with an uneven surface (004). A number of sinuous brown patches, radiating from two general foci were excavated and appear to represent tree-root systems, presumably pre-dating the formation of the peat.

Lying under the peat and directly on the mineral soil was a scatter of sub-angular gritstone fragments,

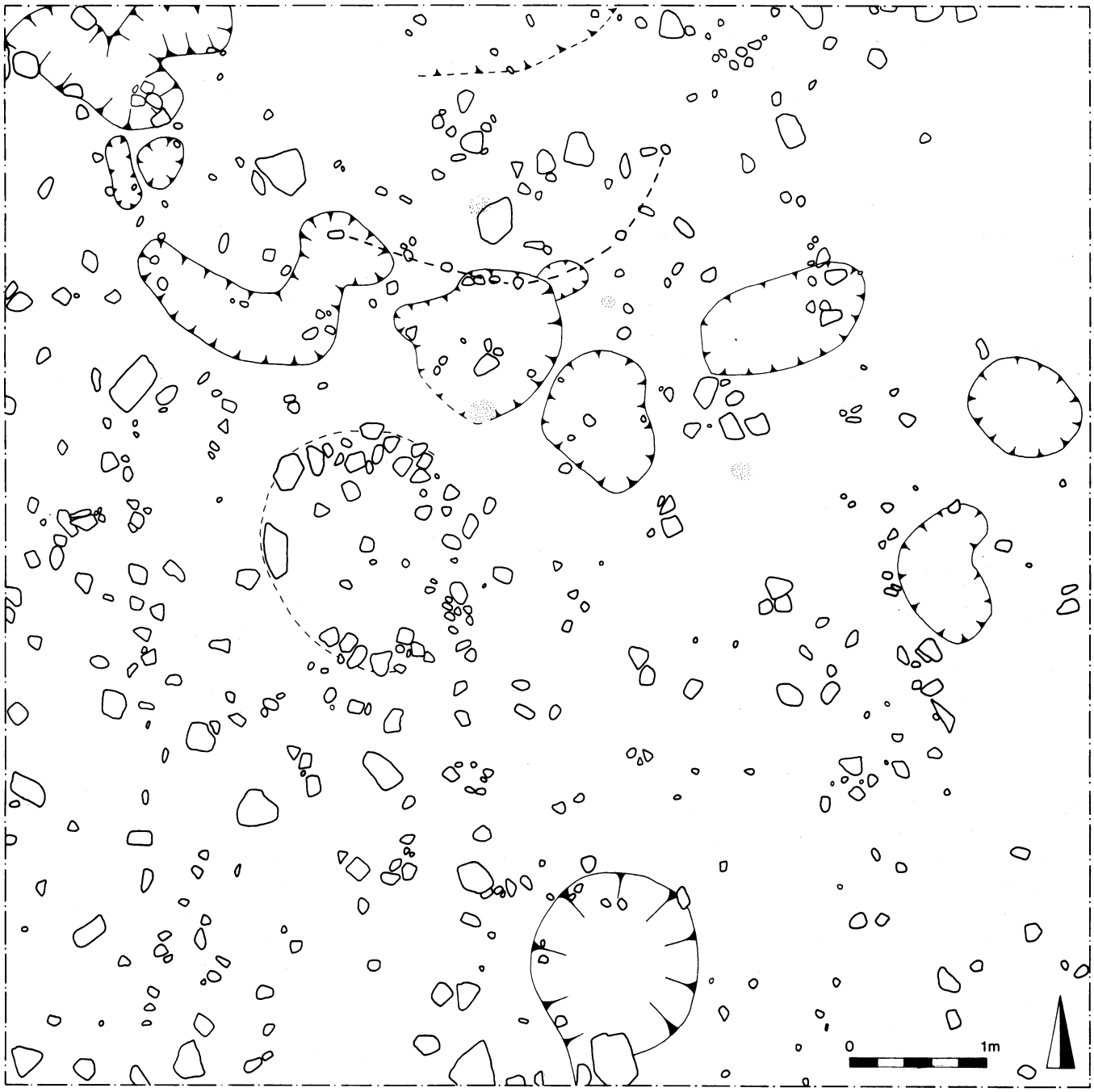

Fig. 8
Rushy Brow: trench plan, showing the two putative structures

a number of which appeared to form a distinct semicircular setting, *c.* 1.5 m in diameter. Associated with the stone setting (005), and in the same relationship to the mineral soil, was a dense scatter of worked lithic material, predominantly grey–brown coarse chert. The stone setting appeared to form a distinct focus and provided a clear western (uphill) boundary for the scatter. Nothing in the configuration of the semicircular setting suggested the provision of support for uprights, nor on removal, were any stake-holes found in association with it. The setting might, however, be interpreted as evidence for an insub-

stantial shelter-type structure and the distribution of the lithic material, by analogy with Deepcar, North Yorkshire (Radley & Mellars 1964), can be used to infer the former existence of an impenetrable (?skin) superstructure associated with the semicircle of stones.

No features, except the sinuous patches mentioned above, were visible at the surface of 004, but during its removal a small number of stake-holes, all with diameters of around 80 mm (006, 007, 008, 015, 017, 019, 021), one of which was ostensibly double (021), was encountered. All contained a similar dark grey silty fill. Five of them (006, 007, 008, 015, 019) appeared to form a broad arc, open to the west, which appeared to encompass a very slightly raised area. Two of the stake-holes contained lithic material (008: two halves of a large chert blade and 020: a large chert core). Such an arc of stake-holes can, perhaps be interpreted most easily as the remnant of a flimsy windbreak-like structure (Fig. 8). A large quantity of lithic fragments was encountered within the mineral soil, and whilst not as clearly concentrated as those lying upon it, directly under the peat, they seemed to be denser in the vicinity of the arc of stake-holes. The base of 004 manifested patchy gleying and a graded colour change, becoming more yellow towards the bottom. Lithic material was encountered throughout the layer.

