

A Hut-circle Settlement at Kilphedir, Sutherland

by Horace Fairhurst and David B. Taylor

GENERAL

These investigations at Kilphedir in the Strath of Kildonan (fig 1) are concerned with the site of five circular houses and the small area of cultivated land around, which was first occupied in the period about the fifth century BC. Some three centuries later, a single house of a rather different type was constructed on the same site and a second phase of cultivation may have occurred. Peat then blanketed the area of the settlement which subsequently remained undisturbed down to the present time. The excavations, on what is in fact a very exposed hillside, were undertaken in an adult field-school under the auspices of the Sutherland Education Committee. The circumstances were unusual and are discussed at the end of the paper. Our volunteer helpers in the school numbered between twelve and thirty, and we worked during four seasons of a fortnight each, in 1963–5 and again in 1968. The writers present the results jointly on behalf of the field-school and of the Sutherland Education Committee.

HUT-CIRCLES IN NORTHERN BRITAIN

The expression 'hut-circles' is perhaps somewhat antiquated but it usefully describes a class of field monument which is probably more numerous in Northern Britain than any other. Surprisingly little excavation has been attempted in Scotland and very little is known with precision concerning the distribution, differences in form, period and the economy of the inhabitants. Hut-circles vary considerably in size from less than 16 ft (5 m) internally to over 40 ft (12 m) but are generally regarded as the stone foundations of round houses. Some consist of a simple ring-like enclosure delimited by a bank of earth and stones or even boulders, usually much overgrown. Many hut-circles and especially those of northern Scotland, however, were normally located on a slope, presumably for better drainage, and in these cases, a level platform was first constructed by quarrying into the uphill side and spreading the material in a crescentic apron downslope. The stone foundations of the round-house which was superimposed are to be traced as a distinct bank around the edge of the built-up portion of the platform; this bank seems often to merge with the quarry face upslope.

Of recent years in southern Scotland, many platforms of a closely related type which appear simply as a levelled space without the ring-like bank of the hut-circle have been recognised. Excavation has shown that these 'platform settlements' consisted of houses with timber walls, lacking stone foundations, as Feachem has been able to demonstrate.¹ Similar floors have also been traced within some hillforts, and seem to represent the dwelling sites of the occupants; the North Eildon is a well-known example where very large numbers are involved.² Insufficient is known about the period of these structures to decide whether a cultural difference is involved or

