14 INTERPRETATION AND CONTEXT

INTRODUCTION

The prehistoric remains at Kinloch are associated with two broad periods of human activity, one mesolithic the other primarily neolithic. The mesolithic remains consist of pits, hollows and stakeholes accompanied by a substantial body of lithic artifactual debris. The neolithic remains are sparse and with the exception of one small hollow are not solely of anthropogenic origin. For the purposes of interpreting the archaeological evidence they are dealt with as distinctly separate periods.

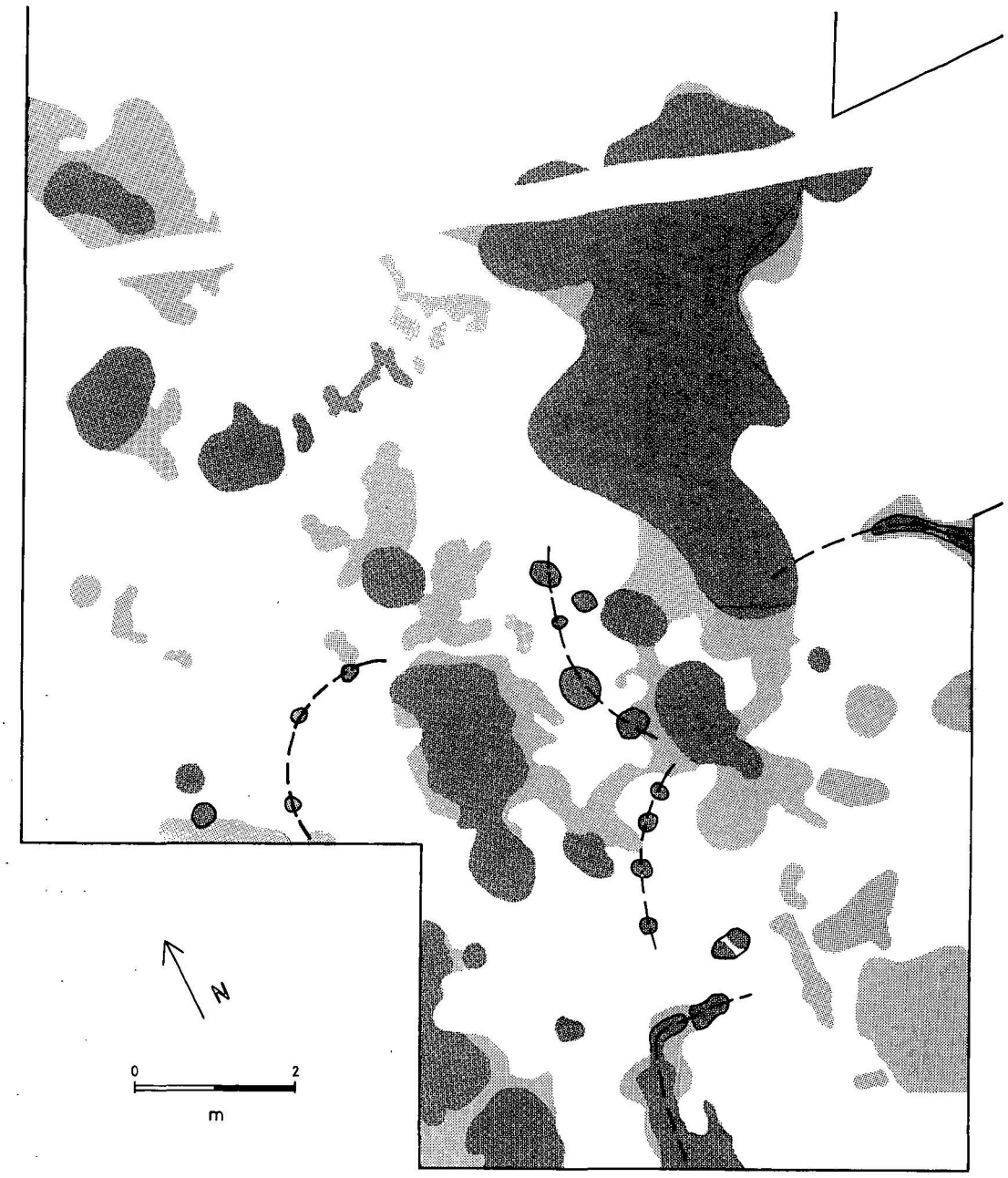
KINLOCH IN THE MESOLITHIC

STRUCTURAL EVIDENCE

The structural evidence for the mesolithic period consisted primarily of pits and hollows, together with a number of stakeholes and two slots. These occurred across the site, with the exception of the W where the distribution of lithic artifacts in the ploughsoil of Trench AH suggested that features had once existed, but were now ploughed out.

The interpretation of pits and hollows is notoriously difficult (Woodman 1985a, 123–9). Hollows may be deliberately dug, or they may be enlarged around a natural feature; pits, on the other hand, are usually artificial. At Kinloch the pits and hollows have been regarded as variants of the same type of negative feature. They are present in a variety of shapes and sizes, from the small steep-sided pits of AD 5 and AD 6 to the shallower more rounded outlines of BA 1 and BA 2. This variety of shape and size is usually apparent wherever pits and hollows are found, and it may relate to function. On some sites pits and hollows are present in sufficient quantity to allow groups to be identified (Woodman 1985a, 126–9), but this was not possible at Kinloch because not all of those recorded were excavated.

