

# THE PREHISTORY OF MERSEYSIDE

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## INTRODUCTION

In 1978, before the creation of professional archaeological units in the county, knowledge of the prehistory of Merseyside rested on a few well known sites, largely recorded in the 19th century, and a number of stray finds resulting from chance discoveries over the last hundred years or so. Ten years on improvement in our understanding of the period has resulted from a coherent plan of research, formulated in response to specific questions about the nature and location of settlement in the area.

In 1978 much of the pre-existing archaeological evidence for the whole of the prehistoric period suffered from being fragmentary and difficult to understand. Although important advances have been made, the data base is still weak and compares badly with many areas to the south and east. How far this may reflect the real nature of settlement in this area and how far it is a symptom of a history of limited research is explored later.

In relative terms, however, this research has resulted in an enlargement of the overall data base, improving knowledge about general settlement distributions and chronological developments. An associated programme of sampling for palaeoenvironmental evidence from organic deposits, particularly peat bogs (Innes and Tomlinson this vol.), has also set some of this artefactual evidence in an environmental context and suggested further areas of field research in geographic areas that have as yet little or no archaeological evidence. Specific sites have also been selectively studied in greater detail by surface investigation and excavation to improve understanding about cultural, functional, chronological and technological aspects of the observed settlement pattern.

The Merseyside Sites and Monuments Record has provided a focus for the continued recording of the steady number of chance discoveries reported from the area (Cowell in prep. a). The overall survey programme has largely been the responsibility of the Liverpool Museum through the Archaeological Survey department and has included programmes of landscape and palaeoenvironmental survey.

The main element of the landscape survey has been associated with a long term programme of fieldwalking, supplemented recently by a programme of aerial photographic survey. The fieldwalking, which will not be completed for some time yet, has produced much of the new evidence in the form of surface lithic material. A detailed treatment of this work is planned on completion of the fieldwork, but as the evidence

from it is one of the most significant advances in our understanding, the interim results of that work have been included in this paper. These interim statements are not supported by quantified data which will be included in a future report (Cowell in prep. b).

An area slightly larger than the county of Merseyside has formed the basis for study (see Fig. 1), using the more obvious natural features as approximate boundaries, although it should be recognised that this is more for convenience than as a statement of likely prehistoric territories or socio-economic units, which may have to be looked for on a larger, regional scale. In fact with a few exceptions, the regional evidence is little better understood, and is here briefly set out to place the local material in context. Discussion of it is however largely left to a more complete synthesis elsewhere (Cowell in prep. d).

In many ways the traditional 'Three Age' classification places restrictions on the archaeological evidence that does not totally fit with the technological and economic changes that are recognisable throughout the prehistoric period. This means that there may be continuity or overlap across the culturally defined boundaries of the old classification system. In addition, the lack of a recognisable chronological and technological framework for the northwest, from excavated and independently dated sites, means that the rate of cultural, economic and technological developments, which may occasionally have acted independently of each other, cannot necessarily be assumed to be synchronous with other regions. In the absence of such a framework, parallels have had to be drawn with sites outside the region. It is recognised that this framework may not necessarily equate with this region and much future work is to be directed to testing these assumptions.

For the purposes of this paper the traditional system has been retained to provide a recognisable framework for those not overly familiar with the material. It must be stressed, however, that the period heading terms are used solely in a chronological sense, based on the broad national pattern. Where economic, technological and occasionally chronological definitions of the periods differ from this broad pattern the implications are treated in more detail in the text.

## THE PALAEOLITHIC

The period of cultural development that took place during the major episodes of glaciation have left no trace in the county. The earliest evidence in the region,

of about 200,000 years ago is focused on a cave site in north Wales (Green 1986). The bulk of the evidence for this early period, however, can only really be expected from around the southern margins of the maximum glaciation, that is, southern and southeastern England (Morrison 1980). The existence of open sites prior to the last full glaciation, before c. 16,000 BC, therefore appears less likely in this area, as the action of the ice in laying down the Pleistocene deposits that cover much of Merseyside and the northwest lowlands may have been too severe to allow for their survival.

Evidence of activity during the final stages of the last ice age, in cultural terms the later upper palaeolithic, is a little more widespread nationally, but confined to north Lancashire and north Wales in this region. Here cave sites are known in the southern Lake District (Wood *et al.* 1969), as well as lowland evidence from Poulton-le-Fylde, where the bones of an elk were found with barbed spear points in a former kettlehole on what is now the coastal plain (Hallam *et al.* 1973). This is associated with radiocarbon dates centering on c. 10,000 BC (Jacobi *et al.* 1986).

The evidence from Poulton-le-Fylde provides important evidence of man's hunting activity at this time on the western side of the Pennines, which might therefore be expected to be repeated elsewhere in the region. The scope for finding this evidence is much restricted, however, as a good deal of the former territory then available for hunting and settlement is now lost under the Irish Sea (see below), although other open lowland sites may now lie under the post-glacial sands and peats that are prevalent in the north of the county (Innes and Tomlinson this vol.).

## THE MESOLITHIC

### Background

The context of the hunting tradition, glimpsed at Poulton and continuing across the British Isles for the next six millennia of the Mesolithic period, can perhaps be seen more clearly in ethnographic studies, which provide models against which the more frequent archaeological evidence of this succeeding period can be tested.

These suggest that hunter gatherer groups exist within an annual cycle of mobile exploitation of both plant and wild animal resources (see eg Mellars 1976b), with a range of specialist sites distributed across territories of varying sizes (eg Simmons 1975). Clark (1972), in his reassessment of the excavation of his Mesolithic site at Starr Carr, Yorkshire, noted the complementary nature of the location and function of that lowland, home base site, used in the winter months and the

small, upland, probably summer, camps in the Pennines and postulated seasonal movement from lowland to upland based on the hunting of red deer. The interpretation of the seasonal and functional aspects of Starr Carr has since been modified (most recently, Legge and Rowley-Conwy 1988) but the general model is still in essence of relevance.

This model was applied to the archaeological record on the basis of a study of a number of flint assemblages from excavated sites (Mellars 1976a). By looking at the proportions of the various kinds of flint tools and the area across which they were spread, he identified three types of functionally different sites, which could be explained by seasonal factors. His type I sites are small, well defined, microlith dominated and generally above 305m and are interpreted as being summer hunting camps for small groups. Type II sites are larger, of uniform artefact density, with balanced flint assemblages of microliths and scrapers and are found in river valleys, coastal areas and in some upland areas and are suggested as being the winter camps of larger groups. The relatively rare type III sites, represented by extensive scatters of material containing localised concentrations and dominated by scraper assemblages, are interpreted as autumn camps, specialising in skinworking. Details of this model have been criticised (Myers 1987), but it still forms the basis for much of the analysis of Mesolithic settlement patterns.

In general, in the northern uplands, the vegetation cover was developing during the earlier Flandrian period (pollen zones iv and v), largely contemporary with the early Mesolithic, from an open birch-pine forest through various stages to the establishment and dominance of a mixed deciduous woodland phase at the beginning of Flandrian II, c. 5500 BC (Simmons 1975, 59). Local pollen diagrams confirm the quite open pine and birch scrubland landscape noted for the uplands in Flandrian I (Innes and Tomlinson this vol.).

The divisions of the Flandrian are also mirrored in those of the Mesolithic artefactual record, which is divided typologically into an early and later phase. From about 7500 BC (from the late 9th millennium BC in southern England) to about 6500 BC, early Mesolithic assemblages are based on a range of barbed bone points, wood and skinworking flint tools, axes and microliths (projectile points) of a distinctive type, particularly the larger obliquely blunted points, with larger 'isosceles' triangles and rods being of lesser importance (Mellars 1974). After c. 6800 BC or c. 6500 BC in north Wales (Jacobi 1980, 146) the obliquely blunted points become rarer and the microliths take on different, particularly geometric, characteristics with narrow 'rods' also common. A further change from about 5000 BC is also noticeable with a trend towards micro triangles and short convex backed points (Jacobi 1987, 164), with a lack of bone points and flint axes. There are also functional differences in settlements with the majority of the type I camps mainly belonging to this later period (Myers 1987).

## THE EARLY MESOLITHIC - c. 8500-6500 BC

### Local evidence

The palynological evidence in the county provides no indication of man's impact on the landscape for this period. Of all the sites sampled only the peat from Knowsley Park shows evidence of having formed before the Atlantic period and the pollen diagram here shows only the expected vegetational succession for the early Flandrian of pine, birch and hazel woodland which is paralleled in other upland and lowland areas at this time.

These environmental conditions were contemporary with a much lower sea level, suggested as being approximately -20m OD in the late 8th millennium BC (Tooley 1974) producing a hunting and foraging territory that would have stretched about 15-20km further west than the present coastline of Merseyside (Tooley 1985, 94). Sea level gradually rose during the 7th millennium until it lay at c. -9m OD around 6500 BC (Tooley 1974). Seismic survey of the seabed north northwest of Dove Point, Meols, Wirral, indicates that the early post-glacial boulder clay surface lies at -12m OD at a distance of c. 3.5km (Kenna 1978, 28).

In Merseyside little archaeological evidence existed for this period until quite recently. At New Brighton, a few microliths are illustrated as coming from a 'Neolithic chipping floor' (Roeder 1900). There is no independent dating for this material but the illustrations show a couple of obliquely blunted points, the dominant form of the earliest assemblages. An early date is not certain as these types can also appear as isolated types in late assemblages, or as larger components in 'mixed' late assemblages, which although mainly found in southern and eastern England (Mellars 1974, 90) are known from one excavated site further north, at Prestatyn, north Wales (Clark 1938).

The fieldwalking programme in the county has advanced this meagre evidence quite dramatically. There is evidence from two and possibly four flint scatters that sites of this date are present in the county. Two certain sites, both on Wirral, have been subjected to more detailed research.

At Greasby, where there are at least seven individual foci, one area has been subjected to partial excavation (Cowell in prep. c). This produced a number of pits, some of which are unambiguous man-made features, a number being almost 0.5m deep, as well as small post and stake holes and a possible hearth, spread over an area about 11 x 9m. Nearly all the pits contained flintwork while some also produced small quantities of carbonised hazelnut shells (*Corylus avellana*). The pit fills also suggest that the site as a whole was reused several times during this period. A not yet completely excavated rectangular area of concentrated stone pebbles resembling paving in places, spread over an

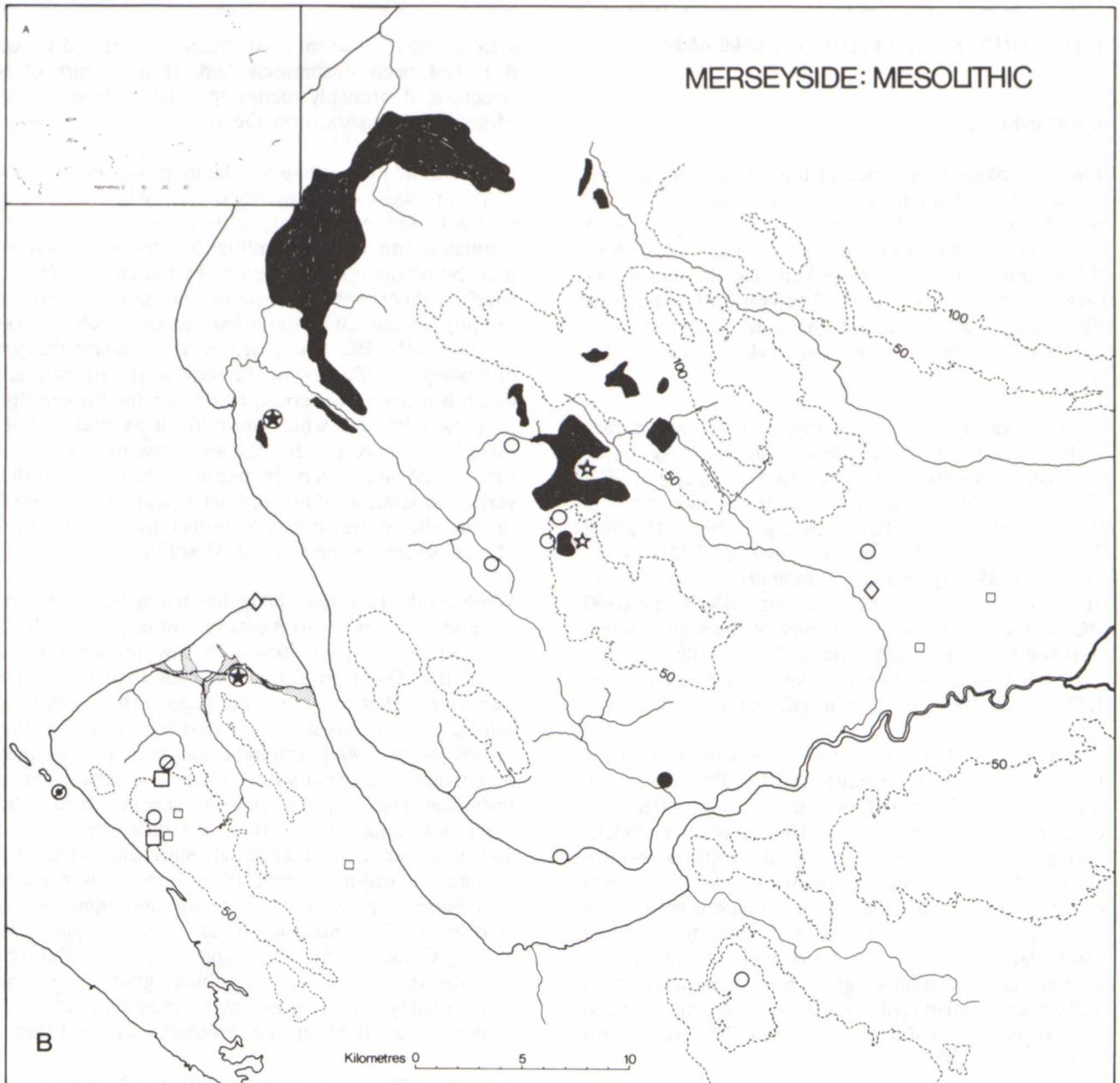
area of about 30 sq m, is still being investigated to see if it had been deliberately laid. If it is part of a structure, it probably relates to a later phase of the Mesolithic occupation on the site.

The excavated material is still being processed, but has so far produced about twenty obliquely blunted points in black and grey chert, with no sign yet of any geometric, late Mesolithic influence. This would suggest that the occupation represented by the chert artefacts, which is almost the only type of raw material found in the pits, should date from a few centuries before 7000 BC to c. 6500 BC. There are no good indications yet of typological affinities for the second type of material, which is a bluey grey chert, except for the broken tips of a few microliths which are difficult to classify. This material is, however, the dominant raw material from the topsoil and layers immediately below, and this vertical separation of two distinct types of raw material on the site argues for two distinct main occupation phases before the end of the Mesolithic.

Work on the flint assemblage has hardly begun, but of the four thousand or so pieces of flint larger than 2mm seen so far, only an extremely low proportion are microliths. There are far more cores than this and a number of other tool types that suggest the assemblage will fall into the balanced type that is so typical of this period (Myers 1987), and indicating perhaps a balance of activities associated with hunting and processing of resources. These types of sites are generally held to be longer stay camps usually occupied during the autumn and or winter months, although Starr Carr which has formed the major example of this model is perhaps now better explained as a late spring/summer camp (Jacobi 1978; Simmons *et al.* 1981; Legge and Rowley-Conwy 1988). Unfortunately it is doubtful that Greasby will be able to add anything significant relating to seasonality as there is no environmental evidence yet from the site other than the carbonised hazelnut shells.

A second site, at Thurstaston, Wirral, which probably includes at least three different foci, has not been subjected to the same amount of research, but detailed fieldwalking has produced a very similar assemblage to that at Greasby, with obliquely blunted points in grey and black chert, cores, scrapers, retouched flakes and blades in the same range of raw material types. The main difference is that this site covers a larger area and has a greater density of material on the surface (Cowell in prep. c).

The other two sites are less securely of this date. About a mile from the Greasby sites, at Irby, Wirral, a small concentration of black and grey chert waste material, although not typologically distinct, has been included in this period on the strength of the raw material type. The fourth at Simonswood, Knowsley, is even more nebulous than this latter site, as it is represented only by a few blade flakes of grey flint. The most distinctive piece is a large blade whose only parallel so far in the area comes from the Greasby chert assemblage. Much



KEY:

- |   |                               |   |  |
|---|-------------------------------|---|--|
| □ | Early Mesolithic — excavated. | ☆ | Palynological site with pre-elm decline clearing(s). |
| ● | Later Mesolithic — excavated. | ⊗ | As above with cereals.                               |
| ○ | Blade Flint Scatters.         | ▨ | Buried river channel.                                |
| ⊙ | As above, with microlith(s).  | ■ | Peat   |
| ◇ | Microlith(s)— early type.     |   |  |
| □ | Flint scatter - undiagnostic  |   |  |

Figure 1: Map of Mesolithic sites, Merseyside and adjacent areas.

work remains to be done to provide a chronological framework for changes in raw material exploitation across the region. If this grey material is being brought into the area by man, then the early Mesolithic might seem the most likely period for this to have happened. In the absence of the necessary research it is possible that the grey flint at Simonswood is related to other types of grey flint found in the boulder clay elsewhere in the county, which do appear to be glacial pebbles.

### Regional Evidence

There are only two other lowland sites of this period known from northwest England. One of these, at Radcliffe, Greater Manchester, is represented only by a few flint flakes on the site of a probable Bronze Age structure (Spencer 1953). At Tatton, Cheshire however an early flint assemblage spread over an area slightly smaller than at Greasby, c. 9 x 6m, with a similar balanced tool assemblage accompanies a large hollow, which may however be natural (T. Cane pers. comm.).

There are also two possible intermediate sites from more elevated areas. One is represented by possible microliths, less than clearly illustrated, from a surface scatter at Alderley Edge, Cheshire (Varley and Jackson 1940, 20; Longley 1987, 39), the second and more likely site is represented by illustrated flints from Frodsham, which show six obliquely blunted points as well as truncated blades and a scraper (Varley 1964, 23, Table 5). This evidence compares badly with that for the uplands proper, where there are over a hundred sites of this period known on the Pennines (Jacobi 1978b).

In north Wales sites of this period are known at Rhuddlan and at Aberffraw in Anglesey. The Rhuddlan site has radiocarbon dates of c. 6500 BC, which although a little late compared with the Pennine sites, does have a typologically early Mesolithic assemblage formed largely from chert (Clark 1938; Jacobi 1980). Aberffraw also has a date of c. 6800 BC with a similar though less completely published flint assemblage (White 1978; Jacobi 1980). At neither of these sites however was there any coherent settlement evidence.

Palynological evidence is scarce for this period in the lowlands although episodes of manipulation of the woodland cover may be visible at Little Haweswater in the southern Lake District probably during the eighth millennium BC (J. Innes pers. comm.).

### Discussion

In regional terms there has long been an imbalance in the evidence for the early Mesolithic between the lowland areas east of the Pennines and those to the west, with the latter showing an almost complete absence of settlement. The research in Merseyside has now shown that this is unlikely to be a true reflection of the differences between the two areas. Within

Merseyside, however, our understanding of this period is confined to Wirral.