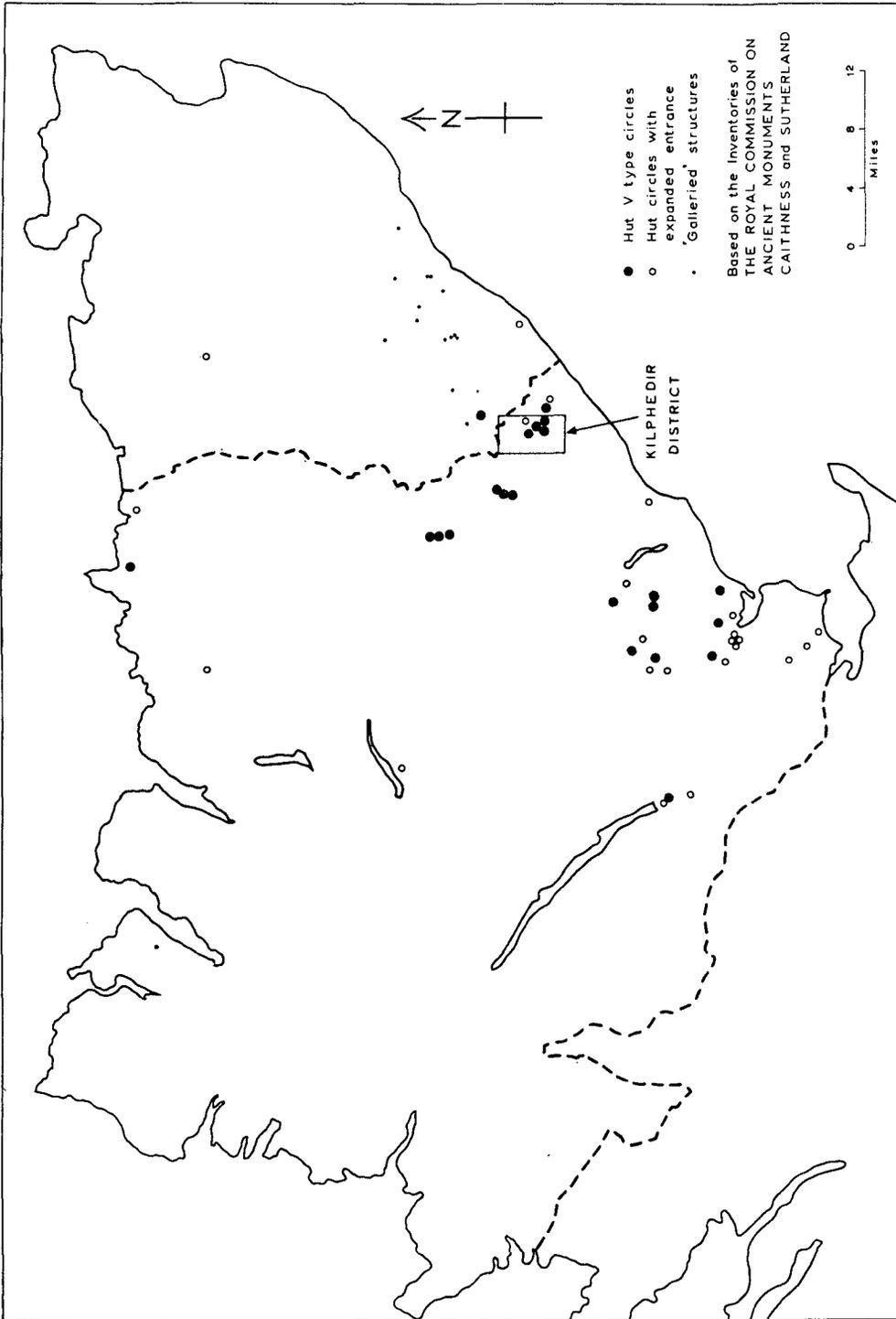


FIG 1

whether the hut-circle is normal in upland or rocky areas where stone was more readily available than timber.

Marked differences in the use of materials of construction of these prehistoric round-houses may, at least in part, explain some very curious anomalies in the distribution of hut-circles, particularly in the region of primary concern in this paper – the north of Scotland. The RCAM *Inventory* for Sutherland stressed the fact that very large numbers occurred in the eastern part of the county,³ while very few had been found in the more rugged and damper west; this would suggest that an environmental factor is significant. On the other hand, the *Inventory* for Caithness, written in the same period,⁴ emphasised the scarcity in that county which, in its lowland districts, is neither rugged nor extremely wet; nor is it devoid of extensive stretches of uncultivated land where hut-circles could be expected to survive. The much later *Inventory* for Orkney and Shetland⁵ similarly mentions only a very few hut-circle sites. Such problems obviously need further investigation.

There can be no doubt that the sites of these round-houses and in particular the more easily recognisable hut-circles, provide a reservoir of archaeological information which has been much neglected in the past. The few excavations which have been attempted have usually seemed unrewarding unless the related wheelhouses of the Northern and Western Isles are taken into account, and in general, investigators have been more concerned with hillforts, brochs and duns, which seem to represent the dwellings of the aristocratic elements. Of late years, however, current opinion has swung away from facile explanations of cultural changes in terms of mass invasion; what seems to be particularly needed at this time is fresh evidence which does not over-emphasise the contribution of small aristocratic movements, but relates to the common people, many of whom must have been the descendants of the population of the Bronze Age or even Neolithic times.