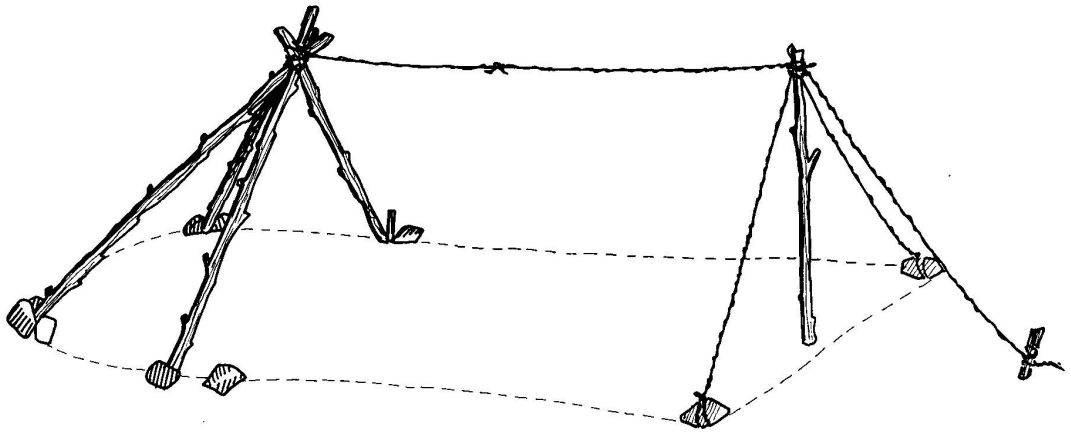
Many functional explanations have been proposed to account for the presence of pits and hollows. These include rubbish disposal, raw material extraction, storage, and cooking. In addition, pits and hollows have been interpreted as dwellings, though it has been noted that the presence of 'pit-dwellings' has perhaps been too readily accepted in the past, and that possible natural explanations for some of these features, such as tree-falls, should have been examined more closely (Newell 1981; Woodman 1985a, 126). There is little evidence, however, to support any of these explanations at Kinloch; there was no indication that any of the pits or hollows had been used as shelters, most were too small for habitation. None of the pits and hollows were associated with signs of burning, or with large quantities of burnt material, as might be expected if they had been used as hearths or as cooking pits. Raw material extraction is also unlikely as there is little of use within the gravel matrix of the site. Storage is a possibility, but there are other ways in which objects may be stored; rubbish disposal is also possible, particularly in view of the quantities of lithic waste, and carbonised hazel-nut shell, present in the fills. In any interpretation of function, however, it must be remembered that a pit may be used for many different purposes throughout its life, and that the excavated fills will, by and large, only relate to the last stages of



ILL 96: Trench BA: Interpreted locations of arcs of stakeholes.

use. Whatever the reason for their original creation, the pits and hollows at Kinloch certainly ended up filled with a mixture containing lithic debris.

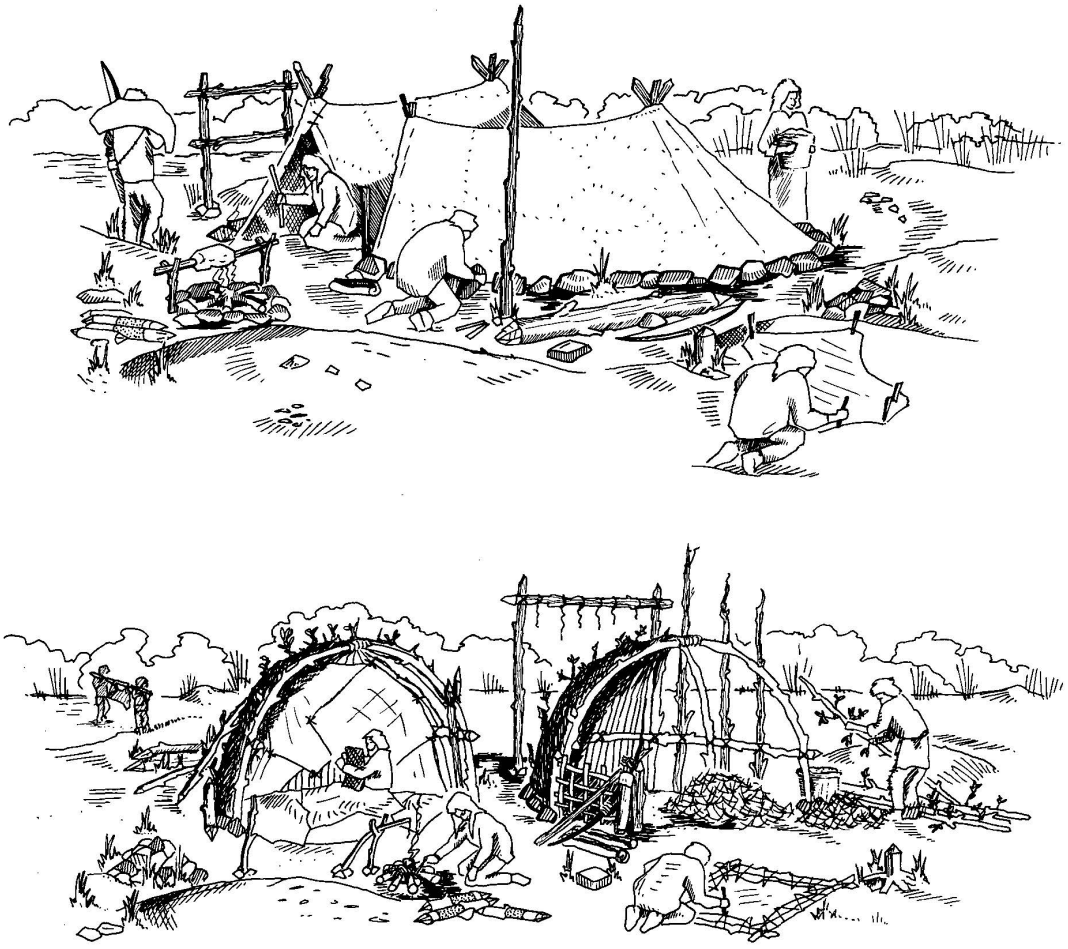
The uncertainties of interpreting the functions of the pits and hollows at Kinloch are exacerbated by the homogeneity of the fills. In most areas post-depositional processes have obliterated any internal stratigraphy, so that any sequences of filling are no longer apparent. Furthermore, the acidity of the soil means that much of the material presumed to have been incorporated as organic remains has not survived. The artifactual contents are predominantly debris from the manufacture of flaked stone tools, together with tools themselves and coarse stone hammers and cobbles; all are set within a uniform matrix of comminuted organic matter, including charcoal. Detailed chemical analysis has been used to assist the interpretation of fills such as these



ILL 97: The stake-hole evidence; one possible reconstruction of a structure drawn from Inuit variations.

elsewhere (Hamond 1985), and it might have been of use at Kinloch (Hirons & Edwards mf b, 2:E1–E14), though the results of soil phosphate analysis were disappointing (Hirons & Edwards mf b, 2:E1–E14; Lee mf, 3:E1–E10).