Many of the peat deposits in Merseyside appear not to have commenced growth until Flandrian II, with the onset of the Atlantic period (Innes and Tomlinson this vol.). This later commencement in peat growth over much of the county has therefore potentially masked any earlier sites and undoubtedly many former sites now lie under the Irish Sea as a consequence of sea level rises (see page 26). For the area east of the Mersey particularly, the lack of sites may thus be partly explained by these post-depositional environmental changes. Another explanation may be that within some of the sites found by fieldwalking in this area (see page 27) there lies an unrecognised early Mesolithic element.

There are early-type microliths at Ditton (see page 27), but these are too few to assign an early Mesolithic date to the occupation. This must await radiocarbon dating before being more certainly ascribed, although a phase of occupation later in the Mesolithic does seem the more likely. The single blade from Simonswood must also remain intriguing rather than informative for the moment.

To the west of the river, however, the evidence is better than anywhere else in northwestern England, although not, as yet, in a well digested form. A complete assessment of the date and function of the known sites must await more detailed analysis, and the implications within the regional context will be better treated in the excavation report. For this paper though a few general points arising out of the present superficial understanding of the sites may provide pointers of significance to the eventual conclusions for settlement of this period in the region.

The chronology for these sites has to rely for the moment on areas outside the region. The Welsh assemblages which appear typologically close, would suggest occupation at or earlier than the mid 7th millennium BC (Jacobi 1980, 146). If the Wirral sites are to be viewed as part of the Pennine cycle of mobile exploitation, then present evidence suggests they should be earlier than c. 6800 BC (Jacobi 1978b, 296).

Much work needs to be done to understand the significance of these sites in terms of function and social organisation. The large number of pits at the Greasby site indicates that it was not of a transitory nature in the early phase, and suggest a degree of settlement stability. The similarity of the Greasby flint assemblage to that of the surface assemblage at Thurstaston, implies that the latter was a similar type of site, although it may be that there is a higher proportion of implements at Thurstaston. Whether the Greasby sites represent single dwelling units or a larger settlement complex is unclear at present, and is complicated by the fact that the sites had a number of occupations.

Both lowland and upland sites in the central Pennines

and to the east are dominated by the balanced assemblage type for this period, with high proportions of scrapers for various processing activities. These assemblages tend to be associated with the larger and presumably more intensively settled camps, which probably reflect the more passive, 'intercept' hunting strategies possible during the early part of the period (Myers 1987).

The Wirral sites, although now within 5-7km (3-4 miles) from the north Wirral coast, would, if they prove to be early 7th millennium BC or before, probably have been inland sites at that time (Tooley 1974, 33), deriving most of their resources from dryland habitats. Dates towards the middle of the 7th millennium would suggest a coastline less than about 3km (c. 2 miles) to the northwest of the present coast, at least in the Hoylake area (Kenna 1978, 28), making Greasby about 8km (5 miles) from the shore at that time. If a mean of these two extremes were taken as a working date for the site, it would seem that west Wirral would probably have been highly accessible to the present north Welsh coast, without the tidal river Dee providing the same obstacle to travelling on foot. One attraction would have been the upland slopes which can be presumed to have carried large deer populations during the summer, as well as providing ready sources of raw materials.

The lithic assemblages at both Wirral sites are dominated by the occurrence of chert, which the fieldwalking so far suggests is extremely rare in the drift geology in Wirral. The nearest outcrop is at Gronant near Holywell, the presumed source for the late Mesolithic Rhuddlan site (see page 28) (Manley and Healey 1982). There is a strong possibility therefore that the north Welsh coast formed part of the seasonal territory of groups using Wirral.

Chert outcrops are known in the Pennines but do not appear to have been exploited systematically until later in the Mesolithic (Jacobi 1978b). Early sites in the Pennines used instead a white flint which accounted for about 80-99% of the raw materials at these sites, and is thought to have come from Lincolnshire (Jacobi 1978b, 307). A creamy white flint forms one element of the stratigraphically earliest pits at Greasby and a 'white flint' is an element of the raw material found at Tatton (T. Cane pers. comm.). Recent work on the Greasby assemblage does suggest the possibility that the white 'flint' is in fact a chert, which may also have outcropped in north Wales (C. Longworth, forthcoming). More detailed work therefore remains to be done on sourcing the various types of raw material from the sites for the important reason that patterns of movement might be identified that will aid interpretation of economic and social organisation. Sites such as Rhuddlan continued to use chert into the late Mesolithic (Manley and Healey 1982), although there is no firm evidence yet that the Wirral sites continued to do so (but see page 23).

## THE LATER MESOLITHIC - c. 6800-3450 BC

### Background

Gradual encroachment of the land by rising sea levels continued during the later 7th millennium BC, with a very rapid rise to c. -2.0m OD during the mid 6th millennium BC (Tooley 1974, 33). The onset of the Atlantic period, at c. 5000 BC, led to further sea encroachment, one phase of which reached 7km inland in west Lancashire (Innes and Tomlinson this vol.). By the beginning of the 4th millennium BC sea level was +2.0m OD in west Lancashire (Tooley 1974, 34). On Wirral, tidal flat conditions are recorded after c. 4500 BC, succeeded by saltmarsh and fen carr in peat along the present beach at Meols (Kenna 1986, 13). A pollen sample from Sniggery Wood, north of Crosby, Sefton, provides evidence that estuarine conditions prevailed in the vicinity, at a point in time 200mm above the onset of peat which is dated c. 3820 BC (Innes and Tomlinson in prep.).

The coastal changes accompanied changes in the vegetation of the area with the gradual expansion of mixed deciduous woodland during the 6th millennium bc at the expense of the earlier pine and hazel dominated woodland. During the Atlantic period, after c. 5000 BC, a generally quite dense oak, alder and elm woodland became dominant in response to the increase in temperature and rainfall (Innes and Tomlinson this vol.).

Outside the county the mixed deciduous woodland of the Atlantic period is suggested as being found up to altitudes of about 350m (Simmons 1975, 60). At many of the Pennine sites (Jacobi *et al.* 1976; see page 28) and sites in the North York Moors (Spratt and Simmons 1976) the appearance of charcoal, sometimes recurrently at the same site, associated with a fall in the pollen of woodland species and a rise in hazel and herbaceous pollen has been interpreted as man's response to this phenomena. Mellars (1976b) outlines the substantial benefits of firing the woodland, leading to increasing human mobility within the forested areas and an increase in the quantity and quality of the browse available for the woodland fauna, which would in turn improve the game populations to the benefit of the hunting communities.

### Local evidence

Locally the fluctuations in sea level and increased rainfall led to the formation of lakes, swamps and bogs during this period (Innes and Tomlinson this vol.). During the 6th millennium bc freshwater environments were succeeded by reedswamp and fen conditions on Wirral at Bidston Moss (c. 5430 BC) with similar environments at Dove Point, Meols (c. 5060 BC) and possibly on the eastern side of the Mersey at Flea Moss Wood, with a date of c. 5300 BC. A similar succession

during the 5th millennium BC is noted at Simonswood Moss, Knowsley (c. 4150 BC). A little to the south at Knowsley Park these reedswamp and fen conditions had by this date changed to acid raised bog with moss and scrub vegetation. The formation of these wetland environments continued into the 4th millennium, being recorded in present coastal locations on both sides of the river at Park Road, Meols (c. 3300 BC) and Sniggery Wood, Little Crosby, Sefton (c. 3820 BC) (Innes and Tomlinson in prep.).

The pollen evidence from the peat sampling in the county indicates that limited, temporary disturbances to the forest cover appear to be present within the dryland vegetation of Merseyside as part of a general pattern across the lowlands. Two separate areas in the county show a similar palynological trend in locations where surface scatters of flint can most probably be dated to the Mesolithic.

In the Shirdley Hill Sand/inland peat belt, two sites, at Simonswood and Knowsley, both in the hypothetical pollen catchment area of a number of known surface flint sites, have dated pollen profiles (Fig. 1). At the former site a disturbance episode is associated with a charcoal lens, dated c. 3500 BC. At the latter, two similar episodes, the earlier with evidence of burning, are located between c. 3800 BC and c. 3590 BC (Innes and Tomlinson in prep.).

Surrounding areas do not show this as well but do suggest the possibility of similar phenomena, though without fire, during the period represented by the typologically late Mesolithic. These sites do not, however, so far have approximately contemporary archaeological evidence in their vicinity. Sniggery Wood shows possible small scale activity during the estuarine phase of landscape development in the area (Innes 1982), after c. 3800 BC, while to the east similar occurrences may be represented at Holiday Moss prior to the commencement of the Atlantic period (Baxter and Taylor 1980).

The second area is represented to the west of the Mersey, by north Wirral, at Bidston Moss, situated at the foot of the east Wirral ridge and looking out on to the north Wirral coast, where Mesolithic evidence is strongest (see below). The moss began forming c. 5430 BC and reveals traces of four possible disturbances to the woodland cover in the area before c. 3890 BC, which are interpreted as being consistent with human agency (Innes and Tomlinson in prep.). Another episode in this area may be represented by fluctuations in the pollen record about this time at Squibb's Factory, Moreton (Kenna 1978).

The pattern of archaeological evidence for this period has come from both casual finds and from the survey programme. The casual finds are confined to Wirral and are best represented at the Little Eye, the smallest of the Hilbre islands (Fig. 1). Here a sea-eroding horizon has produced a quantity of small chips and

flakes, including a rod and a micro-triangle microlith (Cowell in prep. d). Microliths are also reported, but not independently verified, from the coastal forest at Dove Point, Meols, Wirral (Jackson 1936, 71) and from the Thurstaston ridge area (Wymer 1977). No microliths have been traced from the latter site but a truncated blade and a retouched blade from the hill top could be Mesolithic (Cowell in prep. d).

The environmental evidence outlined above for the county, however, suggests wider activity ought to be expected during the 6th to 4th millennia BC and the evidence from the field walking programme may back this up. A subjectively 'site' defined settlement distribution for those areas fieldwalked, in keeping with the comments previously made (see page 21), has produced about twenty three sites in total so far (Cowell in prep. b). In the figures some small concentrations, in close proximity, have been amalgamated for the sake of clarity.

One notable concentration of sites occurs on the light sandy soils in the north of Knowsley District, often adjacent to the peat. The blank area on the map to the west of these sites, which has a similar topography, has yet to be surveyed. The other main location for sites lies on the northern and western sides of the Wirral ridge, with a lesser emphasis on the Mersey and its tributaries (Fig. 1).

A common feature of most of these sites, particularly to the east of the Mersey, is the low total numbers of flints, which mainly comprise blades, blade-like fragments and smaller waste, in small discrete areas, albeit occasionally repeated over a larger area, eg Croxteth Park, Liverpool or Greasby, Wirral. There are no microliths in any of these assemblages, but the blade technology has been used to place them in the Mesolithic (although see page 28).

To the east of the river most of the flint in these assemblages includes a strong component, sometimes exclusively so, of various shades of brown or honey coloured flint, small pebbles of which are often encountered in the boulder clay derived soils of the area and along river valleys, similar locations to those from which the local prehistoric communities must have obtained their flint. Two sites on the Shirdley Hill Sand at Knowsley and Kirkby are dominated by a milky white flint, which may result from cortication. To the west, on Wirral, a number of very small sites, sometimes with a blade element, are also dominated by this brown/honey flint, but more common are variations on the bluey grey type of flint as found in the later levels at the Greasby early Mesolithic site (see page 23).

One of these surface sites, at Ditton in Knowsley, has been excavated and produced four microliths of late type from the topsoil, but not in direct association with the living area discovered. This was based around a natural hollow, with small pits and stake holes which produced small quantities of flint knapping debris over

an area of about 3 x 4m (Cowell in prep. b). The small flint assemblage was largely based on blades and smaller waste and included a large rod microlith from the main hollow, and a small oblique point from the topsoil approximately over the feature.

Given the smallness of the sample, and until the radiocarbon dates are received, it is difficult to be certain of a date for the activity area, although it does seem likely to be Mesolithic and the pollen from the pits implies an Atlantic type vegetation (J. Innes pers. comm.). Conversely it perhaps ought not to be ruled out for the moment, that by southern English analogy (Pitts and Jacobi 1979) the blade element may possibly represent an early Neolithic admixture. A small pit, several metres away from the main occupation area, produced three rims of as yet undiagnostic pottery that is almost certainly prehistoric and for which an associated radiocarbon date should be obtainable.

### Regional evidence

Most sites for this late period in the northwest are known from the central Pennines (Barnes 1982), where they tend to cluster between about 380-420m. The small nature of the sites, often only about 15 sq m in area, with a heavy preponderance of microlithic points, are interpreted as hunting camps, after Mellars (1976a). The location of the upland flint sites, above 350m, implies that the alteration to the woodland was taking place largely at the upper margins of the tree cover where it could most easily be affected.

The phenomenon of small woodland clearings, with no evidence for arable activity as seen in Merseyside, is also present across much of the lowlands of the northwest. Some, with radiocarbon dates, are adjacent to areas with cultural evidence and therefore appear to provide some human context for the observed environmental phenomena. These are concentrated in the west Cumbrian coastal plain, most notably at Eskmeals, where a number of late Mesolithic sites have been excavated (Bonsall 1981). At Williamson's Moss, timber platforms dated to c. 3500-3700 BC, and attributed by the excavator to the Mesolithic (Bonsall *et al.* 1986, 16), represent only one settlement within a densely settled area as witnessed by surface scatters of flint along the coastal strip (Cherry 1969; Cherry and Cherry 1973; 1984). At Monk Moors I a number of hearths with irregular arrangements of stake holes covering an area c. 7 x 3m are associated with dates between c. 5000-4500 BC (Bonsall 1981, 461). At all three sites microliths average about 80% of total worked tools. At Eskmeals small clearings noted in the pollen profiles are tentatively attributed to a date of c. 3900 BC (Bonsall *et al.* 1986, 20-23).

Most lowland areas of Lancashire and southern Cumbria also reveal similar palynological traits (Howard-Davis *et al.* 1988), although they are less well dated and have little direct archaeological association,

but they do suggest the possibility that activity of this period may be more widespread in the western lowlands than previously thought. The archaeology of much of the lowland region is in fact fairly restricted outside west Cumbria and known mainly from surface scatters or from salvage excavations during developments. Enough is known to suggest settlement was present at a variety of topographical locations across the area, which may therefore strengthen anthropogenic interpretations for much of the palynological evidence.

Those locations other than the already mentioned coasts, are represented by the major river valleys such as the Lune (Penney 1978a), Ribble (A. Olivier pers. comm.; J. Hallam, pers. comm.) and from the Cheshire side of the Mersey (Longley 1987, 39). One site is known from the inland peat margins, in west Lancashire at Mawdsley (Wymer 1977), with another inland site at Ashton, Cheshire (Leach 1942). In north Wales, there is slightly better evidence, again from Rhuddlan (Messham *et al.* 1979/80; Manley and Healey 1982), Prestatyn (Clark 1938) and at Brenig, from where comes the only radiocarbon date for a micro triangle assemblage in this area centred on c. 5700 BC (Lynch 1975, 30).

### Discussion

As with the earlier period, the chronology for this phase relies on analogy with adjacent areas. The Pennine sites form the main guide to this area and suggest that the introduction of geometric industries was about 6800 BC (Mellars 1974). In Wales the earliest date for a late industry is that of Brenig of c. 5700 BC (Lynch 1975, 30). In the northwest lowlands only Eskmeals provides any chronological indicator for settlement at this time, with activity concentrating in the early part of the 4th millennium BC. Final dates for Mesolithic material in the region come from the Pennines, with Dunford Bridge providing the latest of c. 3430 BC (Switsur and Jacobi 1975), although Jacobi (1987) now casts doubt about the accuracy of these late dates, and suggests that the latest reliable date is c. 3800 BC.

The conditions associated with the wetland areas, in the form of lakes, fens, swamps and scrubland, and with the major river valleys in the area, would, from the mid 6th millennium BC, have provided attractive locations within the generally forested landscape for a hunting and collecting society, which seems to be borne out by the local evidence.

Most sites attributed to the late Mesolithic in the county cannot, however, be unequivocally dated to this period, on account of the lack of diagnostic tools in most of the assemblages. The blade characteristics of these assemblages are usually taken as representing Mesolithic sites (Pitts and Jacobi 1979). The excavated site at Ditton suggests this may be correct, although even here radiocarbon dates are awaited to confirm the link between the occupation area and the diagnostic

Mesolithic flint types. Blade assemblages are also attributable to the early Neolithic in southern and eastern England (Pitts and Jacobi 1979). Until more sites of this type are excavated to provide dated typological references this must remain a slight possibility for some of the sites identified in the county.

The late, unstratified microliths from Ditton suggest that the local boulder clay flint was being used as a source of raw material during this period and this has determined the attribution of the other sites to the later period until evidence to the contrary is provided. The reliance on local boulder clay flint, which is also apparent at three sites on Wirral, would be consistent with the pattern of raw material procurement becoming more localised in the late period as seen in the better documented areas east of the Pennines (Jacobi 1978, 307). This disruption could have had some link to the environmental changes associated with increased tree cover and rising sea levels.

There are, however, a number of difficulties with this argument, at the moment, in this area. There is no indication of the type of material being used east of the river in the early Mesolithic, nor has the bluey grey flint source on Wirral been shown to be local, nor even of the late Mesolithic. Thus the amount of further research needed is all too evident.

Interpreting the size and social organisation of the Mesolithic communities from surface scatters poses problems, as general scatters of flint sometimes contain smaller concentrations. Sites at Croxteth Park or Greasby illustrate some of these problems in that they may represent a succession of occupations in the same area over a long period of time or they may be contemporary living units for larger groups spread over a large area. These considerations are separate from the uncertainty about the relationship between surface material and surviving beneath ground settlement evidence, all questions which are the subject of current research. Allowing for these reservations, an attempt can be made to interpret the surface material, based on general assumptions which are applied quite widely, in the light of present understanding of the Mesolithic.

The nature and distribution of the material at these presumed late sites implies less intensively occupied sites than the earlier ones. The amount and nature of the material on them suggests they were not being used for large groups of people and that reasonably restricted activities were taking place there. This might suggest a different kind of response from the early period, requiring different kinds of hunting strategies within a changed environment. The great increase in their number and geographical distribution may also relate to this, as siting of camps perhaps became more dependant on a greater variety of seasonal resources including animal movements, which involved a wider range of environments.

These sites may include any number of functionally

distinct purposes (Binford 1983, 117; Simmons 1975, 58), including small bivouacs or extraction camps associated with the kill, or butchering of prey, any of which may be the case with the Ditton site, while others, eg Croxteth Park or Greasby phase II, may represent temporary bases for larger groupings from where hunting expeditions departed. A feature of all of them is the lack of microliths, which may be due to unavoidable biases in the collecting procedure as the Ditton evidence might suggest (or possibly that some are in fact Neolithic).

Several of the Cheshire surface sites do include a microlithic element (Longley 1987) and, as they tend on the whole to be what in local terms could be classed as relatively upland sites, they might have a functional difference from the camps north of the Mersey. The close juxtaposition of rivers, mosslands and coasts north of the river would, however, have made these areas attractive for a whole range of hunting, fishing and collecting activities, which is probably reflected in the nature and distribution of sites across most of the county. It might be expected, therefore, that more evidence of microlith dominated sites should be present.