THE PROBLEM IN SUTHERLAND

The county of Sutherland appears to be of special significance in the study of hut-circles. The RCAM *Inventory*⁶ was one of the first to be published in Scotland, dating back to 1911, and is far from a complete record but even so it lists about 250 localities where hut-circles occur either as single sites or in groups. The recently published sheets of the new 6 in OS map suggest that this number could be doubled, and there may well be something of the order of 2,000 hut-circles surviving. Unfortunately the ploughs of the Forestry Commission can do very extensive damage and the work of the Ordnance Survey cannot be completed too soon. The sites occur only rarely along the floors of the straths and seem to be infrequent above about 1,000 ft (300 m) OD. Much of the intervening ground, which includes extensive stretches of plateau, is moorland with a cover of peat and it is here that the great concentration occurs.

Appearing in close association with most hut-circles, groupings of low overgrown cairns are found which the writers of the *Inventory* suggested⁷ were heaps of stones cleared from the adjacent ground to provide patches of arable. Often the heaps were indicated as ‘tumuli’ on the old OS 6 in sheets; they are so numerous that they have perforce been omitted from the new 6 in map. Great numbers of these cairns with accompanying hut-circles may occur together, for instance to the E side of middle Strath Naver between the old Clearance settlements of Truderscaig (NC 703342), and Rosal (NC 690415). An excellent example is to be seen in an easily accessible locality at Bettyhill on a sandy terrace W of the mouth of the Naver (NC 700612). Here the ground is free from peat and an old land surface with cairns and hut-circles seems to have been exposed recently from beneath a cover of blown sand.

The *Inventory* notes⁸ that, in addition to the hut-circles and cairns, another much rarer combination occurs in the form of hut-circles with trailing banks of stones and boulders marking out what appear to be minute fields which are devoid of the clearance cairns. These alignments are to be found in association with a rather different type of hut-circle which is more strongly constructed and tends to have a curious thickening of the wall at the entrance; a short souterrain may be attached. Excellent examples are to be seen to the W of the Kildonan Burn (NC 915225).

This combination of hut-circles and clearance cairns or boulder alignments occurs in many localities outside Sutherland and Graham has contributed a valuable paper which discusses the *cairnfields in general*.⁹ Abercromby described a site with both cairns and alignments in Aberdeenshire¹⁰; Thorneycroft discussed the association in Perthshire¹¹; Fenton notes the same combination in southern Scotland.¹² Nowhere, however, have the hut-circles, cairnfields and alignments been reported on such a scale as in central and eastern Sutherland. Until our investigations started, only two sites within the county had been excavated and the reports were so vague as to be almost useless.¹³

THE KILPHEDIR LOCALITY

Kilphedir lies some 5 miles (8 km) up the Strath of Kildonan from Helmsdale on the E coast of Sutherland (fig 1). The strath is here about $\frac{1}{4}$ mile ($\frac{1}{2}$ km) wide and is some 100 ft (30 m) *OD*. At this point, the main Helmsdale River is joined from the N by the Kilphedir Burn which has cut a deep gorge through fluvio-glacial deposits. On either side of the gorge a distinct shoulder occurs at about 300 ft (91 m) above which the ground becomes more gently sloping, before it rises in great sweeps towards the mountains on the Caithness border. On this plateau which is developed over granite, a mantle of peat has formed and a heathery moorland is characteristic (pl 12). Downhill this often gives place to scrubby oak and birchwood, with pasture on the flatter stretches near the river. There is little cultivation; sometimes a shooting lodge or shepherd's cottage occurs along the Strath, as at Kilphedir itself, but apart from these and an occasional farmhouse, the desolation recalls the complete depopulation of the Clearances of 1813-20.