Removal of 004 revealed a bright yellow layer with white–yellow sandy patches and an uneven surface, covering the entire site (010). There were some possible root holes and patches of stone (rotten gritstones) lying in the hollows. This and underlying layers were archaeologically sterile. The mineral soil (004), and underlying layers, can be identified as belonging to the Anglezarke Moor soil series. They represent a truncated stagno-podzol and the blanket peat overburden clearly lies discontinuously upon them. This truncation means that the apparent two-phase stratigraphy demonstrated by the lithic distribution is false (H. Keeley pers. comm.) and the group of lithic material that lay directly on top of the mineral soil merely represents a weathering-out of lithic material incorporated in the original soil (now represented by the mineral soil) during its formation. This weathering took place over an undefined period of time before the initiation of the formation of blanket peat. In general terms blanket peat on Anglezarke can be demonstrated to have its genesis in the Late Bronze Age (*c.* 1250 cal. BC).

Artefact recovery

The sieving of random samples, taken as a check to the standard of finds recovery, revealed, pleasingly, that probably little or no lithic material was missed, despite the extreme weather conditions (see Barton & Bergman (undated) for the effect of high winds on experimentally deposited lithic material; experience extends such effects to newly exposed archaeological material — in short it blows away!).

Analysis of the lithic material appears to confirm that the standard of recovery was good. Jacobi (pers. comm.) indicates that the presence within the assemblage of certain, minute recognisable waste fragments, such as microburin notch spalls and microlith sharpening flakes, is a rule-of-thumb indicator of good recovery. Four fragments of rare shale bead were, however, recovered from the sieving residue, perhaps implying that others were missed.

Lithic material from the site

A range of lithic artefacts is illustrated on Figure 9 and the distrubtion of the lithic material is shown on Figure 10.

RAW MATERIAL

Over 400 fragments of flint and chert were recovered. Poor quality coarse chert, probably of local origin, formed the major part of the assemblage, in the following proportions; by numbers of fragments: 96.55% poor chert, 0.25% good quality (?Derbyshire) chert, 3.5% flint; by weight: 97.8% poor chert, 0.27% good quality (?Derbyshire) chert, 1.93% flint. Of this material 374 fragments were knapping waste, including cores. Of the waste 97.59% was poor chert, 0.27% good quality (?Derbyshire) chert, and 2.14% flint.

Apart from the cores, which are described separately, all the waste material was sorted by length into five ranges, <5 mm (2.10%); 5–15 mm (1.44%); 15–25 mm (37.01%); 25–50 mm (54.14%); >50 mm (5.31%).

BURNT MATERIAL

Forty-four small pieces of chert (16.5 g; 2.5% total weight) bore signs of burning. When their distribution was plotted it showed them to be spread uniformly over the site, with no concentrations which might have been interpreted as hearths. This, along with an absence of charcoal and fire-reddened stone on the site, strongly suggests that there was no hearth present within the excavated area, which may indicate an extremely limited occupation. A number of possibilities can be advanced to account for the presence of burnt material on the site, but either natural causes or deliberate modern burning in the course of land management would seem the most likely.