The only positive structural evidence consists of stakeholes and slots, most of which were uncovered in Trench BA (this was, however, the largest excavated area). In Trench AD there were two pits with post-pipes, but no other structural features were identified. These post-pipes may have been marker posts for the pits, or they may have stood as the base of a rack or frame. In view of the small size of the trench, it is possible that other structural features lie undiscovered nearby, and that these posts formed part of a more complex structure. In Trench BA the stakeholes did not occur within pits. They lay in arcs suggesting more stable structures (Ill 96), but reconstruction on the surviving evidence is difficult because there are no complete circumferences of stakeholes and the posts were slender (c. 0.1m in diameter). Arcs of stakeholes, such as these, occur on other sites, and they have commonly been interpreted as windbreaks (eg Morton, Fife; Coles 1971, 321–41). In support of windbreaks as a possible reconstruction at Kinloch, all the arcs face against the prevailing wind. It is possible, however, that the Kinloch stakeholes represent more substantial, fully enclosed structures. Firstly, ethnographic work shows that quite stable and functional dwellings may be built around a minimal framework of poles. The ridge tent of the Central Inuit, for example, consists of an arc of poles at the rear, joined, in various ways, to a single pole, or a pair of poles, at the front (Ill 97) (Faegre 1979, 125-31). Secondly, complete circles of stakeholes may originally have been present on site, but are now destroyed. If so, then they could have been built up in several different ways, from a conical tipi-type dwelling, to a domed bender or yurt-like dwelling (Faegre 1979). If full circles of stakeholes were originally present, then an explanation must be sought for the destruction of part of each circumference. The most likely explanation would be truncation, whether by natural erosion or by human action, but excavation in Trench BA suggested that this had not taken place. Furthermore, if the truncation were the result of human action, then it would be expected to show as features which cut into the stakehole arcs, but this was not the case. The westernmost arc does terminate in a pit-like feature, but as neither the pit nor the stakeholes were excavated it is impossible to say which came first; elsewhere in the trench the likely locations of 'missing' stakeholes do not coincide with pit complexes. The similarities of the stakehole arcs, therefore, do suggest that they reflect accurately the original structures on site, but the palimpsest of features, and the lack of complete excavation, mean that it is impossible to speculate whether closed tents or open windbreaks were present (Ills 98a and b). Certainly, though the evidence does not suggest dense woodland on the island, there would have been a plentiful supply of trees, such as hazel and birch, from which poles, quite suitable for the framework of huts, could be procured.



ILL 98: Artist's impressions {a and b) of the site during occupation with two possible reconstructions of the structures in use (Reconstructions by Alan R Braby).

Whatever the structures on site, they could have provided considerable shelter from the weather of the day. The inhabitants of Kinloch had access to a number of resources from which to make coverings for their dwellings. Animal skins are perhaps the most obvious, but, in addition, birch and other bark, and even brush wood, might have been employed. In connection with this, the quantity of stone in the nearby watercourse must be considered. The stone was apparently derived from the surface of the area of mesolithic settlement, and, with the absence of stone in similar quantity elsewhere, an explanation for its original concentration in this particular area must be sought. The amount of stone was not enough to suggest stone built dwellings, but it seems that stones once formed an integral part of the wooden framed structures, perhaps holding down the coverings and providing additional support against the wind.

On some sites the distribution of artifacts has been used to suggest the locations and forms of structures; both sharply delineated concentrations of lithics and gaps or lower densities of material have been used to pinpoint a structure (Blankholm 1987; Leroi Gourhan & Brezillon 1972). At Kinloch both concentrations and gaps occurred, but their relationship to the features, in particular to the arcs of stakeholes, remains unclear (as does their interpretation). Artifacts have also been used elsewhere to identify the locations of specific features; most particularly concentrations of burnt material which have been taken to suggest the locations of hearths. At Kinloch, however,

the recognition of burnt artifacts was difficult, and, although easily identifiable burnt material was spread over the site, there were no clear concentrations to suggest the locations of hearths. The presence of burnt material in large quantity, however, does indicate that fires were certainly present. This point was confirmed by the recovery of heat fractured stone slabs which had apparently been used as hearth slabs; these were found particularly in the pits of Trench BA. It is likely, therefore, that the settlement site at Kinloch was used to provide both shelter and warmth for the mesolithic occupants.

THE FUNCTION AND ORGANISATION OF THE SITE IN THE MESOLITHIC

Structures may be used for a variety of purposes, and the detailed analysis of an artifact assemblage is frequently used to indicate the function of a site, even where only the stone tools have survived (Skar & Coulson 1986). At Kinloch, the lithic assemblage across the site mainly consists of the debris from the manufacture of stone tools, but there is also a range of tools and material derived from their use. The wide range of tools present suggests that many different tasks were undertaken and, although it is impossible to identify individual tasks, a similarly broad range has been interpreted on other sites to indicate domestic settlement (Mellars 1976a).

The distribution of lithic artifacts across the site reveals spatial differences that may be related to specific working areas, but the relationship between the final disposal of a tool and the place in which it was used is complex (Schiffer 1976). Across the site, blades are more abundant towards the W, whereas cores and knapping debris are more important towards the SE. Specific concentrations of manufacturing waste were identified in Trench BA, and they varied in content (most particularly in the ratio of debris to cores and in the quantity of tiny fragments). These concentrations probably relate to discrete deposits of knapping debris. Elsewhere in Trench BA blades were more prolific, but too few modified artifacts occurred for the reconstruction of specific functional deposits.

The locations of 'functional' material did reveal patterning across the site as a whole. It is of interest that spatial patterning occurs, but it is impossible to speculate fruitfully as to the uses of the different areas of the site, on the basis of artifact distributions alone. Given the long period of time from which the mesolithic remains date, it is likely that some of the spatial differences may relate to chronology, but it is also likely that the use of the site was structured in some way, eg with different activities taking place in different areas and with separate family groups making use of separate dwellings.

Lithic Technology

Two different processes must be considered: the manufacture of tools and the use of tools. The manufacture of tools included the selection of raw materials, the choice of knapping techniques, and the reduction method. At Kinloch, soft hammer percussion (probably using sandstone hammers), was preferred, and it was applied to flint cores to make blades. The blades could then be used as they were, or altered into formal tools, eg microliths. As flint was not available in great quantity, the prehistoric knappers also made much use of the bloodstone which occurs naturally on the west coast of the island. Bloodstone is poorer in quality than flint but, with some modification of knapping methods, it was possible to produce a similar range of artifacts from it. These modifications lay mainly in the different treatment of the nodules, and in the alteration of the reduction method. Nodules of bloodstone were apparently tested and prepared into cores away from the site; once on site, the bipolar method was more common in the knapping of bloodstone than of flint.