The usual model would suggest that neighbouring upland ought to be one part of the total area exploited, providing seasonally complementary resources to the lowland sites generally thought to be occupied in the winter. Other studies suggest that this model need not be the only one associated with hunter-gatherers and that sedentary groups could have existed in certain parts of Europe (Rowley-Conwy 1983), or that some areas may not have required tracts of upland as part of their annual territory. Bonsall (1981) suggests such a background for his sites at Eskmeals in Cumbria. The current evidence though for Merseyside is rather too little understood to aid proper interpretation, but at the moment suggests a much more fragmented system, which might imply an emphasis on mobile hunting strategies.

Areas such as Merseyside ought also to be expected to provide the necessary conditions for those sites where late Mesolithic groups could come together in the winter in more 'permanent' sites or base camps, which would provide archaeological evidence more in keeping with that of the presently known early sites, although none have yet been found. The site at Mawdsley, west Lancashire, may fill this gap to some extent, as it has provided the largest group of microliths from the area, twenty-eight, but also included a number of scrapers from the site which may suggest a function similar to a base camp. Until publication of the site report though a more certain analysis must wait.

The end of hunting and gathering as an economic proposition would probably not have occurred at an uniform rate and would have relied on a number of factors, though perhaps environmental constraints may have had a high priority. This process is discussed more fully in the sections below.

## THE EARLIEST NEOLITHIC - c. 3800-3400 BC

### Background

The term Neolithic represents a period when the economic basis rests to some degree on the production of food in the form of cultivated plants and domesticated animals. This change from earlier economic practice also heralds more complex social developments. The earliest chronological horizon for the onset of Neolithic culture in Britain is about 3400 BC and is largely associated with the large public and 'ritual' monuments such as the causewayed enclosures, long barrows and other mortuary sites, often associated with the first appearance of pottery and a lithic technology showing some development from that of the Mesolithic. The earlier dates in Europe for many similar aspects of the cultural record have led to a conclusion that in general the introduction of farming was due to immigrants from the continent.

This horizon corresponds approximately to a phase recognised widely in the pollen record known as the 'elm decline', where a reduction in elm pollen is evident, in conjunction with a general reduction of tree pollen, and contemporary with the introduction of weed pollen. This is often the first stage of a *landnam*, where the woodland clearance phase is followed by a period of farming with both arable and pastoral pollen indicators, followed by natural regeneration of the woodland cover, in which elm often played little part. In Britain as a whole the beginnings of the elm decline and subsequent *landnams* date to between c. 3300-3100 BC (summarised in Simmons *et al.* 1981), about contemporary with the beginnings of the phase of monument building, and formerly held to provide a distinct horizon for the start of the Neolithic (Smith 1974, 102). The exclusively anthropogenic cause of the elm decline is now increasingly disputed (eg Girling and Greig 1985).

Nationally, where the two cultures occur in the same regions, the latest Mesolithic sites, with one questionable exception in Berkshire, show no overlap in date with the earliest Neolithic sites (Zvelebil and Rowley-Conwy 1986). This makes it difficult to identify the processes of change during the period when Neolithic immigrants entered areas occupied by native hunter gatherers. An explanation for this apparent lack of overlap between the two cultures has been suggested by Case (1969) who argues that practical problems of adaption for new groups in this country must have led in many areas to a period of pioneer Neolithic farming which culminated only after a long time in the building of public monuments and the increased impact on the landscape seen in the *landnams* after c. 3400 BC.

This is reinforced by the site of Ballynagilly, Northern Ireland, where there are a small number of dates for arable cultivation in association with Neolithic material, which precede the typical *landnam* episodes at the

elm-decline by over 500 years (ApSimon 1976). The lack of Neolithic cultural evidence for these earliest farmers in most other regions (see below) is explained by the fact that until they reached a fully established position within their new environment the physical hardships would have meant that they left little archaeological trace (Case 1969).

This pioneer phase would in national terms overlap with the latest dates in the north for the Mesolithic (above page 28), implying a period of time when the two cultures could have been present in this area. A cautionary note has been introduced, however, by Jacobi (1987) who suggests the latest secure Mesolithic dates in the north ought to be regarded as being nearly 500 years earlier than the figure of approximately 3400 BC, thus quite drastically reducing the length of time when potential overlap could have occurred.

### Local evidence

As stated above, Neolithic cultural material and securely associated indicators of food production, do not exist in Britain for the first half of the 4th millennium BC (Smith 1974, 103). There is a small amount of Neolithic material that could potentially be of 4th millennium date in Merseyside but it has no independent chronological associations, while the national pattern would suggest it is unlikely that this material would be datable to the first half of the millennium in any case.

The palynological survey undertaken in the county has, however, some relevance to this period, with the appearance of cereal pollen in dated pre-elm decline woodland disturbances (Fig. 1). At two sites, Flea Moss Wood, Little Crosby, in Sefton and Bidston Moss, Wirral the episodes both centre on about 3,900 BC (Innes and Tomlinson in prep.). This therefore theoretically means that 'Neolithic' farming may have been present in the region roughly contemporary with the earliest known Neolithic cultural evidence in the British Isles, from northern Ireland, and also with Mesolithic sites from the Pennines (Switsur and Jacobi 1975).

### Regional evidence

There are other regional occurrences of the pattern seen in Merseyside, although not so securely dated, where pollen diagrams show pre-elm decline clearings with evidence of cereals, in west Lancashire (Tooley 1978) and in the southern Lake District (J. Taylor pers. comm.). These complement half a dozen other known occurrences for the same pattern elsewhere, mainly in western Britain (Edwards and Hirons 1984).

### Discussion

In contrast to the late Mesolithic, there appears to be a widespread lack of archaeological evidence for the

(not necessarily synchronous) introduction of Neolithic culture and farming into the region (below page 33). This lack of evidence means that the several possible lines of explanation of the processes underway during the first part of the 4th millennium BC must remain speculative until more evidence is forthcoming.

The early introduction of cereals into the county and the region may, however, point to a Neolithic presence at the beginning of the 4th millennium BC here and, although there are no local Mesolithic sites with radiocarbon dates as late as this, the early to mid 4th millennium BC Mesolithic sites known from the Pennines imply that a period of overlap could be possible between the two cultures in the area.

This phenomenon might be reflected in those locations where microliths and leaf arrowheads are found together, as occurs in the Pennines (Barnes 1982, 46) and as may be the case with the north Wirral sites (see page 33). It implies that the same areas were being used, at least for hunting purposes, and that some form of contact must have been made. The lack of a stratigraphic relationship on most of these sites however makes this interpretation difficult to sustain with any certainty, as there could be unrecognised interludes between separate occupations.

A note of caution has been inserted by Zvelebil and Rowley-Conwy (1986) who warn against the use of cereals alone as an indication of pre-elm decline farming, due to potential problems such as contamination and misidentification. Kinnes (1988) also warns against acceptance of a model of small scale clearance and cultivation for the earliest Neolithic from interpolated cereal pollen evidence, given that the first actual evidence of cultivated cereals does not occur in archaeological contexts before the end of the 4th millennium BC. He also points out difficulties with the palynological evidence, resting on possible misidentification of wild grass pollen grains as cereals and mis-interpretation of possible late glacial survivals as human disturbance indicator weeds associated with the 'clearings'.

There are a number of uncertainties, therefore, in an interpretation of the earliest Neolithic from palynological evidence alone. In Merseyside the evidence shows there is palynological evidence for actual rather than implied tree reduction, in that tree pollen does decline at a number of separate locations and that some pollen indicators of more open ground appear at the same time. In addition, at two sites where there is evidence of tree reduction, cultivated cereal grains may also be present. The lack of contemporary archaeological evidence, however, makes it questionable at the moment whether these clearings were caused by food producing groups with a Neolithic culture, and an anthropogenic cause is yet to be properly demonstrated.

This obviously defines a number of pressing research problems. These can be expressed through a number

of theoretical considerations which future work will aim to test. At the moment there would seem to be three possible alternative assumptions: that cereals were not in use before the late 4th millennium BC, when the first Neolithic cultural associations begin; that Neolithic farmers, ie immigrants defined solely by use of cultivated crops, were present in the area at the beginning of the 4th millennium BC (there is no evidence at all for domesticated animals in the area, nor nationally before the late 4th millennium BC); or that Mesolithic natives had access to some aspects of Neolithic culture, ie the means of food production.

If any progress is to be made with regard to the first two assumptions, then a priority is to acquire a better range of dates for more late Mesolithic sites and to locate and date the earliest Neolithic settlements in the area (see below), crucially with faunal and environmental associated evidence. We would then be in a better position to talk about the processes and chronology of change to a food producing economy which are implicit in these assumptions. At present this can only be attempted through the palynological evidence, which, as has been seen, has to be treated with care. However, for the purpose of building testable models, it might be accepted for the moment that a few cereal grains can be extrapolated to postulate a phase of pre-elm decline pioneer farming in the region.

In the second assumption, therefore, early pioneer farming activities, if carried out by incomers, would probably have rested strongly on hunting as an essential supplement. This means that the effect on the environmental record of farming cultures during the early stages of contact with native groups would be very similar to that of the native Mesolithic groups. It follows therefore that the small temporary non-arable clearings of the 4th millennium BC noted in the county and across the region, could represent activity by either cultural group, with the clearings with cereals possibly representing another facet of the Neolithic response.

This reliance on hunting by new farming communities might have been particularly strong in the Merseyside area, as new peats were forming during the 4th millennium BC in addition to pre-existing ones, placing restrictions on the widespread availability of arable land. The coastal environments, changing through time and space, would at times have compounded the scarcity of suitable arable land, although providing zones rich in natural resources for hunting and foraging.

There may, however, be another interpretation for the palynological pattern which would explain better the lack of earlier 4th millennium BC Neolithic material in this region. This relates to assumption three, with Mesolithic groups in the area having access to some aspects of 'Neolithic' life, ie agriculture. In this case Bradley's model (1984b, 8), may be applicable. He suggests that farming could have been adopted in different places and at different times by coastal

Mesolithic groups engaging in long distance trade which lay outside the normal social contexts through which cultural traits were transmitted. In the local pollen diagrams therefore two elements of the same economy may indeed be represented by the two kinds of clearance during the early 4th millennium BC, but in this case associated with indigenous Mesolithic groups.

The nature of the process of change may also have been influenced by the chronology of the changes, the necessary dates for which are also almost totally lacking in the region. The only possible hint towards understanding this at the moment may lie in the established late 4th/early 3rd millennium BC Neolithic patterns in Cumbria and Wirral. These two areas have the strongest Neolithic cultural evidence in the region (suffering a little on Wirral with rather wide possible date associations for the material (see below)), together with contemporary dated clearance phases associated with cereals, a situation which contrasts with many areas further inland in the region.

The apparent relative success in the immediate post-elm decline period in these two areas may have resulted from the nature of Mesolithic adaptations to the environment, which could have variably influenced and even delayed the introduction of Neolithic farming and cultural identity. For example the subsequent contrast in the intensity of post-elm decline clearings between west Cumbria and elsewhere in the region, where the palynological evidence is much slighter for clearings and farming (below page 38), may have some link with the nature of the Mesolithic adaptation in the coastal area, where settlement may have involved a degree of sedentism (Bonsall 1981) and which could have therefore facilitated an early change to farming.

This idea may be a little presumptuous though, as there are a number of possible objections to this view. The evidence for sedentism is not particularly strong yet and the coastal Cumbrian pattern lies in about the only intensively surveyed area in the north of the region, and so it is difficult to know how typical or otherwise this pattern may be within the context of lowland late Mesolithic settlement.

Merseyside may in some respects be a better example, in that systematic survey has taken place across a number of topographical zones, with the intention of being better able to identify the patterns, rather than just the sites. Here there is a similar contrast in the post-elm decline situation, between the coastal areas of Wirral and their immediate hinterland, where archaeological and palynological evidence suggests relatively intense settlement, and areas to the east of the Mersey where both types of evidence show much slighter post-elm decline activity (see below). Mesolithic evidence is consistently found in this latter area, but there are hints that it may be different in nature from that on Wirral, although this may yet be a chronological distinction.

This suggests a testable hypothesis, in that as the coastal areas of Merseyside appear to have supported the most intensive Neolithic farming communities, it is to these areas that we should look for the early establishment of farming practice, perhaps more likely to be acculturated natives, while inland areas in the county had less success in establishing farming communities, with Mesolithic economy perhaps lingering longer in these areas less conducive to early farming. The possibility therefore exists that native acculturation was not uniform across the region, and hunting, foraging and Mesolithic tool kits may have continued for an as yet unknown period in some areas. However, until there are dates to provide a basic chronology for the archaeology of the area, theories of the processes of change during this period must remain couched in such generalised speculation.

### EARLY NEOLITHIC - c. 3400-2700 BC

The background to this period has already been outlined (see page 30) but is marked essentially by the first adoption of communal monuments, new cultural artefacts and environmental changes associated with the elm decline, marking in many areas significant changes in economic, cultural and social organisation, as sites and archaeological material become relatively more common.

### MIDDLE AND LATE NEOLITHIC c. 2700-2000 BC

#### Background

The earlier of these two phases of the Neolithic, apart from the development of existing pottery styles and the public and burial monuments (Smith 1974), may also be characterised by a so-called period of 'standstill' due to a supposedly distinct horizon of regenerated woodland which was cleared in the early Neolithic, and a lack of new contemporary clearances taking their place (Bradley 1978a).

After the suggested 'standstill' of the middle Neolithic, there is evidence that clearance activity once more increases late in the millennium (Whittle 1978) and new sites become established, often represented by scatters of flintwork with scrapers the dominant type, possibly exploiting seasonal resources, in previously marginal areas such as coasts and uplands (Bradley and Hodder 1979, 96-7).

Nationally, many aspects of the late Neolithic archaeological record are difficult to separate from the pattern in the early Bronze Age, particularly when dealing with lithic material, so that a largely undifferentiated late Neolithic/early Bronze Age continuum is often evoked (eg Healy 1984).

## Local evidence

There is a reasonable amount of material that can be attributed to the Neolithic period locally, but little of it can at the moment be attributed any more closely. Of those sites found during fieldwalking in the county, most have been categorised as Mesolithic on the basis of the dominance of blades in flint scatters which by and large lack any other chronological determinant. Work in southern England has shown, however, that there can be very little difference in the shape of the waste material from flint knapping in both the late Mesolithic and the early Neolithic period (Pitts and Jacobi 1979). This development does not necessarily apply to this part of the country, but until more research is done on this particular aspect caution ought to be applied in asserting that all the identified sites of this type are Mesolithic. The two blade-dominated Merseyside sites of this type that have been recently excavated have both subsequently produced Mesolithic evidence (above pages 23 and 27).

It is generally accepted that flint technology changed during the later part of the period, with a move towards smaller, squatter waste flakes and included a number of new implement types (Healy 1984), although neither this change nor its chronological parameters have yet been verified by excavation for the northwest.

Fieldwork has produced only twelve concentrations of flint in the county not characterised by blades and which may therefore relate to a post-Mesolithic period (Fig. 2). Eight are from Wirral; two from Thurstaston Hill are the product of casual finds, the others, in Greasby, Irby (three), Heswall, Poulton and possibly Bromborough, come from fieldwalking. To the east of the Mersey, sites are known from Hale, Newton, West Derby (from the excavation of a medieval settlement, Philpott in prep.) and Croft (Cheshire).

Three of the Wirral sites and two east of the Mersey are totally undiagnostic and have therefore been shown on all maps. Of these, four largely comprise honey-coloured boulder clay flint assemblages, similar to the raw material from the blade-type Mesolithic attributed sites from east of the river, while the other, at Newton, has a mixture of grey, bluey grey and brown coloured flint.

The seven other sites contain implements, all including at least one scraper and or knife, except for Thurstaston Hill which includes a barbed and tanged arrowhead. Allowing for the poor understanding of the chronology of such small flint assemblages, perhaps the most likely date for these sites ought to be in the late Neolithic/early Bronze Age period (Figs 2 and 4). The Irby and West Derby raw material is largely honey coloured boulder clay flint, while the Hale and Thurstaston Hill sites are preponderantly of translucent grey flint, including the barbed and tanged arrowhead as well as retouched flakes at the latter, although the exact relationship between all the flint from this

location is not known.

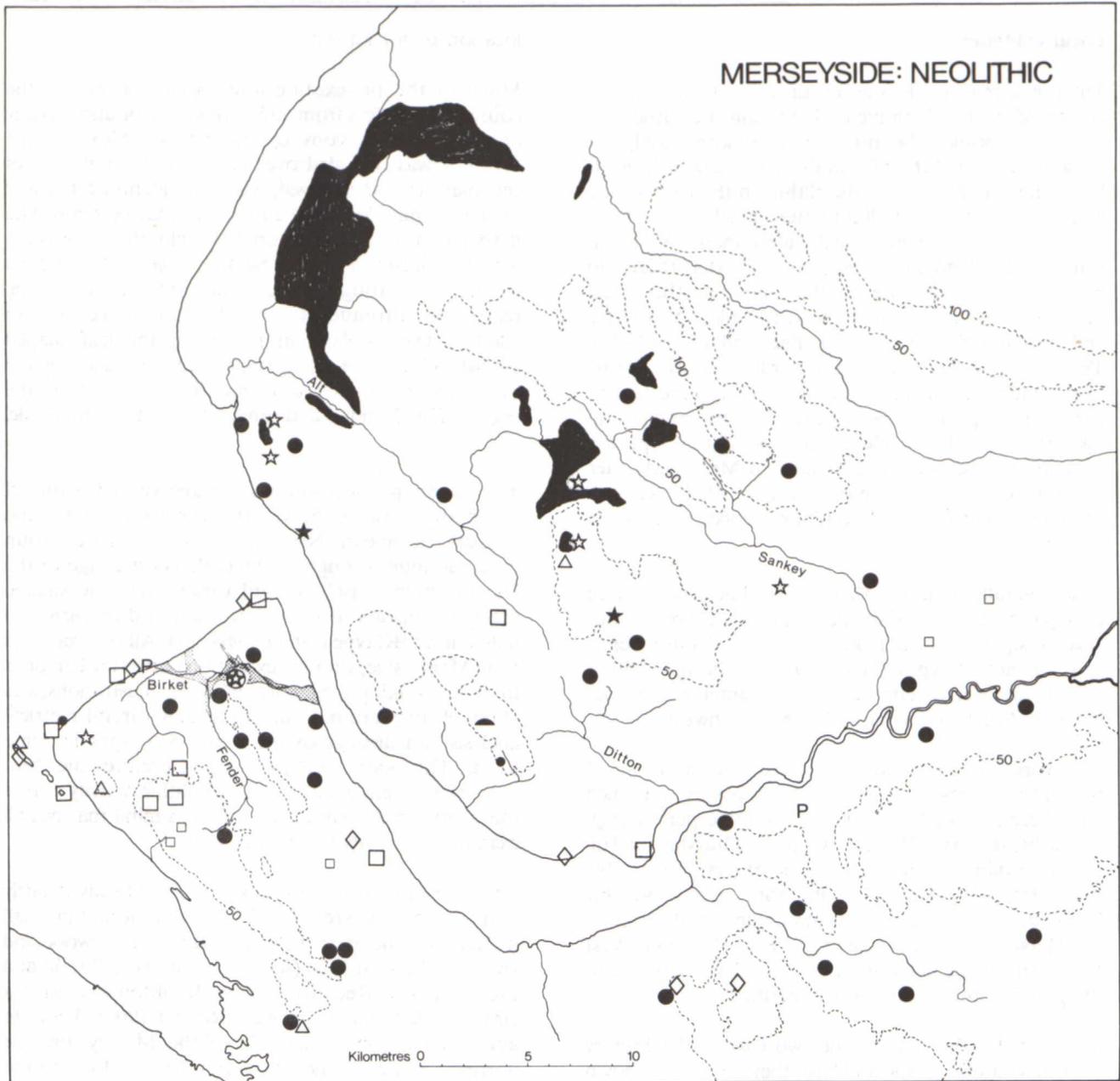
Much of the pre-existing artefactual evidence in the county also suffers from difficulties of attribution to any of the main divisions of the period. Most of the evidence was recorded over 80 years ago and little of this material has survived, while the identification and archaic terminology of the flintwork may be misleading if trying to date this material too closely. However a few basic illustrations of some of the material do survive to act as a rough guide, and some of it can be reasonably attributed to the Neolithic in general. In addition two artefacts in particular, the leaf shaped arrowhead and the stone axe, usually found singly and by chance, do occur reasonably consistently across the region (Figs 2 and 3) and can be dated to the Neolithic.