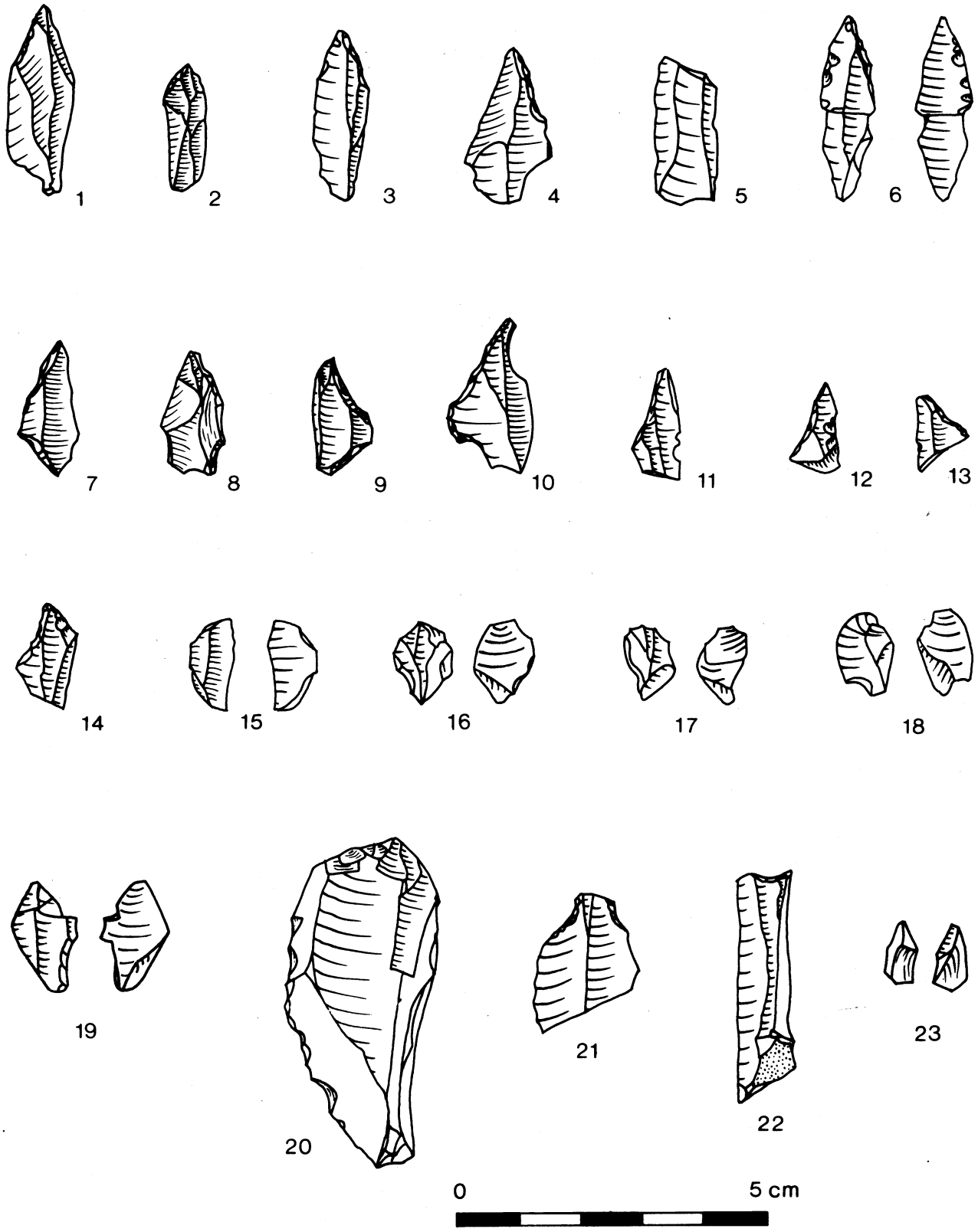

Fig. 9
Rushy Brow: lithic material from the excavations. Scale 1:1

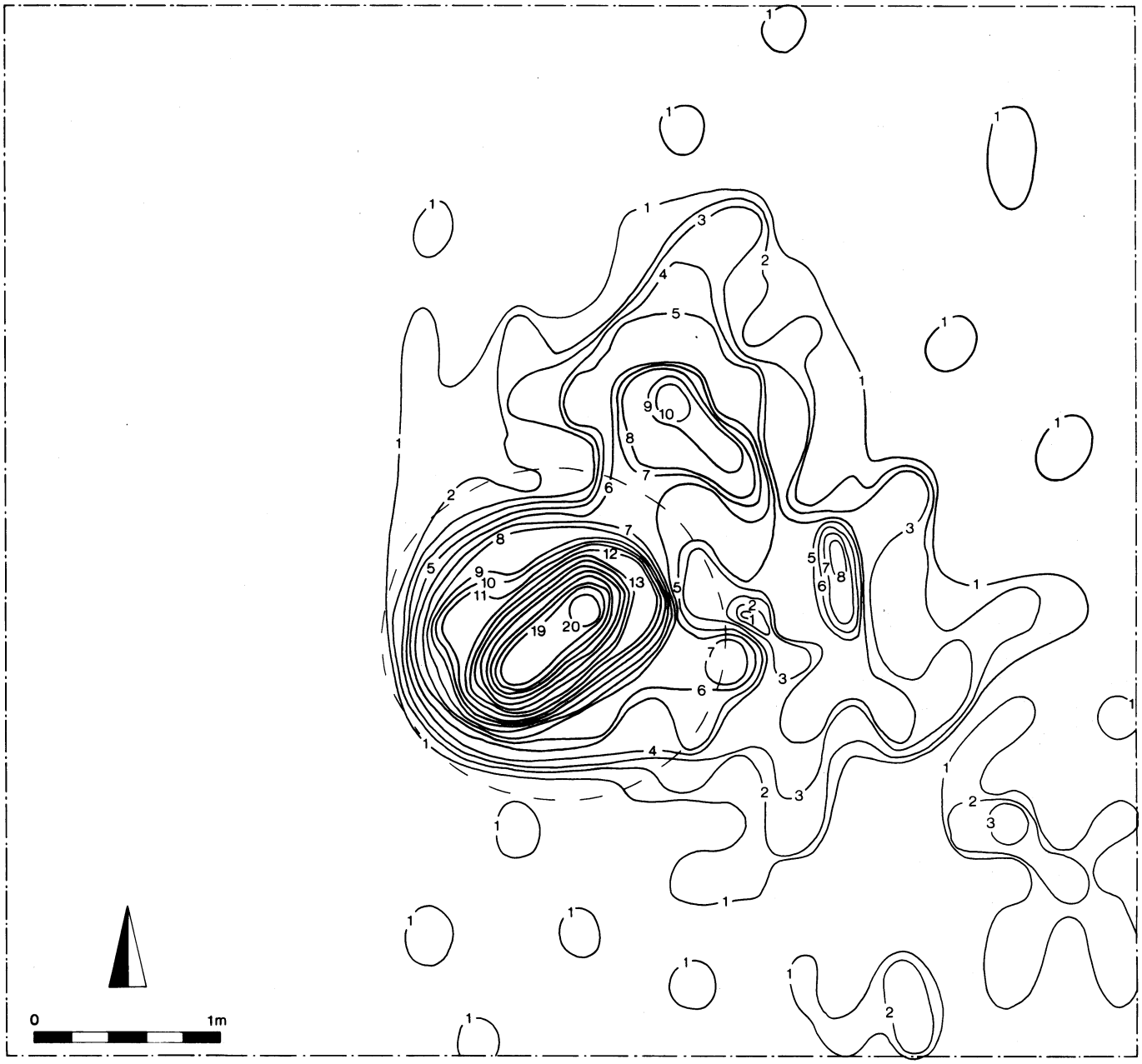

Fig. 10
Rushy Brow: distribution of lithic material with regard to the two structures