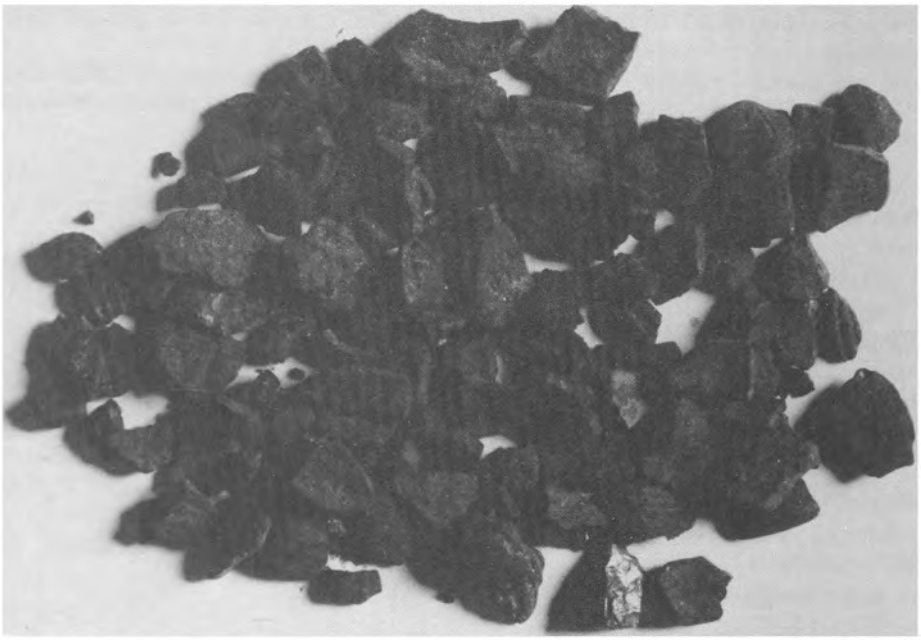
There was no analysis of the individual tasks for which tools were used. However, several tool types were recognised and, despite the problems of emic and etic classification in prehistory (Knutsson 1988b, 11–6), it is likely that they fulfilled a range of functions. Detailed consideration of function is confounded at Kinloch by the poor survival of material; stone tools were only part of the material culture of the settlement, and probably only a small part at that (Coles 1983, 9–11).

The necessities of everyday living were provided for by a variety of artifacts of many different mediums, and most of these have disappeared. The analysis of the functions of the stone tools would help to illustrate the range of activities present at Kinloch, but it can never reconstruct the complete life of the settlement.

Resources

Little survived to indicate the resources used at Kinloch, but from the raw material range of the lithic assemblage it may be deduced that both very local resources and resources from further afield were collected. Whether settlement at Kinloch lasted throughout the year is unknown, but Rhum, as an island, had to be reached by sea; some form of sea transport undoubtedly existed. Thus, there were opportunities, not only for sea fishing, but also for the exploration of resources on other islands and the mainland. Though there has never been intensive fieldwork in the area, the presence of bloodstone artifacts and mesolithic sites reinforces the argument that the mesolithic populations were mobile.

Little is known of the history of the fauna of Rhum, but the vegetational history shows that many plant resources were present from early in the postglacial period. Around the head of Loch Scresort, esturine saltmarsh had developed by 7800 BP; inland, much of the island was covered by open grass and heathlands, with some shrubs like juniper and bog myrtle; in more sheltered areas, light woodland, including copses of birch and hazel, had been able to develop. Several authors have tackled the complex problem of reconstructing resource use, often on sites where the remains were better preserved than at Kinloch, and they have emphasised that the inhabitants of any one site might be expected to exploit a variety of habitats for both plant (Ill 99) and animal resources (Bonsall 1981; Clark 1976; Mellars 1987; Woodman 1985b). At the time of occupation it is likely that the sea level was slightly lower than that of today (Sutherland mf, 3:E11–G6). Although the site was never far from the sea, it may have been set back from it, separated by a flat littoral area. Elsewhere on Rhum, the habitats include the sheltered glens and the higher more exposed grasslands and rocky peaks; the population of Kinloch must have travelled through a variety of habitats on their way to Guirdil Bay for bloodstone.



ILL 99: Fragments of hazelnut shell (Photograph - I Larner).

CHRONOLOGICAL EVIDENCE

Site chronology is concerned with two questions: the date and the duration of settlement. There are two main sources of evidence: radiocarbon determinations obtained from samples of carbonised hazel-nut shell; and stylistic cultural comparisons of the stone tools.

The radiocarbon determinations relating to the mesolithic settlement all lie within the millennium between 8685 and 7520 BP, which place the site firmly at the beginning of the known postglacial settlement of Scotland. Early postglacial occupation is confirmed by the stylistic affinities of the stone tools. Primary technology geared to the production of blades has only been recorded in Scotland on mesolithic sites, and microliths are a well known mesolithic indicator. There is a lack of securely dated mesolithic sites in Scotland, and this makes it difficult to discern changing cultural trends throughout the period, but microliths stylistically similar to those from Kinloch have been found on other early sites, eg Newton, Islay (7805±90 BP, GU–1954; 7765±225 BP, GU–1953; McCullagh forthcoming) and Lussa Wood, Jura (8194±350 BP SRR–160 & 7963±200 BP SRR–159, Mercer 1980). Simple scrapers on the ends of blades and regular flakes often occur on mesolithic sites (eg Mercer 1974, 25–7). They are frequently truncated (as are some at Kinloch), but many of the other formal tools are types that occur throughout prehistory; they were, doubtless, well adapted to a range of uses and, thus, less subject to stylistic and chronological variation.

One artifact (the small bifacial point from Pit AD 5; Ill 59.1), is idiosyncratic within a mesolithic context. Both the method used to produce it (invasive bifacial flaking), and the resultant stylistic type (a leaf point), have previously been considered to be neolithic. At Kinloch this artifact is securely stratified within a mesolithic pit, and hazel-nut shell from the same context produced two of the earliest dates for the site (8590±95 BP, GU–1873 & 8515±190 BP, GU–1874). In Europe, invasive bifacial flaking does occur on mesolithic sites (Huyge & Vermeersch 1982, 157, fig 17; Gendel 1987, 71, fig 5.5), and similar artifacts have been recovered from mixed or unstratified sites with a mesolithic component in Scotland (eg Mullholland 1970, 94; Mercer 1968, 35–6). In the past these Scottish finds have been assigned to the neolithic, but this is no longer a valid generalisation, and invasive bifacial flaking may have formed part of the repertoire of prehistoric knappers for longer than previously recognised. It is worth noting that the bifacial points that are potentially associated with mesolithic material in Scotland are generally much smaller in size than those with secure neolithic associations.