The leaf shaped arrowhead has three sub-types one of which, the ogival, along with the true leaf types is found consistently on early Neolithic sites but the latter group does continue through to the early Bronze Age of the 2nd millennium BC. A third variety, the kite shaped sub-type appears to be mainly a late 3rd or early 2nd millennium BC type (Green 1984, 19). All the examples from Merseyside, with the exception of two broken ones from fieldwalking, are known only from illustrations, and although they are not kite types, only careful metrical analysis can distinguish the other two types in some cases. The local examples are therefore the best indication of early and middle Neolithic activity across the county, but it should be borne in mind that not all examples need necessarily be early.

The distribution of these types of arrowheads is fairly sparse across the area (Fig. 2). They are found in small numbers on the present shore at Meols in the woodland layers of the peat beds (see below; Shone 1911, 30 and Fig. 4) and at Red Noses, New Brighton alongside a larger, varied flint assemblage (Roeder 1900). They are also known from either side of the Mersey and the northern slopes of the Cheshire ridge overlooking the river.

The other flint artefactual evidence for settlement sites, which need not be early, is even less diagnostic on the whole, but reinforces the trend to the north coast of Wirral. A further concentration of material comes from Hoylake (Glenn 1914). At this site, and at New Brighton, the main classification of implements occurring comprise, 'scrapers, knives, borers, lanceheads'. There are also several imprecise references to similar assemblages particularly on 'the Eye' ie one of the islands by West Kirby (Smith 1873, 127), and more specifically Little Eye (Smith 1871, 127). This may suggest two more locations, although the Little Eye material may be being confused with the Mesolithic site already mentioned.

At New Brighton, Meols and Hilbre it is difficult to know if these elements are contemporary with the arrowheads more diagnostic of the earlier Neolithic or



KEY:

Flint Scatters:

- With scrapers.
- ◻ Undiagnostic.
- Polished axe.
- Polished axe (some doubt).
- ◇ Leaf arrowhead(s).
- △ Transverse arrowhead.
- P Pottery.
- Calderstones.

3rd Millenium Palynological Evidence:

- ☆ Episode(s) of temporary woodland reduction/regeneration.
- ★ As above, with cereals.
- ⊗ Consistent woodland reduction episodes, with cereals.
- ▨ Buried river channel.
- Peat

Figure 2: Map of Neolithic sites, Merseyside and adjacent areas.

represent a separate phase of occupation. The least easily confused term within this material is 'scrapers', but their presence within these sites could suggest, in the absence of any chronologically determinant scraper morphology, except perhaps for those associated with Beaker assemblages (Healy 1984), that occupation of these sites could belong to any time from the earlier Bronze Age back to the Mesolithic.

There is less evidence for the Red Rocks site at Hoylake having a link with the early Neolithic as most of the other terms used in the published report are ambiguous. It did however also include cores, a 'hammerstone' (Glenn 1915) and 'axe fragments with flattened sides' (Jackson 1936, 74) as well as a quantity of animal bones and shells in a burnt area, although unfortunately the excavator was not certain that these latter were associated directly with the flint debris (Glenn 1915). If the description of the material is accurate it would suggest a fairly substantial settlement. The axes, if identified correctly, would suggest a Neolithic date for the site (see below), but could represent activity in either the earlier or later part of the third millennium BC.

Stone axe production spans a long period, starting in the late 4th millennium BC and continuing in a few cases into the early 2nd millennium BC. The nearest two production sites of relevance to Merseyside were in the Langdales (Bunch and Fell 1979) and at Penmaenmawr, north Wales (RCAM 1956), both of which appear to have been in production, probably mainly for local needs at first, by the start of the third millennium BC. It was not until after c. 2800 BC that increased production was allied to an enlarged distribution pattern (Smith 1979).

There are a number of explanations possible for the distribution of axes seen across the region, mostly concerned with trade routes (Barnes 1982, 45; Cummins 1980) but Bradley (1978b, 13) suggests, from evidence from the coastal Lake District, that the axes represent activities connected with woodland clearance at the margins of the settled areas where activity was limited but repeated and the local evidence seems to confirm a link with settlement and landuse rather than trade.

The strongest concentration of axes in Merseyside (Fig. 2) is around the former course of the rivers Birket and Fender on the north Wirral and particularly on the lower slopes of the sandstone ridges of Birkenhead and to a lesser extent Wallasey. There is also an extension southwards on to the boulder clay areas of central Wirral around Willaston.

To the north and east of the Mersey the pattern is less concentrated, though again there appear to be links with the two major valleys. The Alt/Ditton has a thin scatter particularly around the mouth of the Alt. The axe from Little Crosby is interesting in that it is a rough-out rather than the finished article. The other main locational factor appears to be the Sankey valley

further to the east in St Helens, where the distribution is stronger at the southern end, around its confluence with the Mersey and continuing along the river to its confluence with the Weaver in north Cheshire (Fig. 2).

Some of these axes were no doubt in use during the second half of the 3rd millennium BC. Other material, however, can be attributed more securely to the later part of the Neolithic but it amounts to little and is scattered. The best is only a single sherd of Peterborough type pottery from the present shore at Meols, Wirral (Varley 1964, 42). The possible Neolithic site in the Bromborough area with imported chalk flint implements of this period (Davey 1973) may have to be discounted as it seems one of the chalk flints from the collection can be shown to have been brought from Norfolk quite recently, thus throwing doubt on these distinctive implements although a few other pieces may be local and of late Neolithic date (S. Nicholson pers. comm.).

Of the other evidence, that from the Calderstones, Liverpool, suggests that the surviving six decorated stones formerly belonged to a class of burial monument of Neolithic type. Although the exact form of the monument is not known, it seems reasonable to place it in the general context of the passage graves (Cowell and Warhurst 1985; Twohig 1981).

The earliest, very simple, passage graves date from the beginning of the 3rd millennium BC in Ireland, with the most sophisticated dating from the middle of that period (ApSimon 1985/6). It is suggested that Bryn Celli Ddu, Anglesey was also a late 2nd millennium BC construction as it is built on the site of a pre-existing henge monument (Lynch 1970, 55-65). If the Calderstones, as seems likely on the basis of the art style, was in this general tradition it might therefore be placed after the middle of the 3rd millennium BC when tombs in Ireland included very similar markings, although perhaps like the Anglesey example, nearer to the end of the millennium.

The passage graves in Anglesey and some of the decorated ones from Ireland are all more complex constructions than seems likely to have been the case for the Calderstones on the available evidence. The dating of the passage graves without carvings in north west Ireland suggests that the complex monuments with art, mainly in eastern Ireland, were a development from these simple graves. There are also a number of cases, however, where eastern examples with art are of much simpler design, such as Tomb 2 at Knowth (Herity 1974, 37) which could provide a context for the Calderstones late in the Neolithic.

Overall, therefore, in the context of northwestern England, the area has a reasonable amount of Neolithic archaeological evidence, but much of this evidence has little chronological precision when attempting to trace the development of settlement during the period. In the light of this imprecision the pattern of dated

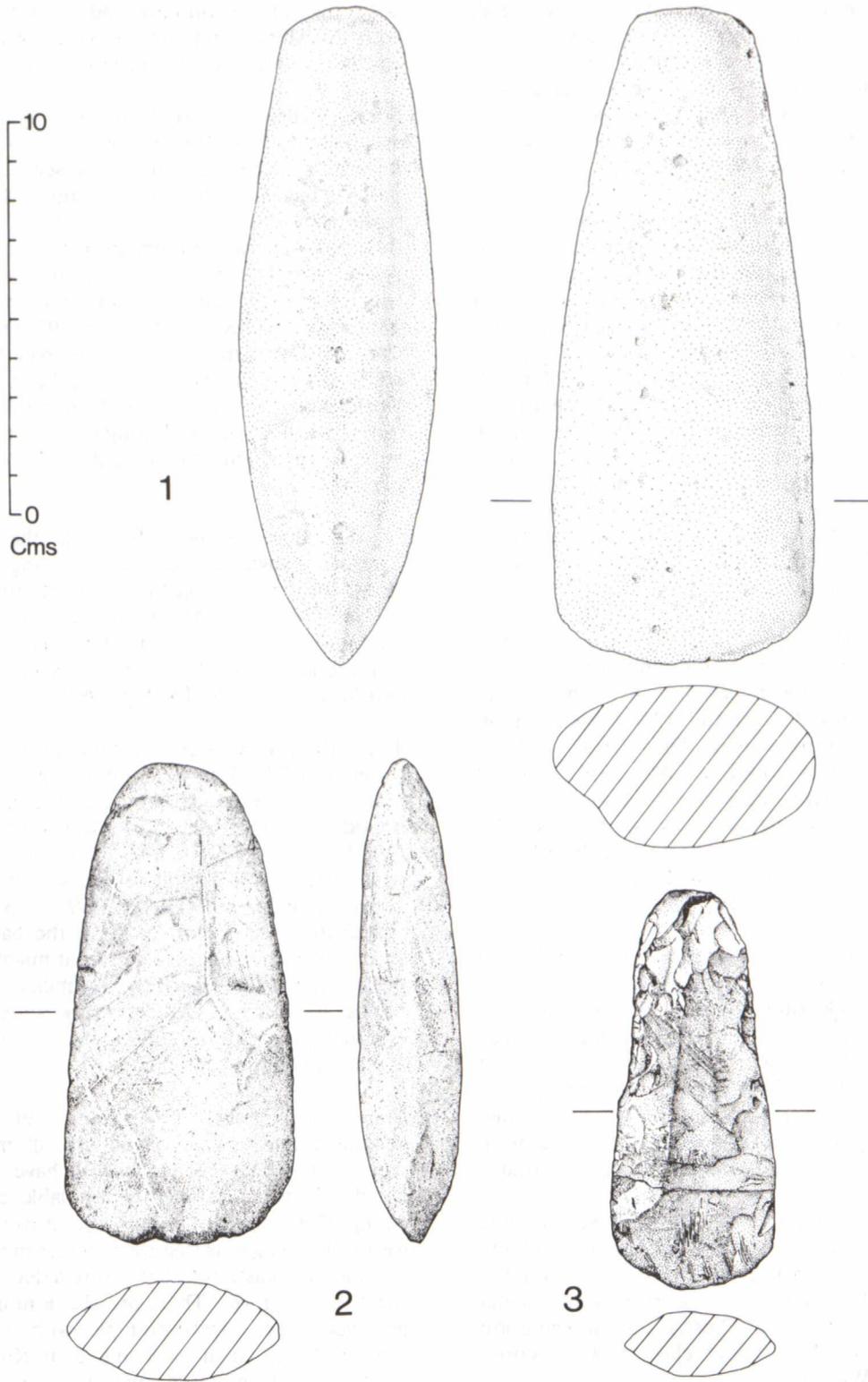


Figure 3: Neolithic stone axeheads, Merseyside. 1. Whiston, (see also photograph, Bailey 1942). 2. Melling (after Chitty 1977). 3. Toxteth Park (see also photograph, Garstang 1906).

palynological evidence could potentially provide relatively specific guides as to the most likely times when this material could have been in use.

The elm decline has been identified within a number of pollen diagrams for the county (Innes and Tomlinson this vol.) but what is noteworthy is that there is little indication of the sort of concerted and persistent activity within the landscape, as is evident for areas outside the region to the south and east, at this horizon. The pollen diagrams from two of these sites, Knowsley Park and Park Road, Meols, show that the nature of the activity differs little from that preceding the elm decline, with little overall effect on the dense woodland cover, which soon regenerates, and with no trace of cereal farming.

In many areas of the county this pattern appears to have continued with little sign of development throughout the millennium (Fig. 2). Around the Shirdley Hill sand in Sefton District the first real woodland clearance is not seen until the first half of 3rd millennium BC, with pollen indicators of clearance associated with fire at the dated site of Sniggery Wood (Innes 1982; Innes and Tomlinson in prep.). The first major clearance activity to the southeast, near the junction of the sand and boulder clay in Knowsley Park, also dates to around this period with a radiocarbon date of c. 2650 BC and with no evidence of cereals.

Further inland yet again, around the claylands surrounding Parr Moss, Burtonwood, St Helens, the dense oak woodland appears to have been less affected with only a minor disturbance c. 2790 BC which soon regenerated while the woodland showed little change throughout the rest of the millennium. To the north of this site, on the eastern slopes of the Sankey valley, in an area where three axes have been found, a diagram from Holland Moss shows some woodland clearance at the base of the profile for which a Neolithic date is suggested (Baxter and Taylor 1980) but this ought to be treated with caution until radiocarbon dates become available.

An exception to this pattern, however, is found at Prescott, a few miles to the northwest of Burtonwood where two levels dated between c. 2500-2600 BC do provide evidence of cereals in association with woodland reduction (Innes and Tomlinson in prep.). In Sefton District a coastal peat site, Mount Pleasant, Great Crosby, in an area where most of the limited number of axes from north of the river are found (Fig. 2), also reveals evidence of small-scale clearance with cereal farming right at the beginning of the 2nd millennium BC (Innes and Tomlinson in prep.).

A more noticeable exception to this pattern is seen on Wirral at Bidston Moss where, although the elm decline is not dated, there is a trend, between about the middle of the 4th millennium BC and c. 2790 BC (at which point the profile is truncated), for the oak and elm woodland to progressively lighten until, by the latter date, woodland occupied only about 20% of the total

within the vicinity of the bog. Within this span there are three short episodes of noticeable reduction of woodland associated with an increase in grassland pollen, in the first and last case with cereal pollen and arable weeds, each time followed by regeneration of the woodland (Innes and Tomlinson in prep.).

The dating of these clearances suggests, therefore, that this activity could represent a context, within the early Neolithic, in which some, at least, of the Wirral axes could be located. A problem exists with this interpretation, however, in that the truncation of the profile may be hiding an equally valid context for the axe distribution in the later part of the 3rd millennium BC. Work on the north Wirral coast has shown that the 4th millennium BC may have included a period when marine inundation reached further south than the present coast, as recorded at Little Meols, at Leasowe (Innes and Tomlinson in prep.) and in the buried valley of the Fender near Moreton (Kenna 1978). The wooded conditions which existed along the present shore, represented by the lower forest beds, are thought to have occurred when these maritime conditions had ceased, by the early 3rd millennium BC (Kenna 1979, 44), although estuarine/marine conditions may have lain nearby (Kenna 1978, 28). It is not recorded whether the leaf arrowheads from the Meols shore come from this peat bed or the later one (see below).

Except for small scale local incursions the coastline may have remained much as it is today after this date (Tooley 1978; Kenna 1986). One such incursion though may be seen at Meols, where a marine transgression is dated to c. 2670 BC (Innes and Tomlinson in prep.), while at nearby Great Meols saltmarsh conditions are recorded preceding an alder fen stage at c. 2350 BC (Kenna 1979, 42). Probably part of this same phase is also identified around the Alt where a small embayment may have been caused around 2400 BC (Innes and Tomlinson this vol.).

### Regional evidence

The datable material across the region provides a slightly better framework for development during the late 4th and 3rd millennium BC, although sites are still not prolific nor particularly well understood. There are a few burial monuments which would appear to be of early Neolithic type, the Bridestones in Cheshire (Dunlop 1939), the Pikestones (Lynch 1966) and Rayset Pike (Clare 1979), both in Lancashire. A crop mark site at Churton, Cheshire has also been suggested as being a possible early Neolithic mortuary structure (Longley 1987).

Most types of 3rd millennium BC public monuments are either absent or found only on the periphery of the area. Of the public ceremonial monuments the early Neolithic causewayed enclosure is absent extending no further north than the Midlands (Palmer 1976). A few henges, a class of monument largely belonging to the

late Neolithic and early Bronze Age are present in the region (Clare 1986) one of which, at Llandegai, north Wales has dates of c. 2750 BC (Houlder 1968). Others near Penrith are undated.

Neolithic domestic sites are rare in the northwest. The main site, at Ehenside Tarn on the west Cumbrian lowlands, provides a date of c. 3400 BC, associated with a number of stone axes and organic material (Darbishire 1874). For the rest of the region the limited amount of Neolithic material could relate to the 3rd as much as the 4th millennium BC. Two sites, at Norton, Cheshire (Greene and Hough 1977) and Planeswood, Lancashire (Beswick and Coombs 1986) have produced pits, with pottery that by analogy with other areas could belong to the 4th millennium BC, but this type of pottery did continue in use across the country for about a thousand years (Smith 1974).

Elsewhere, leaf arrowheads are rare except on the Pennine fringes (Barnes 1982), while the distribution of the polished axes is concentrated particularly in the Mersey/Weaver area, the Irwell-Mersey basin on the fringes of the Pennines, the Fylde, around Lancaster and on the southern coastal fringes of the Lakeland uplands (Cowell in prep. d). As already stated, however, most of them can only be dated as precisely as the 3rd millennium BC.

Pollen diagrams from western Cumbria show quite widespread clearance with cereal farming after the elm decline at c. 3100 BC (Pennington 1975), which with the earlier date for Ehenside Tarn suggests a probable association between groups using Neolithic cultural artefacts and farming in the area. Elsewhere in the region as in Merseyside the elm decline does not herald the beginnings of a similar sustained period of clearance. Cereals do, however, occur in a small proportion of the diagrams relating to the small scale and scattered clearings of the late 4th and early 3rd millennia BC, except in the south of the region in Cheshire (Howard-Davis *et al.* 1988).

For the second half of the period there are a number of sites known which include pottery that is reasonably diagnostic, although in some cases with a period of use extending into the early 2nd millennium BC. These are more evenly spread across the region but without being associated with settlement features. They are recorded in Lancaster (Penney, 1978b), Eddisbury, Cheshire in a funerary capacity (Longley 1987, 51-2), and the largest assemblage, pre-dating a 2nd millennium BC burial mound, at Gawsworth, Cheshire (Rowley 1977).