THE TOOL ASSEMBLAGE

Of the 18 tools recognised from the site, 15 are microliths, and the remaining 3 generalised tool types, probably made on the spot for a specific purpose and discarded soon after. All of these have been illustrated (Fig. 9) and are described below. Eleven other fragments of chert exhibit possible deliberate retouch. This apparent modification is most likely to reflect the *ex tempore* utilisation of waste, or even to be the result of the subsequent trampling of the site. None of the latter have been illustrated. Six microburins, two microburin notch spalls, and a microlith trimming/resharpening spall were recognised from the waste. Four of the microburins and the trimming/resharpening spall are illustrated and all are described below. (Individual finds numbers appear in brackets.)

Microliths and other tools

(All those illustrated are oriented with the percussion rings on the ventral surface opening to the top.)

1. (355) Obliquely truncated bladelet; truncation on left-hand margin. Flint.

2. (362) Obliquely truncated bladelet; truncation on left-hand margin. Flint.
3. (15) Obliquely truncated bladelet; truncation on right-hand margin. Slight damage to leading edge near tip. Flint.
4. (164) Obliquely truncated bladelet; truncation on right-hand margin. Flint.
5. (253) Obliquely truncated bladelet; truncation on right-hand margin but major part of truncation formed by break. Flint.
6. (275/390) Obliquely truncated bladelet; truncation on right-hand margin. Broken in two. On proximal portion are a pair of minute flutes on dorsal surface, originating from break. On right-hand margin of distal portion a burin-like removal commences at break. Along leading edge of proximal portion are small bifacial scalar removals. All these features can be accounted for by damage on impact, or twisting within a wound. Chert.
7. (294) Bladelet; pair of diverging oblique truncations give approximately triangular outline. Both on left-hand side. Chert.
8. (165) Bladelet; pair of diverging oblique truncations give approximately trapezoidal outline. Both on right-hand margin. Flint.
9. (64) Bladelet; pair of diverging oblique truncations give approximately trapezoidal outline. Both on right-hand margin. Chert.
10. (295) Flake; vertical chipping along major part of left-hand margin. Fresh damage. Flint.
11. (342) Fragment, obliquely truncated piece, uncertain original outline. Truncated on left-hand margin. Chert.
12. (313) Fragment, obliquely truncated piece, uncertain original outline. Truncated on left-hand margin. Small scalar removals along majority of leading edge, tip appears to have been twisted off from lower part of a microlith. Chert.
13. (345) Fragment,obliquely truncated piece, uncertain original outline. Truncated on right-hand margin. Chert.
14. (220) Fragment, oblique truncation on left-hand side and traces of additional retouch at tip on leading edge. Original outline unknown. Chert.
15. (159) Appears to have twisting break (as No. 12). Dimensions suggest microlith portion. Chert.

Microburins

(Oriented with butt-ends up as if still attached to microlith)

16. (256) From microlith with left-hand truncation. Chert.
17. (312) From microlith with left-hand truncation. Chert.
18. (296) From microlith with left-hand truncation. Chert.
19. (373) From microlith with right-hand truncation. Chert. Not illustrated.
20. (13 & unnumbered) Possible microburins. Chert.
21. (181,357) Microburin notch spalls, formed by creating notch before effecting oblique truncation. Chert.
22. (121) Trimming/resharpening spall. From tip of obliquely truncated piece with truncation on right-hand margin. Chert is appreciably coarser than that used for rest of the microliths.
23. (212) Irregular blade with trimming across end (squared off) to form narrow scraper-like edge. Irregular retouch mainly along left-hand margin; may be the result of trample. Coarse banded chert.
24. (336) Blade, possible concave truncation across proximal end, removing striking platform and bulb of percussion. Chert.
25. (247) ?Middle portion of blade-like piece, steep chipping at proximal end which begins to narrow fragment as if towards point ?a stout piercer. Chert.
26. (32,108,268) Flakes, rather irregular semi-abrupt chipping along one margin. Could be deliberate retouch, resultant on use or trample damage, Chert. Not illustrated.
27. (89) Broken piece, modification along one margin, possibly result of deliberate retouch, use, or trampling. Chert. Not illustrated.
28. (208) Flake, light distal modification as No. 27. Chert. Not illustrated.
29. (248) Broken blade, light distal modificationas No. 27. Chert. Not illustrated.
30. (241,347) With ?single delicate burin-like removals, may be deliberate or result of damage. Chert. Not illustrated.
31. (238) Flake, East Coast-type flint, possible deliberate modification along margin, but may be result of use or trampling. Not illustrated.
32. (17) Broken blade, bifacial damage to both edges, possbly resulting from use or trampling. Chert. Not illustrated.
33. (146) Distal fragment, flake or blade with damage patterns mimicing scraper. Chert. Not illustrated.

Of the 15 microliths from the site, 7 are flint, probably from the East Coast drift (Jacobi pers. comm.) and the remainder are of local chert. Only 13 pieces (3.2%) from the total assemblage are flint, and, of these, 7 are microliths and remainder small chips most likely to have resulted from refurbishing existing tools rather than the manufacture of new ones. The single large flake (238), which is unlikely to have been used as a core, had possibly been utilised as an *ex tempore* tool. There is thus no evidence to suggest the production of flint microliths at the site. In contrast, there can be no doubt that chert was being worked and the presence of up to 6 microburins (4 undoubted and 2 possible) and 2 microburin notch spalls, as well as the 8 chert microliths, presents firm proof of on-site production. A single microlith trimming/resharpening spall was recovered, interestingly in an extremely coarse chert not otherwise represented on the site. Presumably this, like the small flint chips, is indicative of the refurbishing of existing tools which were not badly enough damaged to be discarded.