The radiocarbon determinations indicate that human activity continued over a period of some one thousand years. They suggest that the features to the N (in Trench BA) might be more recent than those to the W and S (in Trenches AD and AJ), but they do not indicate whether occupation was continuous. As the duration of the site is likely to be related to the amount of archaeological material present, it is useful to consider the area of remains. The S, E and W edges of the site have been obliterated by more recent activity, but the minimum area covered by the remains may be estimated to be 4500 sq m. This is unusually large for a mesolithic site (Mellars 1976a, 378), but it might be accounted for by the long period of use. The excavation trenches, however, were widely scattered and they only investigated a small proportion of the site (c. 10%), so that they do not demonstrate how the different parts of the site relate to one another. In effect, so little of the site was excavated that it is impossible to determine whether or not settlement was continuous.

It would certainly have been possible for settlement at Kinloch to have lasted throughout the year. A range of resources were accessible on Rhum, and there was no need for the occupants of the site to move from season to season. Given the vaguaries of human nature and the limited, if renewable, supplies of essentials, such as firewood, it would seem likely, however, that there were periods in the life of the site when the focus of settlement moved elsewhere, even if only further around the shores of Loch Scresort. The scatters of lithic artifacts along the N shore of Loch Scresort may represent other locations of mesolithic occupation. Whether or not the settlement at Kinloch was continuous, the long period over which activity took place has caused the archaeological remains to be mixed, and so the problems of interpreting the mechanics of the use of the site have increased. The gross spatial patterning of artifacts may be related more to changes through time, than to different uses in any one period.

SUMMARY

The evidence suggests that the mesolithic site developed as a result of domestic settlement at the head of Loch Scresort in the early post-glacial period. Shelters of some type were constructed (Ills 98 a and b), together with incidental racks and frames. Although hearths were certainly present, no *in situ* hearths were preserved. Stone for tools was carefully selected from a variety of local sources and the technology was adapted to make the most of the material available. The spatial distribution of the artifacts suggests that the separate areas of the site were differentiated in some way, but this pattern is confused by the long, and probably intermittent, period over which occupation took place. The variety of features present most probably reflect a range of functions, but latterly they were used for rubbish disposal. There is no evidence as to the duration of occupation each year; given the resources of Rhum, it would have been quite possible for the settlement to have lasted throughout the year. In the wider sphere, however, the inhabitants of Kinloch were certainly mobile, and there is evidence for a network of contacts stretching over the coastlands and islands of NW Scotland.

NEOLITHIC AND LATER ACTIVITY

Included here are all remains relating to prehistoric activity later than the mesolithic. As discussed in Chapter 3, the precise dating of some of these remains is impossible. In comparison with the evidence for mesolithic activity, the later remains are scant.

The main evidence for neolithic activity consists of the dumps of material preserved within the developing bog of the defunct burn. In addition, there is one shallow hollow (AD 7), which, on the basis of the associated radiocarbon determination, was filled in in the late third millennium BC. At some time a spread of gravels was formed along the southern edge of the watercourse. These gravels were apparently derived from the mesolithic site surface, but the stratigraphy suggests that the site was long out of use by the time that the gravel was scraped up. As there was no evidence for great truncation of the mesolithic features in the area immediately adjacent to this gravel dump, the material must have come from further away (most of the site in this area remains unexcavated). By this period the burn had become sluggish and a thin layer of peat lay under the gravels where they had spilled out over the edge of the burn. This gravel 'bank' was not substantial, and it is difficult to understand what led to the creation of a feature such as this, but the most likely explanation is that it represents an attempt to consolidate the edge of the growing bog. The burn at this time had silted up, and the gravel spreads could have been used to increase the amount of dry, free-draining land at the burn edge. As the gravels are overlain by peat, the effort was only temporarily successful.

The exact date of this activity remains obscure. The stratigraphy of the watercourse section indicates that the gravels post-date the mesolithic remains. Smaller dumps of different materials lie within the peat of the watercourse and are associated with the neolithic activity, but there is no direct stratigraphical relationship between these and the gravel spreads. The watercourse must have silted up over a long period of time, and indications of human activity between the two main periods on site are preserved in the local pollen record. So, it is possible that the gravel dumps relate to activity prior to the neolithic remains. Given a slowly developing bog, consolidation of the edges might have taken place at any time if there were people in the vicinity.

The majority of the more securely dated neolithic deposits were also associated with the peat of the bog. Towards the eastern end of the main excavated length of the watercourse lay a deposit of rocks and wood, together with sherds of pottery and flaked lithic material. Given the small size of the trench, interpretation of this feature is difficult. The protruding rocks make it unlikely that the bog was deliberately filled for cultivation. On the contrary, the rocks may be an attempt to improve the free-flow of water (and therefore drainage); no drain cuts were observed, but the wet peaty matrix was not conducive to excavation and observation. Alternatively, the rocks may be the

fragmentary remains of a causeway across the bog, or simply a dump of redeposited rubbish (including the lithic debris and abraded pot sherds). The presence of flax pollen in the deposit also opens the possibility that the rocks were associated with the retting of flax. If so, then just such a dump in sluggish water would be expected, but it must be borne in mind that only 5 grains of flax were recorded. Whatever the function of the deposit, it is tempting to equate the deposit of rocks with the clearance of the surrounding land for cultivation (Chapter 11).

The interpretation of this deposit is further complicated by the apparently conflicting dating evidence incorporated within it. One radiocarbon determination (3890±65 BP, GU–2043), was obtained from a sample of wood, but the typological analysis of the associated pottery suggests that this date might be rather late (Chapter 9), whilst geochemical analysis of a piece of pumice from the deposit suggests that the radiocarbon determination may be some one thousand years too early (Chapter 9: Dugmore mf, 3:G7–G10). In addition, detailed analysis of the lithic assemblage from the deposit revealed a number of mesolithic traits, indicating contamination from the earlier settlement of the site (Chapter 6). None of these dates are absolute, but together they suggest that the deposit may have had a longer and more complicated history than that revealed by the stratigraphy during excavation. The area examined was small, it had been cut by numerous modern field drains, and it was excavated in appalling weather conditions. Whatever the reason for the incorporation of the rocks into the watercourse, it is likely that the pottery, at least, was redeposited, and the possibility of both early contamination and later intrusion (if only represented by the pumice) into this deposit, must be considered.