At Tatton, Cheshire, post holes and a pit containing charred barley and a single oat grain, are dated c. 2550 BC (Higham 1983, 88-9). A number of surface sites represented by flint scatters are known in reasonable density along the coastal strip in west Cumbria (Cherry and Cherry 1984). Inland, only the site at Ashton, Cheshire which includes polished stone axes is recorded (Leach 1942). As with the pottery many of the flint

types in these assemblages are likely to have continued into the chronological early Bronze Age.

## Discussion

An attempt has been made to assign loosely various elements of the archaeological record to the major divisions at present recognised for the c. 1800 radiocarbon years of the Neolithic, in the hope of providing a framework for economic and social development in the area to be refined or rejected as necessary. Such an exercise is fraught with difficulties owing to the small database and the lack of precision in the dating of much of the material that does exist. The lack of a regional typological framework also means that unrecognised local differences may make some aspects of the national pattern used here inapplicable to this area.

The palynological evidence at the moment suggests two different types of responses within the county. On Wirral there appears to be repeated and increasing clearance during the chronological early Neolithic, while the distribution of the axes suggests that clearance activity during the Neolithic was concentrated around the slopes of the sandstone ridges in close proximity to the main estuarine areas. Assuming contemporaneity for the moment, Bradley's suggestion (1978a, 13) that the clearance ought to be taking place away from the main settlements and therefore only intermittently visible in the pollen record does not appear to be borne out, in that axes and clearances, with arable farming, are found in approximately the same area. Clearance therefore might have been taking place immediately around the settlements and such early Neolithic sites ought therefore to be expected around the ridges and mosslands of north Wirral.

An alternative view, however, could be that the axes are in fact mostly later than c. 2750 BC and are being used in the middle or late Neolithic period on regenerated secondary woodland in the formerly cleared areas which are recognised palynologically. The lack of pollen evidence for the later period of the 3rd millennium BC is thus a big drawback when attempting to identify such patterns.

This evidence occurs a little inland from the present coast where limited lithic finds suggest that some Neolithic activity is highly likely, perhaps associated with hunting. The environmental evidence might suggest that the archaeological evidence seen along the coast was taking place after the late 4th millennium BC, owing to the more extensive maritime conditions that seem to have persisted for several centuries prior to this. The withdrawal of marine conditions allowed the growth of oak and alder fen along the present shore, where these sites are located, although the general environment would still have been associated with the perimarine zone (Kenna 1986, 14). These coastal sites perhaps represented a seasonal alternative location. Such sites

would have been ideal for the exploitation of both the intertidal zone, with fishing, fowling and collecting and the perimarine zone, where enrichment of soil would have taken place fairly regularly, allowing grazing and possibly small scale cultivation.

If the leaf arrowhead element of the coastal flintwork is contemporary with the pollen evidence, which is derived from the sampling site about three miles away, there are two possible alternative interpretations. Either it represents a distinct and palynologically unrecognised component of the land use and settlement pattern of the first half of the millennium or it relates to the clearance activity seen in the nearby pollen diagrams. If the latter were the case, the woodland reduction seen in the pollen record and implied by the axes might indeed be interpreted as being peripheral to the settlements, which in this case lay nearer to the coast.

A process of colonisation of coastal environments had perhaps started nationally in the late Neolithic and gained momentum in the early Bronze Age (Bradley 1978b). The Wirral coastal sites do fulfil some of the expectations of this model, in terms of location and assemblage composition, containing scrapers and arrowheads although the local assemblages are inferior by comparison. The local assemblages, such as they are, also contain some identifiably 2nd millennium BC types.

Perhaps much of the coastal archaeological material, therefore, for the moment sits better around the junction of the late Neolithic/early Bronze Age. This therefore begs the question in relation to the nature of settlement prior to the mid third millennium BC in the, seemingly, relatively well settled north Wirral. This is of importance in deciding how far this suggested late Neolithic/early Bronze Age land use on the coasts represents continuity or recolonisation, although the arrowheads do imply some earlier use of this environment.

Bradley's model (1978b) is largely based on southern and eastern England where intensively populated areas had developed a high degree of social organisation by the late Neolithic and where population or environmental pressures, not necessarily linked, might logically demand colonisation. As is discussed below, the same degree of population pressure is unlikely to have existed in northwestern England in general and Merseyside in particular, thus making talk of Neolithic 'standstills' and 'colonisation' less relevant, particularly until pollen diagrams and excavated sites for this period become available.

The way in which the non-blade flint sites, from fieldwalking on the inland sandstone ridges, relate to this pattern is for the moment unknown owing to the lack of chronological precision for the flintwork, although two of these sites, at Irby and Thurstaston might in fact seem on balance to belong to the end of the period or to the beginning of the 2nd millennium. The second kind of pattern in the Neolithic is visible to

the east of the Mersey estuary. Here the palynological record gives a more complete picture of the 3rd millennium BC and reveals differences from that on Wirral and areas outside the county to the south and east. In this part of the county unlike the national picture, the elm decline is not matched by the occurrence of *landnams*, initiating a period of sustained clearance and arable farming; the continuance of small, short lived clearances appears to be more the norm. Several other areas both across the northwestern lowlands (Howard-Davis *et al.* 1988) and the uplands (Barnes 1982) also show little evidence of this concerted attack on the woodland cover at and just after the elm decline. The Prescott and Mount Pleasant sites might, however, suggest caution ought to be applied in treating this as a blanket statement for the whole area, until more dated pollen profiles are available.

The current evidence implies that the response locally was different in many respects from the wider pattern. Most parts of the county see reasonably quick woodland regeneration of small clearings as the norm with centuries between clearance phases in specific locations, pointing to a relatively small population making their impact on a shifting basis, away from the relatively more settled area of north Wirral. This may be a reflection of the particular physical characteristics of much of the county which would have had many attractions to a hunter gatherer economy. But with the growth of large peat bogs, coastal inundation and intervening large areas of boulder clay soils, settled farming may have been more restricted. Even on Wirral, the known settlements, regardless of whether they are seen as of the early or later part of the Neolithic period, have a noticeable hunting component to their flint assemblages. In addition, the pattern east of the river not only suggests a slighter economic response but also there does not seem to be any quickening of activity as the millennium progresses.

A distinction between this area of northwestern England and southern and eastern England is very evident from the fieldwalking evidence as well as that of the pollen. The latter areas when fieldwalked provide overwhelming evidence of sites of the earlier Neolithic and late Neolithic/early Bronze Age, existing as large scatters over many acres, with the earlier sites often found by accident when excavating other types of site existing mainly as flint and pottery artefacts in pits (Healy 1987).

There is no similar pattern in Merseyside, particularly east of the Mersey where sites of whatever period are mainly small discrete entities. Two areas on Wirral, at Greasby and Irby, show chronologically mixed lithic evidence over larger areas, although still not comparable in scale with the national scene. On the basis of the limited work done on this question, the local concentrations appear more often to be chronologically distinct. This generally including a Mesolithic element, and an undiagnostic element. The identifiably Neolithic or Bronze Age tools are very limited. The best

comparison to this sort of pattern occurs in north eastern England around Tyne and Wear (Young 1987) and, as with Young's conclusions, the available evidence from Merseyside leads to reservations about the extent to which basic social, economic and possibly technological traits changed before the later part of the 3rd millennium BC.

Early Neolithic public and burial monuments are lacking in the county although they are known along the upland fringes of the area. This distribution may relate to differences in subsequent land use between different topographic zones, although there was a reasonable antiquarian tradition in the area which might be expected to have noted the more obvious lowland monuments. Other explanations may be that regional alternatives to such public monuments as causewayed camps were less visible, or perhaps, most likely, that social cohesion and population pressure was such that monuments of this type were not built, or at least were not numerous and served a far wider area than did those found in regions to the south and east. Clare (1987) suggests that hill settlements, such as Planeswood, Lancashire, may have been northern equivalents to the causewayed camps, although again, Merseyside has no likely candidates for such a role.

Where mobility is the dominant feature of the economic and social regime then social groupings are not as developed and the 'band' rather than kin groups provide the focus (Gregg 1988). As has already been suggested the archaeological and palynological record, particularly to the east of the river, shows little change from the chronological Mesolithic into the 3rd millennium BC and it may be right to suggest a parallel between this and a similar lack of development of social organisation in the area, at least perhaps for the earlier part of the millennium.

In the late Neolithic it is the same areas in the northern part of the region and in north Wales where the distribution of the public monuments overlaps with that of the earlier burial sites. The evidence from the mouth of the Mersey centred around the Calderstones, however, means that probably by the end of the 3rd millennium BC, social organisation was such that a visible and permanent site needed to be built as a mark of social, religious and, presumably, ritual activity and represents the earliest secure evidence so far for the adoption of 'Neolithic' culture in the county, east of the Mersey. This might therefore suggest that the main settled areas east of the Mersey in the later Neolithic ought to be nearer the mouth of the river, an area for which there is no environmental evidence yet, and that inland activity, largely in the main valleys, is sparse and marginal.

The dating of the Calderstones monument is obviously difficult as its exact form is not known, but the available evidence points to a number of similarities with what was happening in western Ireland from about the middle of the 3rd millennium BC. The evidence of the

passage grave at Bryn Celli Ddu in Anglesey which replaces a henge monument might suggest that some monuments of this type were still being built quite late in the Neolithic. It would seem unlikely however that the Neolithic influences seen in the Calderstones would be taken up afresh much after the end of the 3rd millennium BC.

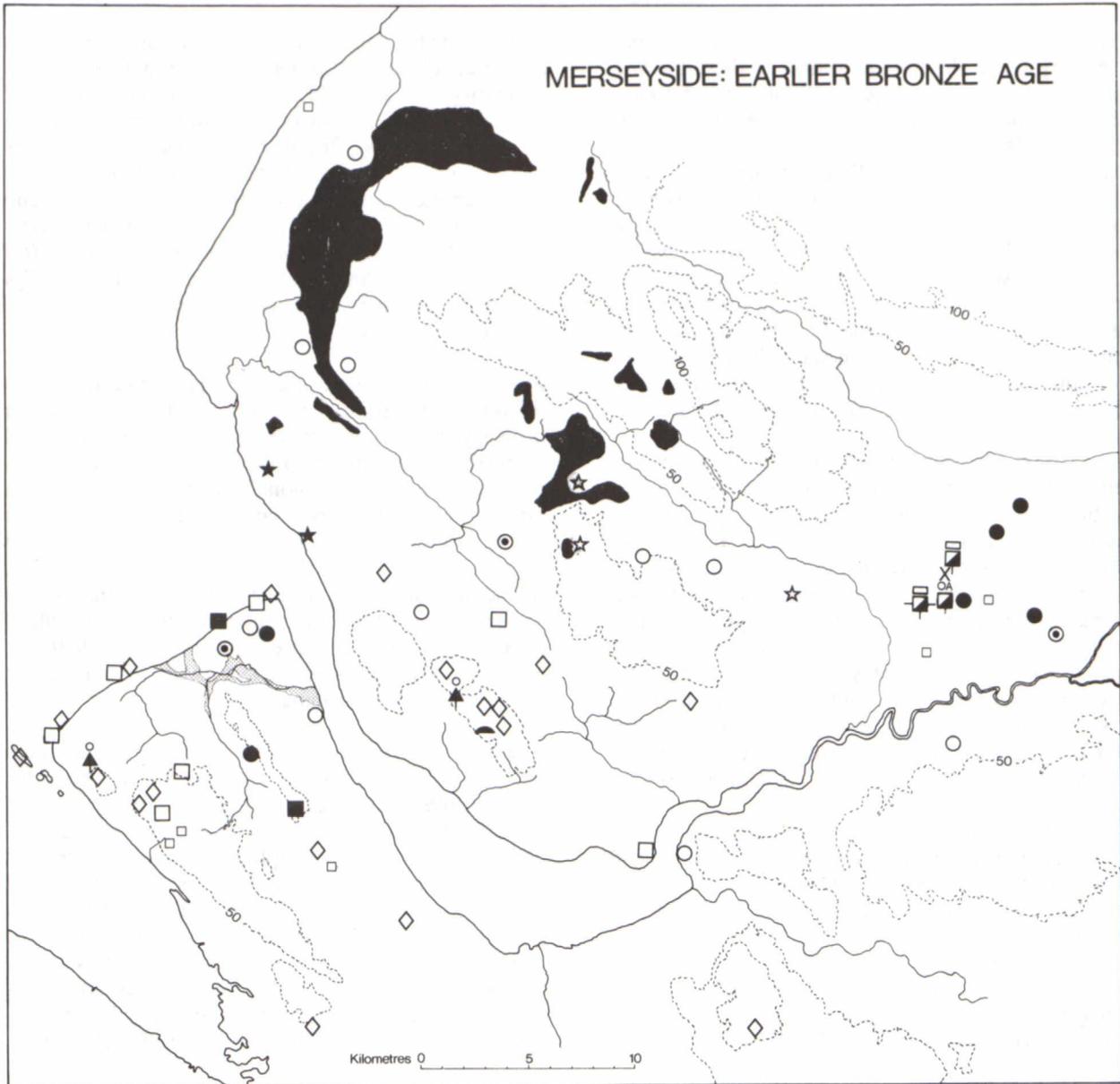
The Calderstones has no associated evidence, either cultural or palynological, to place it in the context of its landscape but its location in relation to presumably similar monuments to the west appears to argue that the Mersey had assumed an important role in cultural contacts by the end of the 3rd millennium BC. It had possibly held this position for much of the Neolithic, if the evidence for the movement of the Group vii stone axes along this artery is accepted (Cummins 1980). The degree to which this importance for the river may have influenced settlement in the area must, however, remain unknown for the moment.

The Calderstones may possibly represent a development in the nature of social and economic organisation in the area, which did not necessarily involve population increase and expansion, but may perhaps have had more to do with the position of the Mersey in the transmission of cultural ideas and even artefacts. It is suggested, however, that this tradition of small population and loose social cohesion may have persisted for some time, as at the end of the 2nd millennium BC, when Beaker material becomes prevalent in Britain (see below), it largely avoids this area and in fact much of the northwest lowlands. If Beaker material is regarded as a social 'cult' phenomenon associated with a particular group within native society, rather than as a representation of an influx of peoples (Burgess and Shennan 1976), then its absence might be seen as linked to the nature of social organisation. Therefore, the same hierarchical structure, the upper echelons of which would have appropriated the Beaker 'package', common elsewhere in Britain, may not have been prominent in this area towards the end of the Neolithic and for the early part of the Bronze Age.

## THE EARLIER BRONZE AGE - c. 2000-1000 BC

### Background

The separation of the Bronze Age from the late Neolithic is in some respects artificial, as the main cultural adoptions are restricted to only small parts of the archaeological record. Metal began to be introduced towards the end of the 3rd millennium BC (Burgess 1980) probably into a society that was already stratified to some extent, particularly as seen in some of the later public monuments such as the henges which continue into the Bronze Age. Continuity is also seen in certain types of late Neolithic pottery styles and elements of the flint repertoire.



KEY:

Flint Scatters:

- With scrapers
- Undiagnostic.
- Perforated axe-hammer.
- Other perforated stone implement.
- ◇ Barbed & tanged arrowhead.
- X Flint dagger.
- Bronze tool.
- Bronze weapon.

Calderstones.

- ▲ Calderstones.
- Barrow
- Cemetery with cremation
- Multiple burials
- cremation

- Cemetery with cremation
- Multiple burials
- cremation

associated pottery:

- Collared Urn
- A Accessory Vessel
- Unclassified

2nd Millenium Palynological Evidence:

- ☆ Episode(s) of temporary woodland reduction/regeneration.
- ★ As above, with cereals.
- ▨ Buried river channel.
- Peat

Figure 4: Map of earlier Bronze Age sites, Merseyside and adjacent areas.

Developments in the Bronze Age record included some new pottery styles, although a number of these showed development from native late Neolithic types. Foreign in development was the introduction of Beaker pottery which may have been associated with the earliest metalwork (Burgess 1980). This very fine pottery is found mainly in inhumation burials, although later it occurs alongside coarser Beaker types on many settlements. It was contemporary with native developments such as Food Vessel types, also found almost exclusively in burials, which in general share similar traits with those associated with Beakers, with a similar but slightly more confined distribution. A later native introduction was the collared urn, found in burials mainly, though also on some settlements.

From c. 1800 BC new flint and stone types were also added to the continuing elements of late Neolithic assemblages, the most useful in chronological terms being the barbed and tanged arrowhead (Green 1980, 1984) and the stone axe hammers and associated perforated implements (Roe 1979). Associated with these material developments, many trends present in the Neolithic became more elaborate. Evidence strengthens for a more hierarchical society, particularly concerned with the maintenance and exhibition of social prestige and status, seen especially in the deposition of rich metalwork in burials and hoards and the move towards individual rather than communal burial (Bradley 1984a).

The early Bronze Age also saw an expansion of landuse into upland areas where, in addition to the burials, field systems and associated settlements were located in areas such as southwest England, the north Yorks Moors and probably dating to this period, the Cumbrian uplands (Fowler 1983). By about 1,500 BC this expansion had in general terms ceased as many of these areas became too marginal to sustain (Tinsley 1981), with possible climatic deterioration following (Burgess 1974).

The end of the earlier Bronze Age can be generally defined by the disuse, by about the 13th century BC, of the main burial and ceremonial monuments, most types of pottery, flint and stone work and their replacement by new patterns of evidence in the archaeological record.

### Local evidence

Fieldwalking has produced eleven sites, which with a further five from other sources, have all been placed in a post-Mesolithic period, either on account of their non-blade affinities or their association with certain implement types, mainly arrowheads, scrapers or knives. It is possible though that up to almost half of these, the small undiagnostic scatters, could as easily be attributed to the Mesolithic period. These undiagnostic sites have been included on Figures 2 and 4, but are not considered further here.

Of the others, most are prone to the difficulty

mentioned above in that late Neolithic flint assemblages are often difficult to differentiate from those of the early Bronze Age. On Wirral, however, the inclusion of barbed and tanged arrowheads at Meols and, alongside scrapers, at New Brighton and Hoylake provides independent evidence suggesting that part of the period of occupation of these sites did lie in the 2nd millennium BC. The other sites, whose only distinguishing feature is the presence of scrapers (no site with more than three) or knives, are inland (Figs 2 and 3) and have already been mentioned in the context of the Neolithic period.

Palynological evidence suggests that between c. 1900 to 1600 BC the present northern coast of Wirral would probably have been covered by deciduous forest as witnessed by the Upper Forest Peat Beds (Kenna 1978, 30), which are still occasionally visible in eroded form on the beach today. Northeast of Leasowe Castle a midden consisting of ox bones and the remains of two deer have been dated to c. 1980 BC (Kenna 1978, 30). Inland, a rising water table, possibly as a consequence of rising sea level, probably led to a hinterland studded with swamps, fens and open water (Kenna 1979, 48) which would be expected to have had a restrictive effect on settlement and farming.

The paucity of recognisable sites for the 3rd millennium BC meant that settlement patterns for the Neolithic were reconstructed largely from the distribution of single stray finds of implements diagnostic of the period. This can also be attempted for the earlier 2nd millennium BC, in this case with the several types of perforated stone implements which in general date from about 1750-1250 BC (Smith 1979, 14). The most common type, the axe hammer, is suggested as having had a fairly close relationship to settled areas and as having perhaps been more intimately linked with areas of arable than were the Neolithic axes (Bradley 1978a, 13).