The area within a radius of about half a mile (800 m) from the mouth of the Kilphedir Burn seems to have formed an attractive pocket of land for a very long period. On a low terrace on either side of the burn as it joins the main Strath, there are the remains of the two small Clearance settlements of Kilphedir and Chorlich. Just above the edges of the gorge on either side are groups of hut-circles with both the clearance cairns and boulder alignments. Three other groups of hut-circles are located a little further upstream and others occur to the E where two denuded burial cairns are also traceable. The whole district is dominated by a broch, set within a formidable ditch (*Inventory* no. 307), at a height of 475 ft (145 m). In all, a score of hut-circles can be recognised, one of which undoubtedly has a short souterrain attached (*Inventory* no. 328) and another is probably similar (no. 327) (fig 15).

Why this pocket of land proved attractive to settlement over a long period of time is not readily apparent, but other highly localised areas of long-continued settlement occur elsewhere in eastern Sutherland. One is to be found at the neighbouring Caën burn to the E (ND 013183), while others appear at Edrable immediately across the Helmsdale River (NC 983180) and at Kilournan, $3\frac{3}{4}$ miles (6 km) upstream (NC 930188).

THE SITE

Detailed investigations were primarily concerned with a well-defined area lying between the steep slopes of the Kilphedir glen to the E, the side valley of the Clais Rath Fhinn to the NE, and