Further evidence of neolithic activity in the watercourse consists of a small number of matted rafts of organic debris and brushwood lying within the peat. Analysis of the brushwood indicated that it had probably resulted from the clearance of scrub. These rafts may also have been deliberate attempts to consolidate the bog surface, or they may simply have resulted from the clearance of debris, after a storm perhaps. The organic debris provides a midden-like consistency and the rafts may include an element of rubbish disposal.

Whatever they were doing in the area of the watercourse, people were present in the vicinity in the late second and early third millennia BC. They made both pottery and stone tools, and, though individual functions cannot be interpreted with certainty, there is evidence that both were used. Residues surviving on the pot sherds have been interpreted as possibly the result of prehistoric fermentation, an interpretation supported by the brewing of an acceptable drink from the ingredients identified by the analysis (Chapter 9.2). The refuse-like nature of these deposits suggests that the neolithic habitations were close-by and the excavation did attempt to locate structural evidence from this period. To the north of the watercourse the land slopes steeply and is composed of damp boulder clay. Trench BB was opened here, but it revealed nothing. It now seems likely that any neolithic settlement may have lain to the east, where it would have been destroyed by the dyking, ditching and erosion at the edge of the field; or it may have lain to the south. If settlement were to the south, then the remains must lie in the unexcavated parts of the site, amongst those of the mesolithic settlement. Within the trenches there were features that were never excavated, notably in Trench BA, and it is possible that some of these may date to the neolithic. There were no obvious neolithic type-fossils (such as pottery) in the associated artifact concentrations of the ploughsoil, however, and the only certain evidence of neolithic activity was a shallow hollow (AD 7) which lay across the top of the mesolithic pit complex in Trench AD. Both the fill of this hollow and its contents were unremarkable; there was nothing to differentiate them from the mesolithic material below, but the fill was separated from the mesolithic fills by a thin peaty layer, which presumably represented a time when the hollow lay open. The neolithic date was provided by a radiocarbon determination obtained on hazel-nut shell found within the fill (4725±140 BP, GU–2043). This determination is several hundred years earlier than those associated with activity around the watercourse. Elsewhere, hints of neolithic activity may be detected in the occasional occurrence of neolithic type fossils within the ploughsoil. Large bifacially flaked points (quite different to that of AD 5), and sherds of pottery, were recovered in small numbers across the site, but so far the evidence suggests that the majority of the features uncovered away from the watercourse are associated with mesolithic activity.

SUMMARY

The existence of neolithic material on site, and the dating of some of the deposits to the late second and early third millennia BC, indicate that the site was re-visited at this time. No structural evidence from this period was located, however, and the material remains are sparse so that it is not possible to interpret the activity that was taking place.

KINLOCH IN THE WIDER CONTEXT

Only evidence relating to mesolithic settlement will be considered here. The remains of neolithic activity are unremarkable, and in this context they offer little to the knowledge of the neolithic settlement in the north of Britain.

THE CONTRIBUTION OF KINLOCH

Although the site is early, the location of Rhum makes it unlikely that this was the springboard for the human settlement of Scotland. Other sites at least as early as Kinloch must exist. Mesolithic sites usually occur as scatters of lithic artifacts and they are not highly visible, but this is compounded by a combination of demographic, historical and geomorphological factors which mitigate against the discovery of new sites (see Woodman 1978, 2–5 and forthcoming). Recognised sites, therefore, reflect neither the likely density of population, nor the likely patterns of settlement. Furthermore, few sites have been excavated and even fewer published in full, and in any case the survival of material on most excavated sites is so poor that analysis is biased towards a small part of the original cultural remains. As a result the literature (including this publication) is full of analogies drawn from work elsewhere. Hence there is a clear idea of how the mesolithic populations of Scotland *should* have lived but little idea of how they *actually* lived.

The traditional view of mesolithic occupation is that of a pattern of transient bands living in a period of environmental change and responding to this by grouping and regrouping at different times of the year in order to make the most of available resources. This view owes as much to contemporary anthropology (eg Riches 1982) as to the poor survival of archaeological remains, but analysis of the mesolithic is slowly being refined with the development of techniques that allow a more detailed study of individual sites. The site at Kinloch conforms to this pattern in that unsuitable soils and more recent disturbance have meant that the physical remains of human occupation have all but gone. It is impossible to say whether the settlement was transient or permanent, or how many people used it at any one time. It is likely that Rhum could have supported a year-round population, but there is no evidence that it did. On the one hand, diverse lithic scatters have been located on the island and they might represent a year-round pattern of mesolithic occupation; on the other hand, the use of bloodstone on the mesolithic sites of the neighbouring islands and mainland provides evidence for the movement of people throughout the area.

Mellars (1976a), amongst others, has tried to approach the question of settlement type and duration by analysis of the area of a site together with the quantity and variety of artifacts present. If this analysis is applied to Kinloch then the whole site may be assigned to his type B 'Balanced Assemblages', and it would be interpreted as the result of occupation by at least multiple family groups, generally winter based and often coastal, with a reliance upon hunting as well as more 'domestic' tasks. However, there are methodological problems in such sweeping applications of analysis. An assemblage is as much an artifact of the recovery techniques of excavation as it is an artifact of prehistoric deposition, and neither it, nor the site, may be considered a unity. A site develops over many years, and so represents a series of occupations, even if these occupations are continuous. At Kinloch, the nature of the assemblage varies across the site. If the site is divided

into constituent areas, then these areas produce very different results when Mellars' analysis is applied. The south, being microlith dominated, would represent summer occupation; the north (dominated by scrapers), would be a winter camp. Elsewhere, other explanations for this type of variation have been advanced, eg microliths have been assigned to male activities related to subsistence, and scrapers to female activities related to maintenance (Welinder 1971). All of these interpretations may be explanations for the variation in the mesolithic remains, but on the basis of the data available they tend to say more about contemporary archaeological thought than about the life-style of the past (Whallon Jr 1978).

The same problems beset any interpretation of the number of people occupying the site. Much work has been done to equate settlement size with population, often with differing results (Cook & Heizer 1968; Weissner 1974), and attempts have been made to apply this to archaeological remains (Price 1978; Blankholm 1987). At Kinloch, however, the long period of use means that the settlement built up as a palimpsest and, as it was not excavated in full, it has not been possible to sort out the detailed chronology of the different structural elements. Mellars has tried to avoid this problem by looking for localised concentrations of lithic material across a site (1976a, 377–9), but so little was excavated at Kinloch that not even this was possible. There are, in any case, many different reasons for the build up of discrete concentrations of artifacts across a site, and the presence of habitations is only one.