These implements are in fact not as widespread in the county as the 3rd millennium BC types, with Wirral in particular exhibiting a strong contrast between the pattern of the two periods (Fig. 4). Whether this is purely an accident of discovery or whether there were in fact areas of Wirral which lost their attractiveness for arable farming as they became more marginal in the 2nd millennium BC must await further research, although the palaeoenvironmental evidence mentioned above might support such a view.

To the east of the river the distribution of the perforated implements shows less of a contrast although, again, they are still fewer in number than the Neolithic types. The evidence around the estuary of the Alt in particular may hint at a degree of continuity in this area. A pollen site from the coast at Mount Pleasant, Sefton shows a clearance with cereals dated to c. 1960 BC (Innes and Tomlinson in prep.).

Further inland the palynological evidence suggests that

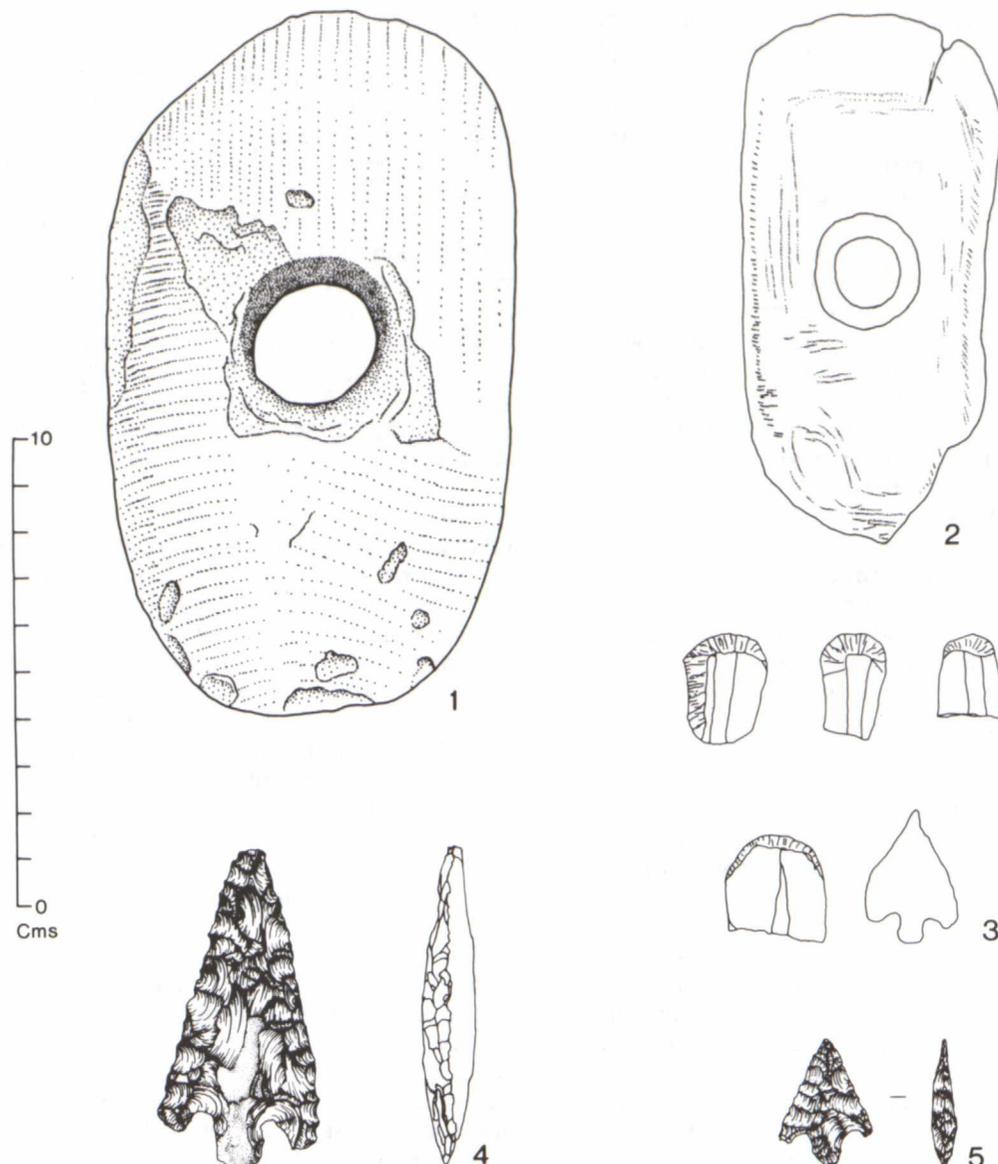


Figure 5: Earlier Bronze Age artefacts, Merseyside. 1. Perforated axe head, Wallasey (after Woods and Brown 1960). 2. Perforated adze head, Knowsley (see also photograph, Carter 1930a). 3. Scrapers and a barbed and tanged arrowhead, New Brighton (no scale) (after Roeder 1900). 4. Barbed and tanged arrowhead, Roby (see also photograph Carter 1930c). 5. Barbed and tanged arrowhead, West Derby (see also photograph, Carter 1930c).

land use in the 2nd millennium BC, although differing little in type from the 3rd millennium BC, may have increased slightly in its intensity and possibly in the regularity of activity although this is not reflected yet in the archaeological evidence in most areas. Thus small-scale disturbances to the woodland cover are noted at Simonswood Moss at c. 1840 BC and again c. 1440 BC and at Knowsley Park c. 1540 BC, where the overall woodland cover saw little change and soon regenerated. On the boulder clays to the south the period between c. 1,960 to 1670 BC shows relatively significant and sustained clearance before substantial regeneration (Innes and Tomlinson in prep.).

It is difficult to know how closely the metalwork distribution can be linked to the settlements and the nature of the landuse, as discussion of this element has not been common (Bradley 1985; 1989). The local material has already been the subject of two studies (Davey 1976; Davey and Foster 1975) which showed that typologically early Bronze Age artefacts were absent from the county, although two flat axes are known from Risley and Glazebrook just outside the county boundary (Davey and Foster 1975). A number of recent casual metal finds, all from Wirral, described more fully elsewhere (Cowell in prep. a), have come to light since these papers were published and one of

these includes another early Bronze Age flat axe from Oxton, Wirral. A number of early middle Bronze Age forms, including palstaves, a haft-flanged axe and two dirks/rapiers, which would probably have been contemporary with most of the other archaeological features outlined in this section, further strengthen the dual focus of the distribution (Fig. 4).

Centred near one of these metalwork concentrations, north of Warrington, lies a complex of 2nd millennium BC earthen barrow burials, mainly recorded in the 19th century, which have produced funerary pottery with cremations and some metalwork and an axehammer (Chitty 1981). Two barrows from this complex have recently been excavated near Winwick. One was a two-phase monument with multiple cremation burials. These were mostly unassociated with pottery vessels, except for one with a Food Vessel and two with Collared Urns and an accessory cup (Fig. 6). They were buried over a period of about 400 radiocarbon years between the early 18th and the 14th century BC with a break of about a century in the middle. The second barrow although having produced cinerary urns with cremations in the 19th century, on excavation produced only one pit with a partial pottery vessel of Beaker fabric and quite rare form (Freke and Holgate 1990). Possibly of some connection to this complex is a very fine flint knife of a type generally associated with Beaker contexts, and very rare in northern Britain, which also comes from the area of these burials (Cowell in prep. a).

Further to the west along the Mersey valley the southern edge of the sandstone plateau of Liverpool was another focus of burials continuing the late Neolithic tradition seen at the Calderstones. Here the burial site at Wavertree, about a mile to the north of the latter site, produced eight urns only two of which, both collared urns, have survived (Fig. 7). These were associated with burnt bones and were in an uncertain relationship to a line of fourteen small upright stones and three sandstone cremation platforms (Smith 1868).

In addition the Calderstones itself may have continued in use into the 2nd millennium BC. Several stones have cup and ring markings on them which are sometimes associated with the art on passage graves, but also occur quite frequently on rock outcrops and some cists, and which appear likely to belong to the first half of the 2nd millennium BC (Morris 1989). Forde-Johnston (1957) also places the feet markings on the stones in a general Bronze Age western seaboard context, implying that the wide ranging contacts of the later 3rd millennium BC continued well into the second. In about 1765, when the first evidence is available for the dismantling of the monument, whilst digging about the stones '... urns made of the coarsest clay containing human dust and bones ..' were found (Baines 1825, 698). This suggests secondary inurned cremations in the mound. Another source mentions the mound of sand being destroyed for building material a little later when 'a fine sepulchral urn rudely ornamented outside' was

found within it (Herdman 1896, 7).

It would seem, therefore, that both the mound and possibly the chamber remained a focus for activity during the early Bronze Age and some of that activity was associated with burial. This could be a context for the other features mentioned in the 1568 dispute (Stewart-Brown 1911). These consist of a large mound, the Pyckeloo or Pikelaw hill, which is shown on the map as being at least twice as big as that of the Calderstones, with a standing stone at either side of it. The distance given in the dispute between these two stones is the equivalent of 32 yards, implying a mound width of about 25-30 yards. About 128 yards to the north east lay another standing stone 'the Rodger stone' which itself lay about 364 yards from the Calderstones.

The exact site of Pikelaw hill has never been found although its general location can be worked out from the document. The place name and the proximity to the Calderstones might suggest that this was another burial mound in the vicinity. That stones were not mentioned in or on the monument may imply a non-chambered mound, and if connected with the standing stones then the most likely date might be the Bronze Age. The mound might of course perhaps have been more intact in 1568 thus hiding any stone element within, and destroyed quite quickly thereafter so that by the late 18th and 19th centuries, when documentary sources become more common, its features had long since passed out of memory.

In the absence of actually locating the site itself, the evidence is rather too imprecise to be sure of the nature and contemporaneity of the mound and the standing stones, and the best that can be said is that none of these features need be out of place in a Bronze Age context. There could also obviously have been other, later possible functions for it, which had either been forgotten by 1568 or did not need to be mentioned in the depositions accompanying the dispute.

On Wirral less evidence of this type exists. On the high sandstone ridge overlooking the Dee at West Kirby 'several' urns with cremations, one inverted (Fig. 7), were found (Mayer 1849, 153). More recently an inverted urn apparently not associated with a burial, was found at Middle Eye just off the coast (Petch 1976), and may possibly represent part of a further burial area of this period.

River valley distributions of barrows similar to that east of the Mersey have provided evidence that the living areas were within the general barrow distribution, sometimes set in discrete areas slightly away from the burials (Green 1974; Woodward 1978). Of the known burials locally, only around the Winwick examples is fieldwalking possible but this has so far provided little evidence of settlement (Cowell in prep. b).

One link with the burials may be seen in the distribution of the barbed and tanged arrowheads (Fig.

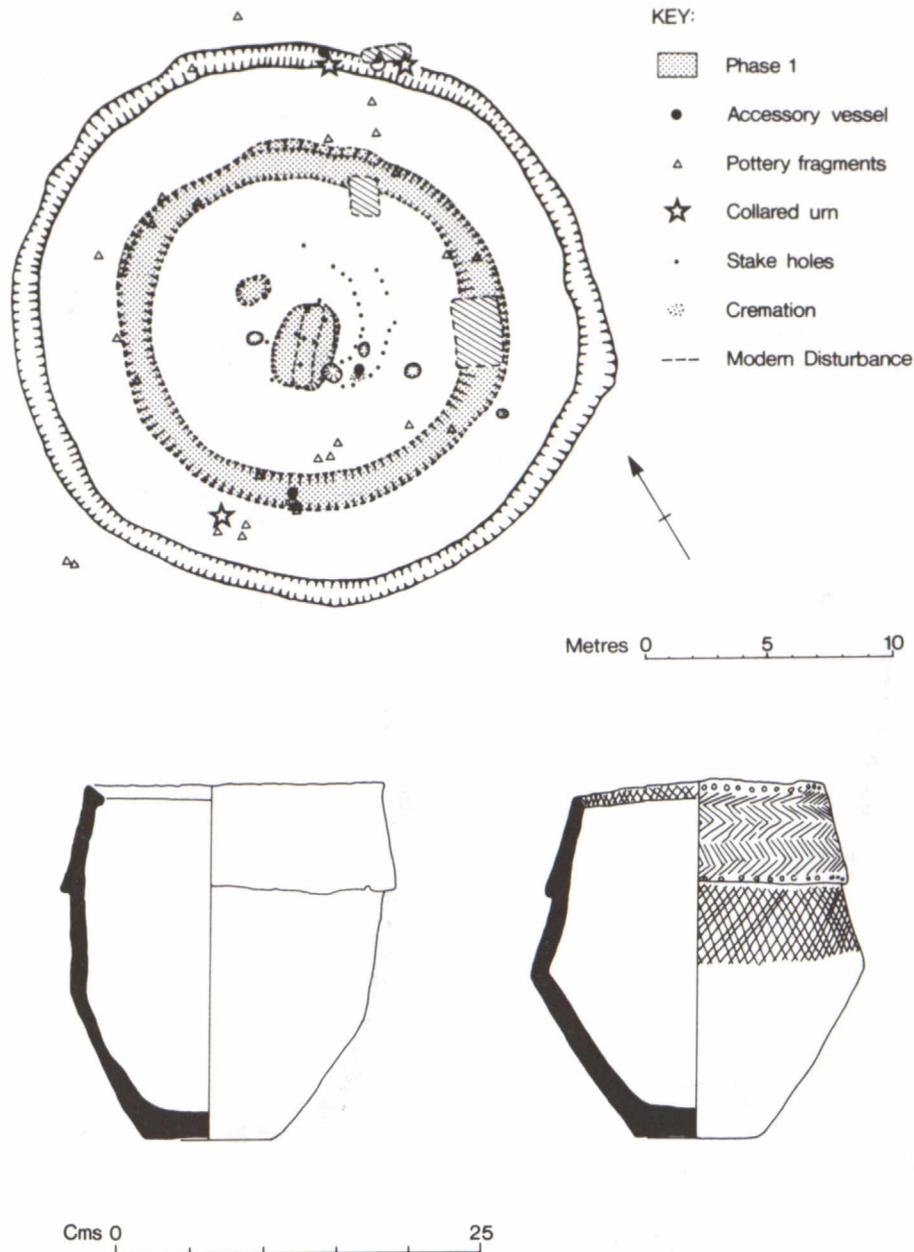


Figure 6: Composite plan of the Winwick barrow and selected pottery (after Freke and Holgate 1990).

4). This is particularly noticeable around the two sites on the sandstone ridge of Liverpool. One arrowhead is known from a probable burial context at Wavertree along with a flint knife (Smith 1868), but it seems unlikely that all the arrowheads in this area are so associated. It would seem that hunting may be a better context for such a distribution. Although this coincides with the built-up area of Liverpool, where casual finds are perhaps more likely than in more rural areas, such concentrations do not appear in similarly urbanised areas such as St Helens or Wallasey/Birkenhead nor are distinctive Neolithic items common from the Liverpool area (Fig. 2).

Barbed and tanged arrowheads are not as numerous on Wirral but their greatest concentration is around the area of the West Kirby burial site; the elevated areas to the south overlooking the Dee estuary, and along the present north coast, particularly in the vicinity of the forest peat beds at Meols (Shone 1911, 29 and Fig. 46) midway between the two known coastal settlement sites, an area which would probably have been wooded in the earlier part of the millennium (Kenna 1978, 30).

The occurrence of a barbed and tanged arrowhead at an inland site at Poulton-cum-Spital recorded by a rather indistinct drawing (Cox 1897, plate XXXI) may

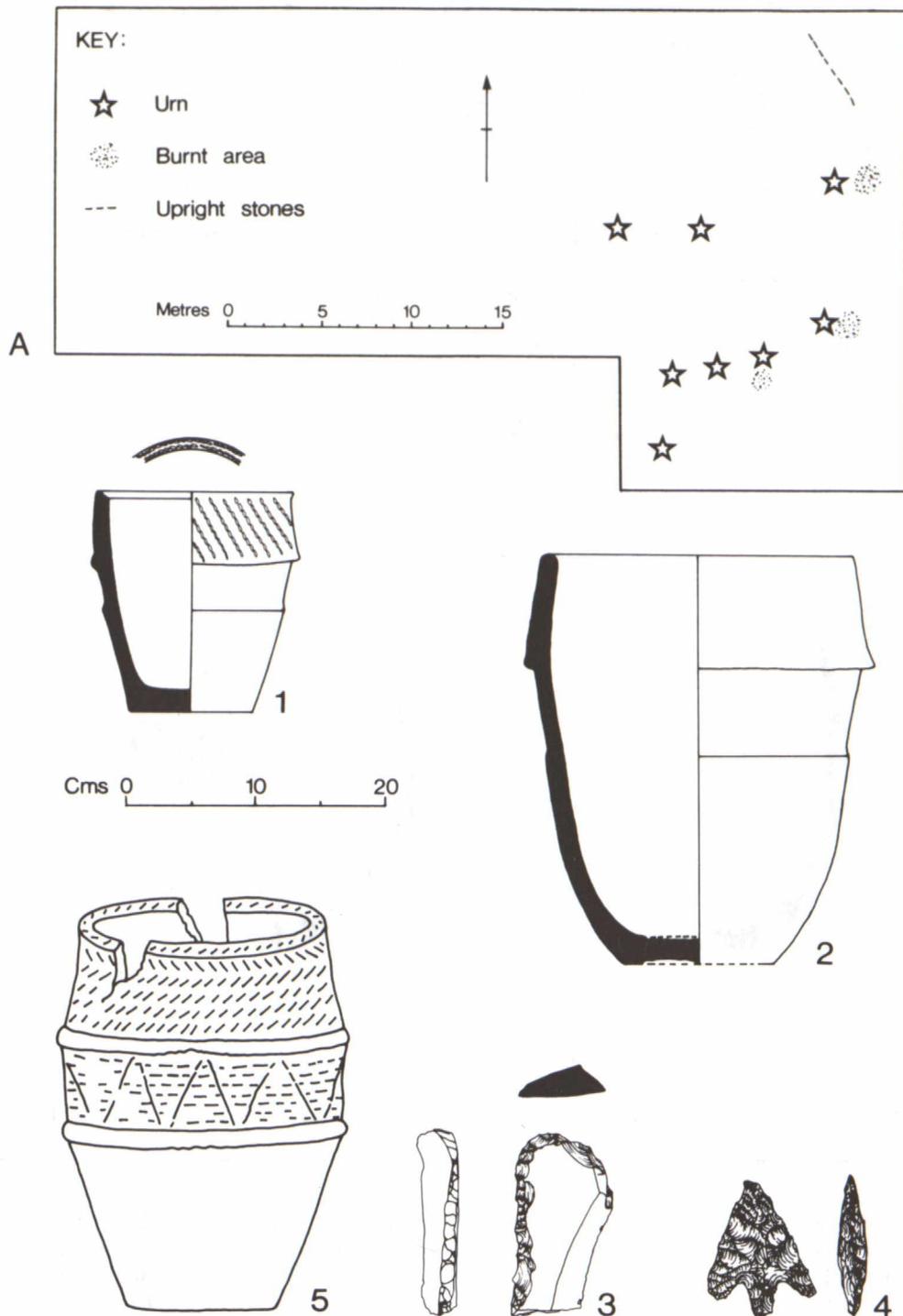


Figure 7: Earlier Bronze Age burials, Merseyside. A. Plan of Wavertree cremation cemetery (after Smith 1868). 1. and 2. Urns from Wavertree (after Longworth 1984). 3. Flint knife and 4. Flint barbed and tanged arrowhead from the vicinity of the Wavertree burials. 5. Cordoned urn from West Kirby (after Mayer 1849).

signify more than a single casual loss as a number of 'flints and chippings' were also found in a lens of sand underneath boulder clay. Some of the pieces shown appear to be natural (Lomas 1900, Plate X, 1) but rather indefinable settlement activity may have been taking place here at least partly within the early 2nd millennium BC.