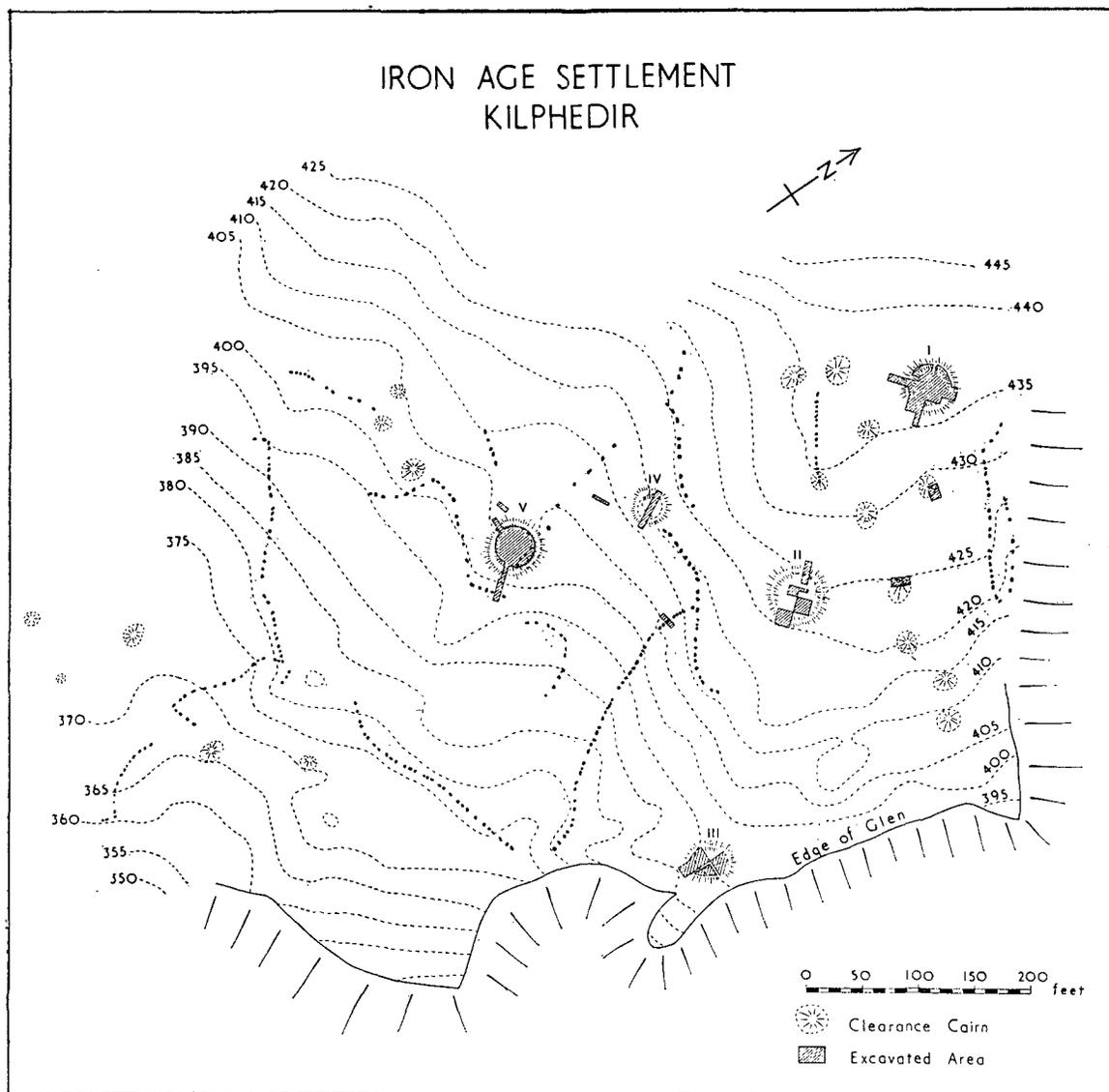


FIG 2

the open moor to the SW (fig 2, pl 12a). Traces of what appear to be ancient cultivation plots are visible between rough banks and alignments of boulders (Sutherland *Inventory* no. 325). We are indebted for the general plan (fig 2) to Mr Gordon Petrie of the Topographic Science Sub-Department of Geography at the University of Glasgow; it is much generalised as in the time available he was unable to show all the vague spreads and irregularities. Rather more detail has been added to the plan of the arable ground discussed later (fig 14). In addition to the alignments of the boulders, Mr Petrie has also shown a number of clearance cairns, mainly in the NE and SW where the alignments are least definite; again the plan omits some doubtful examples. Between the banks and amongst the cairns, the ground is relatively free from boulders. The area cleared of

stones in this way measures approximately 300 yards (260 m) N-S and 180 yards (160 m) E-W, though the limit is often very indefinite and irregular.

When operations commenced, four hut-circles were visible and a fifth was located during the survey; they have been numbered I-V for reference (fig 2). Hut-Circles I and II were 35-40 ft (10.7-12.2 m) in internal diameter and, though rather ill-defined, they were clearly similar in form. A circular floor had been made by quarrying into the rising ground at the back and spreading the spoil on the downside. The remains of the wall were overgrown but appeared to consist of earth and stones and were not always continuous, especially behind the quarried face at the back. Hut-Circle III was smaller, stood in isolation near the edge of the Kilphedir glen, and was markedly hollowed out at the centre. Hut-Circle IV was very small, being only 20 ft (6.1 m) in diameter internally, and was so ill-defined that it had been overlooked previously. Hut-Circle V was clearly distinct from the others as it was very strongly built and has a long entrance passage. It was illustrated in the Sutherland *Inventory* (no. 325, fig 40) where a Y-shaped wall of boulders is shown running into the centre from the back.

THE SOIL PROFILE AND STRATIFICATION

A brief comment is necessary on soil conditions from the point of view of natural stratification, as few records exist for Scotland of excavations in strongly podzolised soils with peat, such as characterise the site at Kilphedir.