The side upon which truncation had been effected is equally divided within the group (on one piece it could not be determined) and the microburins indicate 3 left and 1 right side truncations (2 unknown). The trimming/resharpening spall indicates a right-hand truncation. It is suggested that such an even division between left- and right-hand truncation is a culturally diagnostic factor and can be taken to link the Rushy Brow material more closely to a Star Carr-type assemblage than to a Deepcar type, since the assemblage from Deepcar exhibits an overwhelming preference for truncation on one side (Jacobi pers. comm.) Similarly linking this assemblage to that of Star Carr is the tendency of the microliths to be short in relation to their breadth and 'unsightly' (Jacobi pers. comm.), whilst the visual impression afforded by the Deepcar material is one of slenderness.

Two of the chert microliths (390/275 and 313) exhibit the hunting-type damage characterised experimentally by Barton and Bergman (1982) and which is consistent with damage on impact and/or twisting within a wound. Both had probably snapped on impact and, in the case of 390/275, the two pieces were separated on deposition by several metres, whilst part of 313 has been lost. It can be suggested that the presence of both halves of the damaged microlith indicates that a successful kill is likely to have taken place at, or very near, the site. The subsequent separation of the microlith fragments may have been the result of butchering or may indicate that the main part of the composite arrowhead, including that part of the individual microlith still attached to the shaft, was recovered from the carcass for repair or in order to recycle both the undamaged microliths and the resin with which they were hafted. None of the microliths, however, exhibits indisputable indication of burning, which would have suggested the heating of damaged composite arrowheads in order to facilitate the removal of broken microliths and the setting of replacements, or the retrieval from badly damaged arrows of undamaged microliths and the resin, for reuse.

Two roughly made scrapers and a possible piercer were also recovered, as well as 11 pieces which exhibit what could have been deliberate, but equally may have been accidental, modification as a result of casual use, or damage due to the subsequent trampling of the site scatter. The low representation of domestic-type tools such as scrapers may be taken as a confirmation of the hunting-type nature of the assemblage and lends weight to the suggestion that the site represents only the very temporary establishment of a hunting stand and not a more extended occupation.

Cores

Thirteen cores (total weight 420 g) were recovered. All were relatively large and had not been exhausted. All had been used for the production of blades or flake–blades. Details are presented in Table 6.

All the cores were prepared from the coarse grey–brown chert found in the locality of the site. This is of an irregular composition, with coarse and fine grained areas, as well as differing densities of material, occurring within each of the cores. Most of them incorporate irregular voids and fault planes. Such irregularities present considerable problems to the knapper, for differences in density will cause flake beds to run short and terminate abruptly and they will stop unpredictably at faults, failing to produce the intended size or shape of flake. Both of these undesirable phenomena can be demonstrated within the group of cores and it would seem obvious that this particular chert provides a raw material of very poor quality.

The cores exhibit a wide variety of form with little or no similarity between individual pieces. It is most likely that this is entirely resultant on the extreme variability of the raw material. It is perhaps interesting to note that the smallest (most used) cores are those in which the chert is visually less variable and finer grained. Indeed, when, as 321, the chert appears to be of a substantially higher quality, very small bladelets indeed, perhaps too small to be of use (Jacobi pers. comm.), can be produced. The poor raw material has led to ambiguity in the distinction between preparation and main removals.

That these cores were worked at the site is not in dispute, since a number of removals can be refitted. Several of them are large enough for it to be suggested that they were still viable for flake/blade production and it is perhaps surprising that they were discarded. It is possible to suggest that they were loosely 'cached' (their distribution does not suggest a deliberate grouped deposition) simply by leaving them at the site against the eventuality of a return visit. Alternatively a more profligate attitude may have been adopted towards such poor raw material by someone who was using it merely as a temporary expedient, for running repairs, but expecting to have better quality material easily available in the near future.

The range of core form is considerably more diverse and irregular than would be expected in an area where flint or good quality chert was readily available (Jacobi pers. comm.). Thus the individual forms within this group cannot be assigned a cultural significance and reflect only the problems associated with the working of such poor quality raw material. The implied necessity of using such poor

TABLE 6: THE CHERT CORES FROM RUSHY BROW

Record No.	Number and orientation of platforms	Product
131	single	flake-blades
139	single	blades and/or flake-blades
160	single	short blades
174	single	flake-blades
199	single	blades
201	single	blades and flake-blades
217	two, opposed	flake-blades
229	two, loosely opposed	flake-blades
230	two, at 90°	flake-blades
242	two, opposed	flake-blades
271	two, opposed	blades
321	two, loosely opposed	tiny bladelets
334	two, opposed	blades

quality chert might lead to the assumption that the users of the site were at least temporarily unable to acquire better flint or chert, perhaps indicating that they were at a considerable distance from a favoured source (?the East Coast drift) or from an available supply (base camp or formal cache).

Shale Beads

Other finds from the site were limited to four laminar fragments of small shale beads, recovered during the sieving of the random samples taken as a check on the standards of recovery (see above). Such black shale beads are an extremely uncommon find, known only from a few sites, including Star Carr. The presence of these beads underlines and reinforces the close typological links between the site at Rushy Brow and earlier Mesolithic groups further to the east, especially Star Carr.