### Regional evidence

Evidence for settlement is similarly poorly represented across the region. Western Cumbria again figures the most strongly with a number of sites known from flint scatters (Cherry and Cherry 1984). Elsewhere only at Pilling on the Fylde has a domestic site of this period been excavated producing a coarse type of pottery, some decorated, scrapers, barbed and tanged arrowheads and an amber bead (Edwards 1978a; 1978b; 1978c). The site lies on the edge of a peat bog from which have come a number of bronze tools and weapons (Edwards 1978c, 16 and Fig. 2), suggesting an important focus of rich settlement. Settlements with a beaker element may also be present in an upland location at Castleshaw, Greater Manchester (Thompson 1974) and in west Cumbria (Cherry 1969).

The axe hammer distribution in the region shows a degree of continuity in those core areas where 3rd millennium BC axes are also present in numbers, except in Cheshire where the distribution shifts to the Pennine fringes from the central area of the county. Some limited expansion of 2nd millennium BC types is suggested by the sole occurrence of axe hammers in a few places in north Lancashire such as the Kent estuary (Howard-Davis *et al.* 1988). There is furthermore a general correspondence of distribution across the region between the axe hammers, stone axes and the early and middle Bronze Age metal types, with the latter being particularly strong in the Fylde area and in the southern coastal Lake district (Davey 1976). Most are single finds as opposed to hoards, the latter only being represented by a couple of sites in the south of the region in Cheshire (Longley 1987; Turner 1986).

The evidence for burials is far stronger than that of settlement across the region with particular concentrations along the western Pennine slopes and the Cumbrian and north Welsh uplands. Their distribution does spread into the lowlands with a noticeable concentration in eastern Cheshire and with a slighter penetration into central Lancashire (Cowell in prep. d). They range from earthen round barrows, particularly strong in Cheshire, to stone cairns and various types of 'ring' monuments based on banks and circles of stone and/or earth, and are particularly common in the Pennines (Barnes 1982), although the Bleasdale timber circle (Dawkins 1901) on the eastern margins of the Fylde, shares a number of common structural and depositional features with the Pennine ring works.

Most of the burial monuments in the region, allowing for the poorly recorded nature of many of them, appear to be associated with collared urn cremations often with multiple burials in the same monument. A small number does have food vessel inhumation associations, with Beaker influence being restricted to one site in Cheshire (Rowley 1977) and three on the moorland fringes to the east (Cowell in prep. d).

### Discussion

The first qualification about the settlement evidence is that there are few ways in which the flint material of this period can be separated from that of the late Neolithic. This not only makes it difficult to date particular assemblages with relative precision but also fails to allow for recognition of the presence or absence of continuity of artefactual and site evidence from the earlier period. Additionally, the small size of the known sites potentially of this period, and the lack of large well stratified excavated assemblages from Merseyside makes it difficult to be sure if some of these sites may not even belong exclusively to an earlier phase of the Neolithic. Bearing these reservations in mind a few tentative comments are offered below as a working theory to be tested by future research.

Some sites, particularly on the present north coast of Wirral, in functional and locational terms, would fulfil criteria recognised elsewhere for settlements of the late Neolithic/early Bronze Age and some of these, such as New Brighton and Hoylake do show some reasonably certain links with the 2nd millennium BC in the form of the barbed and tanged arrowheads. Superficially they appear similar, on a smaller scale, in their assemblages ie mixing of arrowheads and domestic tools, particularly scrapers, to those noted in the Pennine foothills, where seasonal activities based on hunting was suggested (Barnes 1982). Seasonal land use is also argued for in similar environments to Wirral such as the Fens of East Anglia (Pryor 1976) and other coastal areas (Bradley 1978b) during the late Neolithic and early Bronze Age, with the former example providing good evidence for a reliance on summer grazing on the fenlands.

The inferred waterlogging across areas of the coast and immediate hinterland in Wirral during the early Bronze Age would suggest that these sites also might be more likely to have been occupied during the drier summer months, and, if the evidence can be trusted, the assemblages suggest that specialised tasks may have been taking place linked to hunting and possibly grazing.

That other areas of Wirral were subject to seasonal settlement in the early 2nd millennium BC may also be argued for on other grounds. The lack of perforated implements may suggest decreased arable activity in the area, which may correlate with a lack of identifiable surface sites during fieldwalking, although this may yet turn out to be an identification problem due more to

a lack of comparative flint assemblages from excavated Bronze Age contexts in the region.

There is also an increase in the number of 2nd millennium BC arrowheads over 3rd millennium BC types in the peninsula. This phenomenon is seen on a national scale (Bradley 1978b) and is usually interpreted as being associated with an increased reliance on hunting. The pattern on Wirral is not as clear as it is to the east of the Mersey where overlapping burial and arrowhead distribution is noticeable across the sandstone ridge on which Liverpool stands, but if a largely economic association lies behind their distribution it suggests that hunting may have been a feature of the areas where the burials are known.

The metalwork is difficult to understand within a general socio-economic context as there is little agreement on its place within Bronze Age society. Some local artefacts had acted as depositional material in early Bronze Age burials, but this includes only a few items. A feature of the rest of the metalwork is that it is represented by single items rather than hoards which is also common for much of northwestern England.

It would seem that visibility would have been an important part of the function of the barrows and the palynological evidence from the Pennines tends to confirm this view (Tyson 1972). The argument is also put forward that these barrows would have been important to a society or a section of it, that was based on mobile pastoralism (Fleming 1971). The areas where the barrows are located in Merseyside could therefore be seen as the equivalent in economic and social terms of the upland, downland and river valley distributions of barrows seen in southern and eastern England. Thus seasonal pastoralism may have been taking place locally across areas which include large tracts of at least seasonally marginal land, which was also of importance in ritual and religious terms. The cemeteries at the east end of the Mersey valley might also provide a context for the relatively sustained clearance seen at Burtonwood in the first half of the 2nd millennium BC and the pollen evidence from the Winwick barrow suggests a cleared landscape with pastoral indicators in the vicinity (Freke and Holgate 1990).

There is as yet no palynological evidence dated to the 2nd millennium BC on Wirral but the archaeological evidence also suggests a pattern less dependent on cereal farming. The general pattern visible elsewhere in the millennium (Bradley and Hodder 1979) does not seem so clear cut in the Merseyside area.

At the moment the evidence would suggest that most parts of the area were more conducive to seasonal activity, possibly associated with mobile pastoralism. This model would see Merseyside as part of a larger economic system which necessitated a degree of mobility and therefore settlement core areas might perhaps be looked for elsewhere. The Irwell basin around the Manchester embayment may be such a focus as it forms

the greatest concentration of perforated implements in the immediate area (Cowell in prep. d).

The Calderstones, with its continental influences in some of the carvings, would suggest that the Mersey was still an important arterial feature of the Bronze Age landscape. Coastal areas such as at Formby, where cereal associated clearance is noted at the beginning of the 2nd millennium BC, as well as some perforated stone implements, also suggests that this model is not exclusive and small pockets of settled farming may have existed alongside this mobile system, perhaps represented by a different group or class of people in Bronze Age society, although hierarchies seen in other parts of the country do not seem so well developed locally.

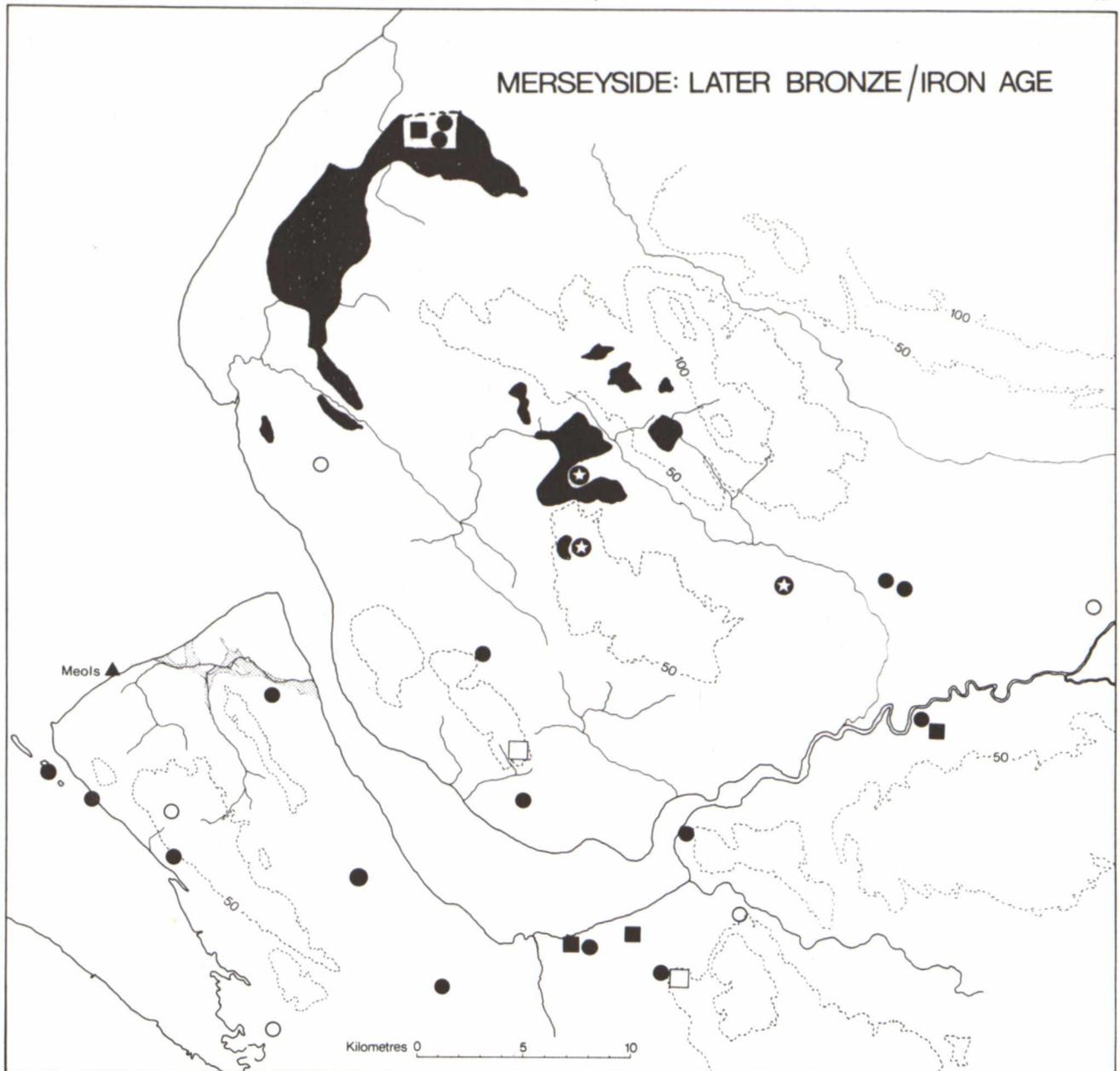
## LATER BRONZE AGE/IRON AGE 1200 BC - AD 1

### Background

Nationally, after c. 1250 BC, a substantial hiatus appears as early Bronze Age type burials and associated ceremonial ritual sites largely cease and new metalwork types take over, their distribution showing a bias towards wetland areas and rivers (Bradley 1984b). This is seen as occurring at or shortly before a time of worsening climate which is suggested as being a possible cause for the changes (Burgess 1974). During the 9th century BC in the north, the onset of the late Bronze Age is marked in metalworking terms by the technological revolution of lead bronze and the large-scale production of socketed axes. In southern England, and somewhat later in northeastern England, types of plain and decorated bucket and barrel urns, present in some areas during the earlier period, now become dominant and are found quite extensively for the first time on a range of settlement types including defended hilltop and lowland sites (Barrett and Bradley 1980). There is no convincing evidence that flint and stonework continued to be a feature of the technology of the period.

During the 7th century BC a number of technological developments occurred in the metalwork and pottery, marking the onset of the Iron Age, which in some areas is matched by a large increase in the settlement archaeology. In the south and east particularly, new types of metalwork of continental inspiration are introduced including many now of iron. This continental inspiration in the metalwork is evident at intervals throughout the period. Regional styles of pottery also develop strongly, while late in the period localised parts of these same areas in the south and east fall into the orbit of Romanised spheres of influence in trade and burials.

The Iron Age also sees an intensification of settlement with a general trend from single farmstead to nucleated villages with field systems in favoured areas. Specialised



KEY:

- Enclosure
- Hilltop enclosure.
- Bronze tool.
- Bronze weapon.

1st Millenium Palynological Evidence:

- ★ Consistent woodland reduction episodes, with cereals.
- ▨ Buried river channel.
- Peat

Figure 8: Map of later Bronze Age/Iron Age sites, Merseyside and adjacent areas.

sites, particularly hillforts, are also a feature of the period although in northern areas the trend can be seen to have had a late Bronze Age background. Outside the core areas of the south and east many simple late Bronze Age types of pottery continue into the second half of the millennium, while other areas have little evidence of pottery use at all during the Iron Age (Cunliffe 1974).

### Local evidence

In the northwest generally there is little that can be safely assigned to either of the above two cultural periods on archaeological grounds and therefore the first millennium BC is treated below as a whole, within which certain general trends may be outlined but not too accurately dated. The archaeological evidence in the county for this period after c. 1250 BC is provided mainly by bronze metalwork which includes some of the typologically later middle Bronze Age as well as the late Bronze Age types (Davey 1976). There are no pottery types dated to this period in the region and neither is there a recognised general tradition of undifferentiated early or middle Bronze Age urns which could have continued. The only known pottery of the early period, the funerary associated urns, cannot be dated later than about the 13th century BC (see below page 52).

The number of metal finds is small and rather too scattered to detect any real pattern. They consist mainly of tools, socketed axes and palstaves, although three spearheads from the line of the Manchester Ship Canal are noteworthy (Davey and Foster 1975). These, along with the tools from the Canal, are mainly later middle Bronze Age types and provide the main extension to the earlier Bronze Age metal distribution (Fig. 8). The metalwork found to the north of the river is mainly of late Bronze Age type and therefore probably dates from around the second quarter of the first millennium BC. None is found in contexts that could be defined as settlements and, with a couple of possible exceptions, none of the settlement types existing elsewhere that might be morphologically attributed to the first millennium BC is known locally (see below).

In Liverpool, at Woolton, a site marked Camp Hill and recorded as a circular enclosure on Yates and Perry's map of 1768, has been interpreted as a defended hilltop settlement (Forde-Johnston 1976, 280-1). It marks the northern end of the distribution of a number of such sites stretching along the central Cheshire Ridge which are assigned a prehistoric date and some do have evidence that dates them to the second half of the millennium (see page 53). Apart from its location there is nothing other than some ambiguous undated drystone walling excavated in the 1950s to suggest its form or date (Forde-Johnston 1976, 280-1). Subsequent landscaping of the site for parkland has obscured easy recognition of most of the perimeter earthworks. Searches of the flower beds that now cover part of the

approximate site area have failed to produce anything diagnostic.

Another type of site that by wider analogy may belong to the second half of this period is represented by the class of oval or occasionally subrectangular cropmarks, often found in river valleys and on low outcrops representing single enclosed farmsteads often without trace of field systems (Higham 1986). On Wirral an oval cropmark site at Thurstaston may fit into this context, although Roman pottery has also been found from fieldwalking in its vicinity (Philpott this vol.). A triple enclosure site at Thornton in Sefton which has parallels in Staffordshire and Warwickshire (Harding 1976) may also perhaps be linked to this period.

One final possibility for a settlement of this date may be represented by the site at Meols, Wirral which is treated in more detail elsewhere (Philpott this vol.). The evidence does, however, suggest that the site that existed in the Roman period may have had its origins in the Iron Age with the discovery of six coins of the late 1st millennium, and although the contemporaneity of some of the coins and the settlement has been questioned (Chitty and Warhurst 1977, 35) it would now seem that the link between the two can be regarded as certain (Warhurst 1982).

The paradox is that during this millennium the dated pollen profiles in the county show a departure from the earlier pattern. Only a few of these profiles include dates relevant to this period at the moment, but at these sites the palynological evidence suggests a lack of activity between the later part of the 2nd and the early 1st millennium BC, with apparently undisturbed, thick woodland as the dominant vegetation.

The Knowsley Park diagram, however, appears to mark a period of renewed activity at about 910 BC, which is also seen at other sites such as at Simonswood Moss c. 780 BC and at Burtonwood Moss c. 640 BC (end of clearance phase). Each of the clearings follow the previous pattern with ensuing long periods of woodland regeneration but they do appear to mark a difference in that at the first two sites the 1st millennium clearings are the most intense within their diagrams and at all three arable farming appears to have played a significant role (Innes and Tomlinson in prep.).