In the face of so many unresolved questions about the nature of the site one point stands out, namely the contribution of the detailed examination of the lithic assemblage. This has served to fill out the available information about the site, even if it can provide little more than a hint of the original complexities involved. Given the general predominance of lithic artifacts as a data base for the mesolithic, the increased use of lithic analysis (eg Broadbent 1979; Cahen 1987; Zvelebil *et al* 1987) is of great importance for the future analysis of the period. Many techniques for obtaining information from stone tools are under development and, although not all are applicable to every site, the ubiquity of stone tools means that some, at least, will be of value on most sites. At Kinloch, the lithic assemblage led to the discovery of the site, and assessment of the lithic procurement system has provided the first concrete evidence for mobility in the mesolithic of Scotland (even though the details have still to be determined). Although it was not possible to interpret the spatial patterning of material across the site, it is of interest for the interpretation of social organisation to know that such patterning does exist. The composition of the assemblage was also patterned, suggesting that it served a range of functions. Finally, the assemblage provided detail of one facet of mesolithic technology, lithic reduction, and in particular of the adaptations made by the prehistoric knappers to produce the tools that they needed. As much archaeological theory is built upon stylistic comparisons of tools from different assemblages, it is of great importance to be able to assess the constraints in operation upon assemblage formation.

At Kinloch these constraints relate in particular to the different lithic materials that were available and to the use of different methods to reduce them. The latter included the bipolar method and, as the identification and interpretation of this method has provided much debate on a number of sites, it is instructive to examine it in more detail. Bipolar cores occur on a variety of prehistoric sites, and the use of the method has been variously ascribed: to a scarcity of raw material; to the poor quality or small size of available material; to the work of women knappers; and to cultural preconditioning (Broadbent 1979, 108–11; Hayden 1980; Kobayashi 1975; Mercer 1980, 21–2; Thorsberg 1985, 3). At Kinloch the bipolar method is not a response to a scarcity of raw material, for the bipolar cores are predominantly of bloodstone, which was abundant. Nor is it a cultural trait, as it occurs on a variety of sites throughout Scottish prehistory and it has never been isolated to any one period, geographical region, or type of site. It may be an adaption to the available raw material, but if this was so, then at Kinloch it is unlikely to be related to small nodule size, given the range of nodules available on Guirdil beach.

The most likely explanation for the use of the bipolar method at Kinloch is that it was related to the relatively poor quality of the bloodstone in relation to the flint. By using this method the knappers were able to make the most of the intractible and uneven material of the bloodstone nodules, and analysis showed that they preferred to knap flint when they could procure it. In this way the technology of the site was determined by the raw materials that were available. As a

result, the assemblage is constrained by the materials of which it is made, but consideration of these materials, as well as of the individual tool morphology and knapping characteristics shows how the knappers carefully selected in order to minimize the material constraints. The knappers of Kinloch were fortunate for they had access to a variety of plentiful, and generally good quality, raw materials. Knappers at other sites in Scotland were not so fortunate, the available material was often limited, and so both the manufacturing techniques and the tool types show further constraints.

As a postscript to the discussion of bipolar cores at Kinloch, it should be noted that they have also been interpreted as functional tools (Mercer 1971, 18–19). This possibility is not ruled out here, but in the absence of a detailed functional analysis of the pieces themselves, it cannot be developed. Whether or not they were used, these artifacts are primarily cores. They are the debris left from the manufacture of flakes and blades by a specific reduction method. They may well have been used subsequently, for it was not uncommon for lithic debris to be turned into serviceable tools, and the use of bipolar cores would be a typical example of this.

Finally, the very survival of the site is of interest. Although the features had suffered plough damage, the preservation of information in the ploughsoil suggests that the potential for the excavation of mesolithic sites elsewhere in Scotland may not be as bleak as once believed. 'Ghost' features could be identified in the ploughsoil even where lazy-bed cultivation had taken place.

THE MESOLITHIC IN SCOTLAND

The mesolithic sites of Scotland are predominantly coastal; here they are both more visible and more accessible to the present day populations who locate and record them, and this has served to over-emphasise the value of the coastal environment for the mesolithic community (Woodman forthcoming). However, in other parts of Europe survey work has demonstrated the importance of the mountain environment for mesolithic occupation (Bang-Andersen forthcoming; Holm forthcoming), and until fieldwork in the interior of Scotland has confirmed the validity of the coastal bias it should be regarded with caution. In this respect, the invisibility of mesolithic sites does create a difficulty. Although many lithic scatters are recorded, few are securely dated, and it is salutory that Kinloch was not recognised as a mesolithic site until it was excavated. A rapid surface collection over the field did not recover any microliths and the only type-fossil known when excavation commenced was a barbed-and-tanged point (usually bronze age; no other remains of this date have been recovered). The problems of recognising mesolithic sites mean that in order to improve knowledge of the mesolithic across Scotland it will be necessary to do more than surface survey. Shovel-pit sampling provides one rapid method to locate scatters of small artifacts in terrain such as that of Scotland (Bang-Andersen 1987), and a close examination of the situations where the peat cover has already been disturbed (as in forestry ploughing) can be of use. Where this has been undertaken it has yielded artifact scatters, even microliths (Clarke forthcoming; *D & E* 1983, 13). Only by employing such techniques will the biases inherent in the present knowledge of the mesolithic settlement of Scotland be removed.

The material traditions of the mesolithic are, of necessity, based on lithic artifacts and the lack of sites means that Scotland lacks a good data base. Further south many more sites have been identified and there has been much research upon the lithic assemblages of England (eg Pitts 1978a; 1978b). This has had an important effect upon the interpretation of the mesolithic of Scotland for there has always been a tacit assumption that the Scottish mesolithic developed out of the mesolithic settlement of England, and that it is closely related to its southern neighbours (*cf* Mulholland 1970, 103–07).