Dating the site

From typological criteria the lithic assemblage from Rushy Brow, Anglezarke, can be placed firmly within the Early Mesolithic period. It forms a closed group and there is nothing from it that could be assigned a later date. The assemblage can be compared closely with those other groups in the South–Central Pennines first defined by Buckley as 'broad blade' industries, and discussed by Mellars (Radley & Mellars 1964). Jacobi (1978), whilst rejecting the term 'broad blade' as confusing, defines 'a series of microlith industries characterised by broad, obliquely blunted points, isosceles triangles, short or elongated bitruncated blades and, on the majority of sites, convex backed points also' and suggests that there are over 100 sites in the Central Pennines with such an assemblage.

In regard to the South–Central Pennine sites, Rushy Brow can be most closely associated with Buckley's site at Warcock Hill South (SE 030 096), near Huddersfield, West Yorkshire, which Mellars had isolated (Radley & Mellars 1964) as anomalous with regard to other important Early Mesolithic sites in the locality; the assemblage is dominated by flint, not the white mottled flint which predominates on the other sites (up to 90%), but brown, mottled yellow and black flint. These varieties appear in high proportions at Warcock Hill South, whilst white mottled flint represents only 10% of the assemblage. This feature appears to give Warcock Hill South a closer affinity with Star Carr (Clark 1954) than those sites dominated by the white flint, which Mellars would link with Deepcar (Radley & Mellars 1964). This phenomenon compares well with the flint component of the Rushy Brow assemblage, which is similarly mixed, although it does contain some white mottled flint. However, as has already been suggested, Rushy Brow must be considered as unique in the dominance, within the assemblage, of locally available, poor quality, grey–brown chert. Indeed over 50% of the microlithic component is chert. Typologically the microlithic component compares very closely with that of Star Carr and a number of direct parallels can be drawn (Clark 1954, fig. 35). Added to these, the presence at Rushy Brow of four fragments of thin shale beads, which are very closely paralleled at Star Carr (*ibid.* pl. xx, a), may confirm a typological link, that can be extended to suggest a similar date for the two sites.

There was no opportunity from Rushy Brow to obtain radiocarbon dates and the thin, disturbed nature of the peat covering ruled out any attempt at palynological estimates, and in any case it is unlikely that general peat formation started on the moor before the Late Bronze Age. However, Warcock Hill South provides a radiocarbon determination of, 9210±340 BP, 9400–7400 cal. BC (Q–1185) and Star Carr of 9557±210 BP, 9600–8000 cal. BC (Q–14) and, 9488±350 BP, 10,100–7700 cal. BC (C353), thus suggesting a likely 8th–9th millennium cal. BC date for Rushy Brow. This can be reinforced by radiocarbon determinations from other, less closely associated, South–Central Pennine Early Mesolithic sites with dates falling in the 8th millennium cal. BC (Lominot III:9565±470 BP, 10,400–7600 cal. BC (Q1187); Waystone Edge: 9396±210 BP, 9050–8000 cal. BC (Q1300).

Interpretation

Simmons *et al.* (1981) define the Mesolithic as comprising the entire period between the onset of the Postglacial climatic amelioration and the elm decline, and divide it into two epochs as follows:

1. 8000–5500 BC: a period of rapid and substantial climatic change with open tundra replaced by more closed forest conditions.
2. 5500–3000 BC: warm oceanic climate with stable mixed oak forest.

By assigning an 8th millennium BC date to the occupation at Rushy Brow it can be placed within the earlier of these two epochs. It has been suggested that the last of the remnant glacial ice had gone from the Central Pennines by 8300 BC: (Barnes 1982) and by *c.* 8000 BC the open tundra environment was beginning

to be superseded by incipient forest growth, with the replacement of the dwarf birch (*Betula nana*) by the tree birch (*Betula pubescens*), but still at this time with large areas of open park-tundra grasslands (Pre-Boreal/Zone IV). Tree birch cover probably did not exceed 4 m in height and was not dense, maintaining a rich herb layer. As general tree stature increased the dwarf shrubs and herbs were eliminated, but it has been suggested that they persisted longest at the highest altitudes, this survival presumably governed by the lower temperatures. Thus, importantly, it has been established that open tundra or near tundra conditions lasted considerably longer in the Pennine uplands than elsewhere.

Barnes (1982) has suggested that, at that time, micro-climatic factors in the Central Pennines limited the rise of the tree line to *c.* 305 m (1000 ft) OD and it can be disputed whether, in the earlier part of the Mesolithic, the tree line actually represented a significant physical boundary or was little more than a graded thickening of the low birch, hazel, and pine scrub cover. Rushy Brow lies at about 305 m (1000 ft) OD, as do other, probably Mesolithic, scatters on Anglezarke Moor, at, or near, the forest/open grassland ecotone, in a situation which thereby maximises the available food resource, since browse is thickest at the forest edge and herb growth lushest. Rushy Brow and the sites on Anglezarke Moor around Stronstrey Bank (SD 619 178) are likewise associated with streams, again a factor in maximising the resource by attracting large animals to drink, and also, it must not be forgotten, providing human groups with a water source for their own use.

Concurrent with, and consequent on, the change from open tundra to more closed forest conditions is the change in macro-fauna from herd ungulates such as reindeer (*Rangifer* sp.) to forest-dwelling species (red deer (*Cervus elaphus*), roe deer (*Capreolus capreolus*), aurochs (*Bos primigenius*), pig (*Sus scrofa*)), which are markedly less gregarious and thus present considerably more difficulties to the hunt. Mellars (1974) notes the substantial diminution of the overall biomass resultant on this change and it has been suggested that this shortage may have placed considerable stress on Hunter-gatherer groups. However, it can be suggested that the increased diversity of species encouraged by an ameliorating climate and the lush growth of herbs must have, to a large degree, compensated for the reduced availability of large meat animals.