This pattern continued on an even more intensive basis into what is chronologically the Iron Age. The most intensive clearance is seen in the Simonswood Moss diagram and includes arable farming dated c. 430 BC with a similar episode at Burtonwood further south which although not absolutely dated, occurred after a short regeneration phase which began c. 640 BC (Innes and Tomlinson in prep.). These episodes appear to be reasonably discrete in geographical and chronological terms with woodland still dominant, although in several diagrams, eg Simonswood and Parr Moss, the relative proportion of woodland does appear to have decreased from the 3rd millennium. One reason for this increased

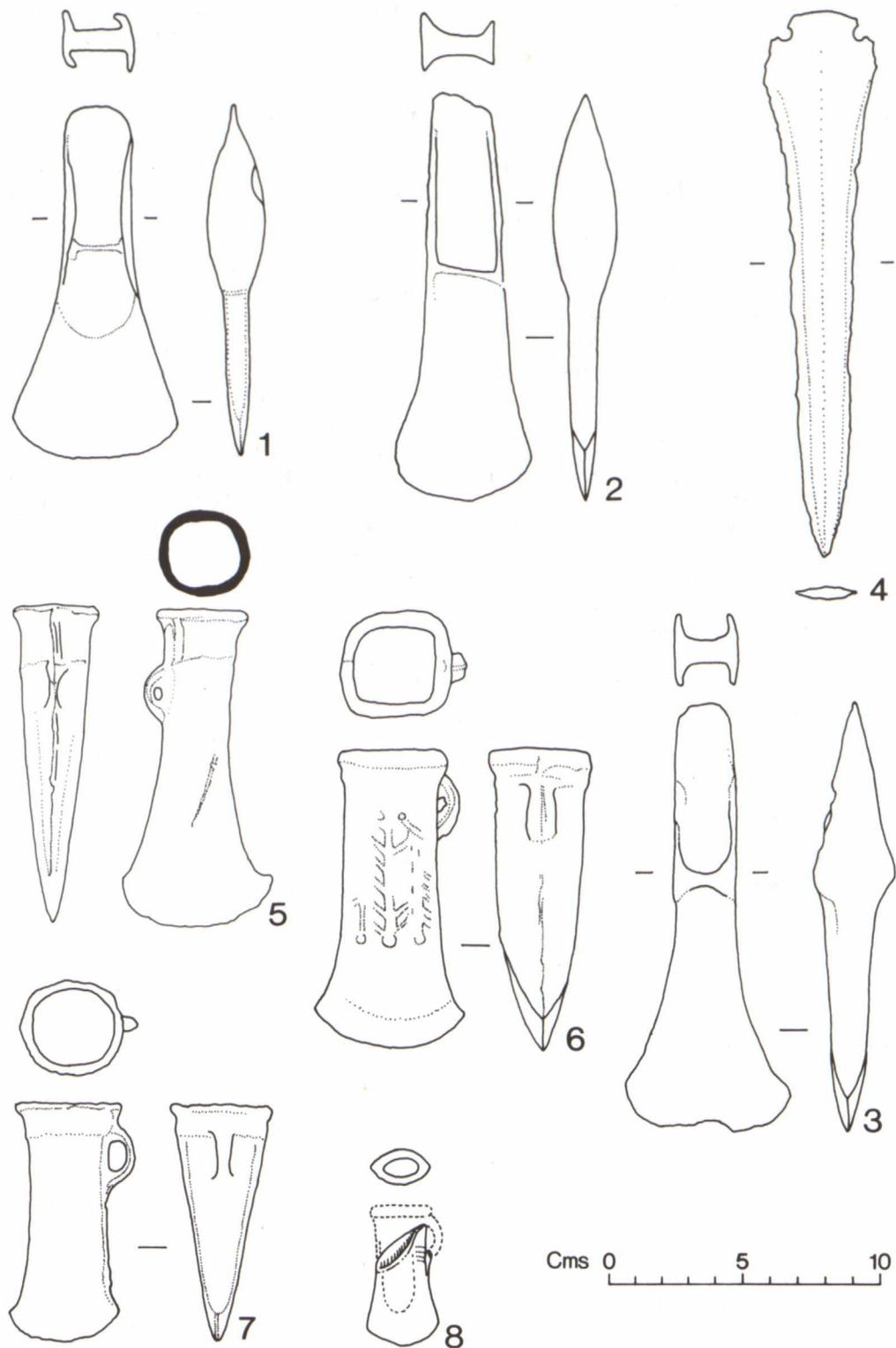


Figure 9: Bronze Age metalwork, Merseyside and adjacent areas. 1. Haft-flanged axe, Liscard, Wallasey. 2. Palstave, Winwick, Cheshire. 3. Palstave, Birkenhead. 4. Rapier, Higher Bebington. 5. Socketed axe, Knotty Ash, Liverpool. 6. Socketed axe, Winwick, Cheshire. 7. Socketed axe, Speke, Liverpool. 8. Socketed axe, Hilbre Middle Eye, West Kirby (after Davey and Foster 1975).

impact on the vegetation may be climatic deterioration, which is identified palynologically (Innes and Tomlinson this vol.) and interpreted archaeologically (Davey 1976) during the first millennium BC.

### Regional evidence

Northwestern England has no ceramic styles datable to the period after the final Urns and Food Vessels, which at the moment accord reasonably well with the wider pattern, with dates of  $1440 \pm 80$  BC at Winwick (Freke and Holgate 1990) and  $1370 \pm 80$  BC at Ribchester (A. Olivier pers. comm.). This situation appears to last until the appearance of Roman pottery in the area although a late form of pottery, known as Very Coarse Pottery (VCP), has been located at two sites in the region (see below page 53).

The archaeology of the following period in the northwest becomes very sparse with the end of urn burials – with or without barrows. In northeast England this form of burial continues, although in an apparently less important way, through to the middle centuries of the millennium and the beginnings of the Iron Age (Manby 1980, 319). No such evidence exists for the west of the Pennines, except at Bromsfield, Shropshire (Stanford 1982) and Ryton on Dunsmore, Warwickshire (Bateman 1977), where middle Bronze Age Deverel-Rimbury burial traditions appear to have continued into the 9th and 8th centuries BC on radiocarbon evidence. A late Bronze Age burial with sword and other types of metalwork is also known from Cumbria (Annable 1987).

West of the Pennines the metalwork forms the basic evidence for the earlier part of the first millennium BC. There is an increase in the number of finds of this period in the Low Furness area while the north Fylde continued to be important and after about c. 800 BC the Ribble and Mersey-Irwell basin saw a greater rate of metalwork deposition (Davey 1976). In north Cheshire this is largely as a result of the construction of the Manchester Ship canal, although Longley (1987) argues that this pattern is still a realistic, unbiased archaeological one.

Settlement types of the middle Bronze Age, current in the south and based on groups of unenclosed hut platforms often set in field systems, also appear east of the Pennines particularly in the northeast (Jobey 1980, 372), as do higher status enclosed sites such as Thwing (Manby 1979). A slightly later development in this area appears to be that of smaller settlements, defended either by palisades or by single or multiple banked enclosures, sometimes revealing a chronological progression within the same site. A distinction may be made between these, some of which are found on hill tops or spurs as well as on low ground, and similar defended sites, sometimes with the same typological progression from palisade to banked rampart but of much larger proportions and often on hill tops. Some

of these latter appear to have begun life at, or shortly after the turn of the millennium. Most of these types continued into the later Iron Age although there appears to be a slight peak of defensive building around the 6th and 5th centuries BC (Annable 1987).

West of the Pennines there is little excavated evidence to compare with that of the northeast. There are morphological similarities with many classes of site seen there but no firm evidence that they are all prehistoric, and indeed, those that have received attention have only so far produced Roman material (see below). The most easily assigned to the prehistoric period are a number of defended enclosures, known from throughout the area, which exhibit different characteristics that may reflect differences in function and status. A number are defined primarily by being greater than about three acres in area and use either the natural defences of a hill or partial or complete rampart defences. Some, such as Skelmore Heads, Cumbria, Warton Crag and Planeswood, both Lancashire, or Eddisbury, Cheshire (Forde-Johnston 1965) may on account of their location, form and size be regarded as possible tribal centres. A number of these have palisade defences preceding the rampart phases.

The dating for these sites is poor but late Bronze Age metalwork is known from a number of defended hill tops, although not directly associated with the earthwork defences. These include a hoard at Planeswood (Longworth 1967) while at Beeston Castle, Cheshire, there was evidence of metalworking on the hill (Hough 1982) and further afield metalworking is found at Mam Tor, Derbyshire (Coombs 1979). A number of the Cheshire sites also have morphological traits found in the Welsh Marches during the middle Iron Age period, while radiocarbon dates for the defended phase at Beeston Castle begin in the 5th century BC (Hough 1982).

Other sites are known from the south of the region (Forde-Johnston 1965). These are characterised by being smaller and on lower ground, often on small spurs but also defended by ditched and or ramparted enclosures and sometimes they include, or are adjacent to, areas of peat. Burton Point in Wirral and the recently excavated site at Woolden Hall Farm, Glazebrook (Fig. 2) which has produced VCP of the second half of the millennium (Nevell 1989), are two examples.

A number of primarily non-defensive settlement types found on hills and lower land, both curvilinear and rectilinear in form, are found in the northern part of the region around the Solway Plain but are so far thought to be Roman (Higham 1986), although the excavated evidence is very slight.

Evidence for a worsening of the climate or a rise in ground water levels may be seen with the wooden trackways at Kates Pad near Pilling, associated with a recurrence phase and dated to c. 945 BC (Edwards

1978d). The same evidence for climatic deterioration at this time is seen slightly later in the pollen record from Chat Moss in the Mersey valley dated c. 700 BC (Innes and Tomlinson this vol.). In the palynological record the coastal sites of Cumbria show little sign of human activity through most of this period and in the rest of the region the pollen diagrams are not suitably dated to show how widespread this pattern may have been (Howard-Davis *et al.* 1988).

## Discussion

The reasonably distinct division into early, middle, and late Bronze Age, defined primarily by the metalwork, is not as apparent in the north and particularly in the northwest as it is elsewhere. Here, the end of recognisable early Bronze Age (non-metal) artefacts and field monuments, from about the 13th century BC on the present evidence, is followed by something of a void. Middle Bronze Age metalwork types, which include the local palstaves and dirks, continue in the north until the 8th century BC, when lead bronze, utilised for several centuries elsewhere in Britain, became common (Burgess 1968). The local types are therefore potentially limited in their usefulness as chronological indicators of activity in the area.

In northeast England and the north Midlands there is some evidence to suggest a degree of continuity of settlements and burials from the middle Bronze Age into the earlier part of the first millennium BC, some of which in the northeast were developed even further in the Iron Age. In the northwest in general and Merseyside in particular no such pattern can be observed. The upland areas peripheral to the county do, however, show some trends, in the association of hill settlements and metalwork, that higher status sites were one feature of the later Bronze Age landscape. The paucity of evidence though, either from excavated or morphologically identified sites, and from pottery or metalwork associations, throws little light on the situation in the lowlands at this time. Although slightly later in date, the identification of a rectangular ditched enclosure with round houses at Great Woollen, when allied to the dated evidence from Beeston Castle, is of much interest in this respect and shows a lowland counterpart to the upland sites current in the middle centuries of the millennium.

Paradoxically the palynological evidence from the county appears to show for the first time relatively intensive clearance episodes suggestive of mixed farming. This is seen on the lighter sandy soils in the north, an area which has not yet produced even metalwork of this period. The radiocarbon dated phases of woodland reduction do appear to be associated with farming and therefore sites may be expected in the area, with proximity to the wetlands possibly being a key locational factor. This may have required either land colonisation or perhaps a greater degree of intensification possibly as a reflection of worsening climate. This association

with wetlands, noted throughout the country at this time, is a key feature of the later Bronze Age and generally involves high status sites with metalwork. It may be best represented at the moment in this region by the north Fylde.

Relative intensification and mixed farming is also seen at the pollen sampling site at Burtonwood. This lies adjacent to those areas of previously marginal land, as suggested by the distribution of early Bronze Age burials. It might be suggested, however, that the focus of settlement and arable farming could have been concentrated in the river valleys, with the main interest shifting away from the adjoining higher lands where the barrows were previously located. This may be seen around Warrington for instance, where most of the early metal evidence was associated with burials on the highest terrace and therefore ambiguous in settlement terms. The location of the Woollen Hall Farm site on lower land in the valley in the Iron Age may therefore represent the first signs of this pattern being recognised.

The finds of hoards in the main rivers of the region (Davey and Foster 1975) and the general association of single metalwork finds with rivers at this date is another common feature of the period generally, although there is no comparison between the richest areas such as the lower Thames or East Anglia (Bradley 1984a) and the northwest. Davey (1976, 12) points to the increasing importance of the upper reaches of the main rivers in the region during this period under worsening climate and improved abilities to clear woodland. The lower reaches of the Mersey and the coastal region of Low Furness and possibly the Fylde do not, however, appear to have declined to any noticeable degree from the evidence of the metalwork finds. This may suggest that the new element in the metal distribution pattern could represent either expansion, rather than relocation of settlement, or possibly different kinds of activity perhaps related to new forms of ritual or burial associated with the rivers flowing from the upland fringe. Such an alternative may have some link in the region with the emergence of the larger defended hilltop sites, often with metalwork, and the activity represented by the river bronzes that are present in approximately the same areas from the late Bronze Age onwards. Much of this remains conjectural, but the model does at least suggest certain areas that would repay more research with the possibility that some relatively rich sites may lie hidden in wetland and river environments that do not lend themselves yet to identification by most survey techniques.

Perhaps the most important site of this later part of the period and which does not fit into any of the foregoing pattern, possibly because of its specialist nature, is at Meols, Wirral. Even though the evidence is slight, the far reaching contacts expressed in the coins may point to a status similar to those sites in southern England which became important trading centres through good harbours and the links with the Romanised world of Europe prior to the Roman Conquest of England

(Cunliffe 1974). In the case of Meols, though, this influence may have been felt primarily through contact with the western Atlantic seaboard of Europe, a pattern which is visible through the Roman and post-Roman periods (Philpott this vol.).

## CONCLUSIONS

Any study of the prehistory of the county inevitably reveals the gaps in our understanding rather than allowing a coherent interpretation of the evidence. Although it is more tempting to list what needs to be done to rectify the situation rather than to try to outline a structure of development, this section does attempt the latter, using a record which is incomplete and patchy, as a basis against which future questions can be framed.

There are many avenues of future research, but two problems applicable to all parts of the prehistoric period need particular attention. One is the basic geographic lack of sites which needs to be amended by programmes of survey. The second is the lack of a technological framework, resting on a good range of excavated and radiocarbon dated sites, to act as an important means of dating sites and artefacts.

As it stands at the moment, a degree of patterning can be observed in the archaeological evidence which at some points is compatible with interpretation of the palynological evidence. This latter evidence supported as it is by a substantial and internally coherent series of radiocarbon dates across a number of sampling sites, is in fact the most comprehensive programme of its kind in the area and as such is an extremely important development within the region. The archaeological evidence, based on systematic and objective survey work which aims to negate potential bias in the results, at present suggests a break in the settlement and land use of the area which would appear, on outside dating parallels, to occur from about the start of the 3rd millennium BC. Prior to this the topography of the area appears to have been conducive to a hunting and gathering economy, as, within the area surveyed so far, there is a ratio of approximately 5:1 ratio of Mesolithic to later sites. There are good grounds for believing that the palynological evidence within the county confirms this early activity and would suggest a likely context for much of it in the later 5th and early 4th millennium BC.

The lack of basic information about the chronology for the area, the rate of technological development and the development of domestic and other types of site is accordingly most keenly felt in the period to which most of the sites appear to belong, the Mesolithic. This inadequate framework is further enhanced by the high degree of functional variability possible for contemporary sites of the Mesolithic period, all of which provides lines of research for results of potentially wider significance.

The present evidence does, however, provide one of the best pictures, alongside west Cumbria, for the regional Mesolithic. Wirral stands out in the earliest part of the Mesolithic with larger, intensively occupied camps as part of an extensively exploited territory stretching perhaps as far as north Wales. Later in the period this pattern may have broken down. This would have been contemporary with increasing environmental pressures although there is no indication of a link between the two. The late Mesolithic environment would have made the Merseyside area extremely attractive to hunting, gathering and fishing, but it may also have determined more mobile and seasonally restricted patterns of movement.

The occurrence of cereals at two coastal sites in what is still chronologically the Mesolithic period is another important development of wide significance in the county but its application to interpreting the nature of the relationship between native and newcomer must await more work. The present evidence might suggest the most likely scenario is one of more environmentally favoured coastal Mesolithic groups acquiring at least one element of Neolithic culture, ie farming, which may have paved the way for the adoption of other aspects more quickly in these areas. Elsewhere in the county the difference between the native economy and that of groups with Neolithic culture is less easy to distinguish, either artefactually or economically, for many centuries.

The beginning of this farming period is seen in the palynological record but is less easy to define archaeologically anywhere in the county. The period of the 3rd and earlier 2nd millennium BC provides a reasonable amount of archaeological material which exhibits a degree of patterning in its distribution. It is difficult, however, to interpret in detail owing to the lack of a more certain chronological framework. Evidence for activity during this period has to rely on chance finds, owing to an apparent low susceptibility of domestic sites to discovery by survey. This could be explained in a number of ways: by the nature of settlements that leave little archaeological trace, which may be linked to a distinctive economic base at this time; that they are in fact not so numerous and therefore more difficult to find; or that they occur mainly in certain environments which either preclude the normal survey techniques, of fieldwalking and aerial photography, or which mask their discovery by those techniques.

The distribution of Neolithic arrowheads and axes confirms the palaeoenvironmental evidence to some degree, although there are still difficulties with the chronology. This evidence shows an imbalance between Wirral and areas to the east of the Mersey. In the former area, it is the fringes of the coasts and mosslands that appear to have been important while evidence in the latter is much patchier with no settlement foci identified except on the banks of the Mersey at Hale. The axes and other diagnostic implements are few and dispersed although there is a

slight hint that coastal areas such as the Altmouth region in Sefton and the major rivers may have been more important. This is fairly well matched by the palynological evidence. Wirral shows a pattern similar to the national scene with increasing clearance from the late 4th millennium BC associated with arable farming. This, along with the archaeological evidence, suggests a reasonably well settled area deriving from the full, and possibly relatively early, adoption of Neolithic culture and economy.

In contrast, much of the activity east of the river, during what is chronologically the early and middle Neolithic, when Neolithic cultural and economic practices were apparently well established on Wirral, differs little in nature or intensity from that of the Mesolithic. This raises questions about differences in the nature and timing of Mesolithic economic and technological survival across the area in relation to Neolithic adaptations, for which the evidence is slight at present.

The first part of the 2nd millennium BC perhaps allows a better correlation of the various strands, with burials, certain lithic artefacts and the palynological record, all reasonably in accord. From this it would seem that seasonal settlement based on pastoralism was an important feature of the local landscape. There is some evidence for intensification in the number of woodland clearances, but the general lack of arable indicators suggests that this may have played little part in the surrounding landscape. Areas of Wirral may have become more marginal and more in line with other areas of the county. The few sites known are coastal, with an emphasis on hunting and perhaps seasonal grazing, with a similar response on the sandstone ridge around Liverpool. The sites known on the sandstone ridges of Wirral, however, lie in an uncertain relationship to the rest of this activity which allows for the possibility that other forms of settlement and land use coexisted alongside the seasonal activity.

It would not be unreasonable to suggest that this pattern extended back into the late 3rd millennium BC in parts of the county, possibly even on Wirral. This decline on Wirral could have come about from the intensification seen at the beginning of the 3rd millennium BC which might have led to depletion of nutrients in the soil over a period, especially when allied to rising water tables, for which there is some evidence in the early Bronze Age. The lack of pollen diagrams for this area at this time needs to be urgently rectified to test such a theory.

The palynological evidence does appear to suggest that the major development in land use in the county, apart from the late 4th and earlier 3rd millennia BC on Wirral, came in the first half of the 1st millennium BC during the late Bronze Age. Here the first signs of comparative intensification of clearance occur and are seemingly man made in that they are accompanied by good indications of associated arable farming at a

number of sites.

It is a time when the archaeological evidence in the county, and for the late Bronze Age across the region, is at its weakest. The wider picture would suggest, however, that river and wetland environments were potentially the most attractive places at this time, and the metalwork evidence may just hint that the void in the county and the region is due more to problems of archaeological recognition than to the fact that these areas were being ignored on environmental and associated grounds.

This pattern may have continued into the early part of the Iron Age although all forms of evidence become too scarce to identify whether the archaeological void in the county during the second half of the millennium is real. Archaeological evidence from adjacent areas and associated palynological evidence, which is not yet as full as it is for the first half of the millennium, suggest that from at least the middle of this period the landscape within the county was unlikely to have been an empty one. Although the detailed site evidence from the uplands surrounding the county is not good, the type of sites known suggest that settlement was to a large extent continuous in many areas. One future problem to be researched is how far the Merseyside area was included within the influence of those sites.

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