In 1976 Jacobi drew up a typological scheme for the chronological development of the lithic industries of England, comparing the broad changes in the microlith types with those of Europe (Jacobi 1976). In his scheme he identified two main chronological phases which divided around 8000 BP. The microliths of the earlier industries were based on broad blades (generally non-geometric types), those of the later industries were based upon narrow blades (geometric types). Since its publication Jacobi's work has dominated research into the mesolithic. The most important impact on Scotland has been that all Scottish sites are quickly assigned to one of Jacobi's

two sub-divisions (Morrison 1980, 114–73). In fact, it was soon apparent that the evidence from Scotland did not fit easily into these sub-divisions, but this was taken to be an effect of the perceived 'peripheral' northern location of the mesolithic settlement of Scotland. In particular, the discussion has centred around the site of Morton, Fife, where apparently broad microliths seemed to be associated with fifth millennium BC dates, although by then broad-blade industries had disappeared from further south (Myers 1988). However, in his original paper Jacobi did not consider Scottish material at all. It is theoretically dubious to attempt to fit assemblages from one area (Scotland) into a typology based upon material from a different area (England). In any case, the early postglacial inhabitants of the British Isles are unlikely to have paid heed to modern political boundaries. Britain encompasses a variety of regions and this geographical diversity must have helped to shape the development of its mesolithic cultures. The sweeping application of analysis across the country will only serve to obscure the developing relationships between the mesolithic settlement of the different areas. Modern political names are of use to archaeologists because they identify separate archaeological systems, but it is important to remember that an individual system represents both cultural and geographical diversities and is not a natural unity.

The lithic industries of Ireland, another diversity of regions, have recently been examined, and this has led to increased information about chronological developments (Woodman 1978). The relationship between the early postglacial settlement of Ireland and that of Scotland is still unclear, but, unlike the relationship between Scotland and England, no cultural priority has been assigned. Thus, freed from the need to conform to an existing chronological typology, work on the mesolithic settlement of Scotland may be assisted by comparison with the methods and results of the Irish work. This opens the way to use the English and Welsh data in the same way; from this work regional comparisons may spring that are of more value to a study of the mesolithic settlement of the British Isles as a whole.

THE MESOLITHIC SETTLEMENT OF THE BRITISH ISLES

Since Jacobi's assessment of the material from England in 1976, many sites have been located, some have been excavated and a few analysed in detail. The new sites uphold Jacobi's chronological division. In addition, work in both Wales and Ireland has added detail to knowledge of the mesolithic settlement of this part of north-western Europe. In Wales many sites are known, but most consist of unexcavated artifact scatters. However, in combination with information from the excavated sites, the detailed examination of these assemblages shows that the major chronological division identified by Jacobi does occur throughout Wales (David *pers comm*). In Ireland, in contrast, there are still few early postglacial sites, but fieldwork is increasing the data base (Woodman 1984; Zvelebil *et al* 1987) and the sites show a diversity of material culture. Some of this diversity may be ascribed to chronological factors, but (although the major chronological break is around 8000 BP as in England), it is the earlier mesolithic sites in Ireland that have an artifact assemblage based upon narrow blade microliths. The later sites have an artifact assemblage without microliths at all, but they have a range of tools based upon the modification of large blades (Woodman 1985a, 169–74).

Sites with assemblages that reflect the narrow blade traditions are to be found across the British Isles. On mainland Britain they may be assigned to the same general period, but they do not all have precisely the same composition. As more sites are recognised it is increasingly apparent that there is great material diversity between the narrow blade sites. In particular the proportions of the microlith types vary; some sites are dominated by scalene triangles, some by backed bladelets, and some by other tools. In Scotland, all of the evidence suggests that the microliths of the earliest mesolithic industries are based on narrow blades. Kinloch is but one of a group of sites that have produced industries associated with seventh millennium BC dates; other early sites with narrow blade microliths include Newton, Islay (McCullagh forthcoming) and Lussa Wood, Jura (Mercer 1980). Broad blade microliths do occur on Scottish sites but there are no certain associated dates. There were no broad blade microlith types at Kinloch.

In a development of his typological chronology for the mesolithic Jacobi divided the narrow blade sites of England and Wales into groups, and he interpreted these groups as 'social territories'

(Jacobi 1979); more recently he has examined the weaknesses of this argument (Jacobi 1987), and from this it is clear that the data is not yet adequate for this sort of explanation. The details of the groups of sites, both spatial and chronological, are not properly documented, and neither are the details of the contents of the assemblages and associated features. The diversity of the later mesolithic period in Britain is well known, and it is by now apparent that there is no longer any need to 'fit' the Scottish sites into an English framework. Instead, the developments of material culture in Scotland, although still only hazily known, are plainly just one facet of the heterogeneous nature of life across postglacial Britain.

From this it follows that to improve understanding of the mesolithic settlement of the British Isles it is not enough to locate and examine more sites. It is also important to look in more detail at the patterns of information produced by those sites, and this includes information relating to site size, assemblage composition, topographical location, and date. Ethnographic analogy has shown that variation in any one field may result from several things: seasonal differences; functional differences; or cultural differences; and all of these differences are interlinked (Binford 1983, 109–92). From the earliest archaeological synthesis this variation in the archaeological evidence has provided a basis for general social interpretation (eg Wilson 1863, vol 1, 41–64; Lacaille 1954; Mellars 1976a; Gendel 1986), and its application is of great value today because it is under constant review, both with the refinements of middle range theory and with the additional data provided by new sites. Inter-site analysis is still fraught with difficulty, however, for it does not usually involve adequate source criticism. If the explanations for inter-site diversity are to be valid then the analysis must be certain that the variation observed relates to geniune prehistoric differences and not to the effects of post-depositional processes. This is best illustrated where analysis is based on a comparison of the artifact assemblages; differences between artifact assemblages are as likely to result from the recovery techniques as they are to result from the prehistoric deposition practices, eg a manually recovered lithic assemblage is not a true reflection of the prehistoric assemblage, both the quantity of material and (more importantly) the proportions of tool types change when sieving techniques are introduced.

ILL 100: Kinloch: work in progress on site (Photograph - Andy Barlow).

Inter-site analyses are important, for it is only through them that overall knowledge of the mesolithic period can advance, but because of the difficulties there will be no attempt here to slot Kinloch into the structure of the mesolithic settlement of Britain. The site is large, and covers a long time-span, even if occupation was intermittent, and the internal organisation of that occupation is unclear. It has not been possible to identify contemporaneous features, nor has it been possible to recognise chronological relationships except at a broad level. Some functional interpretation has been undertaken, but it is general, and in the absence of full excavation and more detailed analysis it can only be tentative. As for comparisons of the general composition of the assemblage, account must be taken of the considerable variation across the site. Finally, the recovery techniques used at Kinloch have undoubtedly affected the assemblage so that detailed comparisons with assemblages recovered elsewhere are at present of limited value. Only through the development of inter-site interpretation will the complexities of the early postglacial settlement of the British Isles be revealed, but detailed studies of more sites are needed. The information from Kinloch is now available should others feel braver, and have more time, than this author.