From Rushy Brow, then, one could envisage a view of fairly open upland grassland, perhaps with a developing cover of low birch scrub, growing denser below the site and with perhaps, fairly thick forest on the lowland plain. The site location maximises the ecotonal situation, lying above the narrow clough, which may have served, perhaps, to concentrate the macro-fauna as it was attracted to a source of water or to a possible route to the upland plateau.

Most have accepted, within the Early Mesolithic environment, the adoption of a seasonal upland/lowland hunting strategy, following or predicting the seasonal migrations of animals as they moved to exploit summer upland grazing and, at the same time, avoid lowland insect pests (a consideration for Man also). In some lowland areas local to Anglezarke raised bog formation had begun by the early Postglacial (Zone IV), (Chat Moss (Birks 1965), Poulton-le-Fylde (Hallam *et al.* 1973), Red Moss (*c.* 8000 BC (Hibbert *et al.* 1971)) and presumably, as now, such lowland wetlands encouraged such debilitating pest insects as mosquitoes, which today, are present in vast numbers during the summer months in tundra areas.

In accord with this seasonal movement one would expect complementary winter lowland sites. Only one possible lowland site, Radcliffe, is known from pre-1974 Lancashire (Spencer 1951) but the *c.* 80 km territorial range postulated for some South–Central Pennines–Lincolnshire Edge sites (Jacobi 1978) would mean that more westerly lowland sites could now be inundated by the Irish Sea, whilst the same territorial range would not rule out the eastwards connection suggested by the typological links with Star Carr. It has thus become conventional to interpret small scale upland earlier Mesolithic sites, such as that excavated at Rushy Brow, as small summer hunting camps, occupied by hunter-gatherer groups as they followed the seasonal migration of their preferred quarry — most often presumed to be red deer. More recently it has become clear that the initial definition of such a subsistence strategy was at best over-simplified, not least in the assumption that red deer followed a precisely predictable seasonal round. This view would, however, remain adequate to explain the larger South–Central Pennine Mesolithic sites. There, numerous hearths, indicating presumably some repeated domestic or quasi-industrial activity (such as heat-treating flint or melting resin for setting arrowheads), possible structures, and large amounts

of lithic refuse, much of which had clearly been imported from some considerable distance (white mottled flint from the eastern drift) are most easily interpreted as large or repeatedly reoccupied seasonal camps, used by groups whose territory encompassed the South–Central Pennines as well as the present-day East Coast.

Rushy Brow, however, cannot be placed in the same category as these sites and can be distinguished from them on account of its extremely small size, the impermanent (even within hunter-gatherer terms) nature of its structures, the lack of indication of multiple reoccupation, and the obvious reliance on local inferior raw material for tool production. These factors may indicate that the site represents the remnant of a much more transient phenomenon than a living site, and that the archaeological remains are indications of a use of perhaps no more than a few hours' duration. Probably the site of a temporary hunting camp, the lack of multiple reoccupation may be sufficient to indicate that the clough was not a regularly used upland/lowland route for migrating animals and may indicate the opportunist exploitation of a single kill-opportunity or a hunter maximising his chances of a kill by sitting at a good observation position whilst obliged to stop for some other purpose.

The small size of the two structures suggests strongly that they did not serve as more than very temporary shelters, and the lack of either a defined hearth, or even of discernible concentrations of burnt lithic material militates against any suggestion of an extended occupation.

An obvious suggestion of function for the structures must be their use as windbreaks, the arc of stake-holes perhaps supporting something similar to a modern beach windbreak, whilst the semicircular stone setting may have served to weight the base of a flimsy superstructure, perhaps of braced withies covered by an animal hide. That some superstructure existed can be strongly suggested by the distribution of the lithic waste, which is distinctly bounded and concentrated to the west by the semicircular setting and fans out on the presumably open side, facing the clough (Deepcar; Radley & Mellars 1964). This can be taken to indicate that the knapping had been carried out by an individual (the size of the structure precluding more than one occupant), sitting within the confines of the shelter, probably facing out from it, as if occupying himself during a long and tedious wait at a hunting stand by repairing and refurbishing his hunting equipment. It could even be suggested that the structure served a dual purpose and was in fact intended to function as a hide, partially concealing the hunter in what may well have been an exposed position on the hillside.

The nature of the lithic assemblage, with a) a number of microliths but very few tools of a more domestic nature, b) microburins, indicating the on-site production of microliths, and c) the presence of at least two broken microliths with damage commensurate with their use as hunting arrowheads (cf. Barton & Bergman 1982), makes it quite probable that the site was associated with a hunting kill. The presence of both parts of a hunting-damaged microlith might be interpreted as an indication that either a kill was made at the site or that a fresh kill was, at least, subjected to preliminary butchering (not necessarily more than gutting and the removal of other unwanted parts of the carcass) on the site, before transporting the meat elsewhere, presumably to a larger, or more permanent camp.

ANGLEZARKE MOOR: GENERAL DISCUSSION

The nature of the Anglezarke–Rivington uplands has presented a number of difficulties to the survey. Deep peat alternates, over very short distances, with patchy erosion revealing the underlying mineral soils; erosion gullies give way to extensive fans of redeposited peat, tens of centimetres thick, and finally the blocky nature of the underlying grits on occasion renders impossible the confident discrimination between natural and man-made features. Despite these problems both the field survey and the study of known prehistoric material from the upland complex have established, without question, that there is a substantial amount of prehistoric evidence still surviving on the moor. The discovery, in the course of the survey, of a hitherto unrecorded standing chambered tomb, must serve to emphasise the scale of this survival.

Synthesis of the various types of evidence has established a distinct pattern to the Mesolithic material from the moor, as well as increasing the amount of data available. A peripheral distribution, with sites located at around 305 m (1000 ft) OD, associated with watercourses rising on the upland plateau and running off the moorland, was perhaps predictable, but the excavation of earlier Mesolithic material has enabled, at least for this earlier period,

comparisons to be drawn with other Pennine sites, and with sites further east, demonstrating a close cultural/typological link with Star Carr. Work on the north-western lowlands (Howard-Davis *et al.* 1988; Middleton 1990) may well serve to establish such links westwards as well. The inception of peat formation in localised areas of the Central Pennine Uplands by as early as *c.* 5500 BC can, perhaps form a loose *terminus ante quem* for this activity, although much of the Anglezarke–Rivington Uplands can be shown to have remained forest-covered until around *c.* 3000–2500 BC when it is thought that peat cover reached an extent more-or-less equivalent to today (Tallis & McGuire 1972).

The new chambered tomb, as well as new, if isolated, finds of Neolithic artefacts, serves to reinforce a human presence at this time, although the authenticity of the Round Loaf tumulus is in doubt. Likewise the Bronze Age finds, clearance episodes in the pollen profiles available from known sites and from the cairn excavated by Leech (see above, Barnes) and the cairn itself, serve to indicate a small scale, sporadic but determined exploitation of the uplands at this period. Evidence suggests that the contemporary environment of the cairn (around 1250 cal. BC) may well have been growing progressively wetter, with the extensive regrowth of scrub hazel on lower slopes, which had developed after clearance in the earlier Bronze Age, again being cleared, perhaps suggesting the use of marginal or derelict land for the monument. It would not be unreasonable to suppose the clearance and use of the uplands as grazing by pastoralist groups, as is currently suggested for the Cumbrian uplands (Leech 1983) and indeed, reappraisal of the flint artefacts collected from the Anglezarke–Rivington area leads to a similar, if tentative, conclusion.

The discovery of walls lying within the peat may point to the first physical evidence for Iron Age, Romano-British, or later activity on the moors, but this must, without further study, remain unconfirmed. Palynological evidence from the cairn and elsewhere does indicate clearance activity at these times. Evidence from the cairn suggests both pastoral and arable farming around AD 100–200, so that the appearance of field enclosures would not seem unreasonable, although the latest part of the peat profile implies that there might have been a decline in activity towards the end of that period. The initial survey recorded evidence for all periods, and it has become obvious, although this is not the place for such discussion, that interesting patterns of exploitation may be discernible for later periods.

As stated previously, it is apparent that the Anglezarke–Rivington uplands are suffering drastic and rapid erosion, exacerbated by an extreme climate, reafforestation and, due to its proximity to the southern Lancashire industrial conurbation, a very high recreational usage. The author has witnessed the use of a possible small stone structure, lying within the peat, as a marker on a course laid out for competitive orienteering and resulting in some damage. This accelerating loss of peat must have drastic consequences, especially in the case of infra-peat structures, when the removal of support from above and below the monument can have only one result — total obliteration of the evidence. It must also be stressed that such highly active conditions can only have the most disastrous effects on the newly exposed remains of earlier prehistoric activity and it is the view of the author that the lighter components of any such lithic scatter would be substantially disturbed, if not completely dispersed, within a matter of months. Likewise the loss of peat lying in close relationship to known monuments is resulting in the destruction of palynological evidence for the post-prehistoric period at least, as demonstrated by the truncation of the ANG 83/01 EXT profile, where evidence later than the Late Iron Age/Romano-British period had been removed by fire.

The nature of the erosion in this upland environment has emphasised the impossibility of gaining, during the course of any one period of survey, a total overview of the archaeological remains in such areas. Thus in order to facilitate the reconstruction of a detailed record of such complex, multi-phase upland landscapes, one must strongly advocate the establishment of a programme of intermittent resurvey. This approach must be especially suited to an area such as the Anglezarke–Rivington Uplands with its restricted size and obvious, easily definable boundaries.

Acknowledgements. Field survey: thanks go to the weather-hardened field assistants from the 1985 season, Ken Robinson, David Scott, David Lakin, and Jane Hewitt; and also to R. Middleton, C. Heron, and G. Rippon for the results of the 1983 season. The cairn excavation: survey and excavation of the cairn were undertaken in 1983, the former by P. Gibbons and V. Turner and the latter directed by R.H. Leech, assisted by R. Middleton. Rushy Brow excavation: many people assisted in the excavation at Rushy Brow, giving freely of their time and energy. I take this opportunity

o publicly thank them all, especially for their fortitude and ;ood humour in the face of gale-force winds, combined at he end of the excavation with freezing rain, in a location vhere shelter existed solely in the imagination. Julian Cotton, however, I mention by name as full-time co-:xcavator, whose resource, experience, skill, opinions, and :ompany I value most highly. I must also express my ;ratitude to Dr Roger Jacobi for the generous gift of his ime, experience, and knowledge during the study of the ithic material. Many others contributed to, and advised ıpon, the entire Anglezarke report and my thanks to them ıll. I must, however, give especial thanks to John Williams or his diligent and persistent editorial guidance throughout he preparation of this paper.

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This paper is published with the aid of a grant from English Heritage