Broadly speaking, the surface everywhere within the site consisted of 3-12 in (8-30 cm) of peat, normally overlying a layer of dark grey earth with bleached grits. Outside the hut-circles this layer gave place to a dark, rather mottled chocolate-brown coloured earth at the base of which, perhaps 12 in (30 cm) from the top of the peat, came a weakly developed iron-pan. The latter is a characteristic phenomenon at this altitude in the Kilphedir district and should be referred to as the *regional* iron-pan. Below came a sandy clay with much gravel, which had become indurated by natural agencies to such an extent that considerable force was required to break through it. In fact, the inhabitants of the hut-circles had rarely penetrated it except very locally when making post-holes. In and around the hut-circles, disturbed earth and occupation material alike had been subjected to renewed podzolisation after the settlement had been deserted and a 'local' iron-pan was often traceable, above the horizon of the regional pan and frequently at the level of the old floor. Usually the 'local' iron-pan appeared as a thin, dark brown deposit which roots could penetrate, but in Hut-Circle I it was so strongly developed as to resemble a metal plate; here, the root of a bush or tree which had been mineralised *in situ* had formed a cast resembling the socket of a tool. This is the *secondary* iron-pan as indicated on some of the sections (fig 4). Underneath it, the lower lying deposits of occupation material, which might be still flecked with carbon, could appear as a bright yellow or orange layer above the regional iron-pan. In Hut-Circle V, where the soil was looser, the iron-pan was barely traceable and the occupation material was dark and more normal by southern standards.

It is to be emphasised that these purely natural horizons - the grey-gritty layer, the iron-pans, the bright yellow and orange colours and the indurated layer - completely dominated the soil profile in our sections except in Hut-Circle V. They could traverse obliquely both occupation material and floor-levels, and only the lowest indurated layer had much significance as an archaeological horizon, corresponding to 'bed-rock' under other conditions. Nowhere, however, did we find evidence of a blanket of peat in existence at the time of the occupation; the peat had obviously formed over the hut-circles and the cultivated plots subsequent to the occupation.

Mr J C C Romans from the Macaulay Institute for Soil Science, believes that the iron-pan

formed in relatively open moorland and that the absence of the iron-pan below the 200 ft (62 m) contour, probably indicates the presence of woodland along the Strath at the time when the pan was forming on the moor above. This point is of significance in considering the location of the settlement on its very exposed site beyond the upper limit of cultivation as it has existed in more recent centuries.

THE DETAILED SURVEY

Hut-Circle I (figs 3–5; pls 12b–13b)

Hut-Circle I with a diameter of as much as 40 ft (12·2 m) from bank to bank could easily be mistaken for a stock pen; indeed, the new 6 in map of the Highlands, Sheet NC 91 NE, indicates an 'enclosure'. Excavation showed, from the presence of a hearth and domestic refuse including numerous potsherds, that a substantial round-house had existed here. It stood on a gentle SE slope on some of the highest ground on the site. Natural drainage before the peat formed must have been good, but there appears to have been no shelter from the wind. Outside the circle to the W, there was a shallow superficial depression in the peat suggesting an underlying drainage channel. A section, however, showed that the regional iron-pan which predates the house, followed the profile of the underlying hollow which must therefore be natural. Inside, the peat was 6–10 in (15–25 cm) thick and occasionally over 12 in (30 cm). A very well developed iron-pan occurred in the E quadrant, and both here and above the peripheral wall in the W, incrustations of bush or tree roots with the iron-pan showed that at least shrubby vegetation and possibly trees had colonised the remains of the house after it had been abandoned but before there had been time for the peat to form.

The floor measured 37 by 34 ft (11·2 by 10·4 m) internally, with the long axis on the line of the entrance in the SE. The sloping site had been levelled by quarrying at the back down to the indurated layer which at its maximum depth below the surface was about 18 in (46 cm); the soil had been spread over the opposite part of the interior and also had been laid down as a shallow apron outside the doorway. This crescent-shaped area in front of the entrance had then been cobbled for a distance of 10 ft (3 m) outward, to provide a hard surface where traffic would have been concentrated. It was impossible to determine precisely where quarrying gave place to filling as the original surface had obviously been irregular. At least in the final stage of the occupation, the cobbled floor of the hut had lain approximately where the gritty, dark grey layer had subsequently formed just below peat, but flecks of carbon and potsherds were found for 6–12 in (15–30 cm) below that horizon, in a rather sandy earth which could be bright orange or yellow-brown. Where the floor had been dug down to the indurated layer, no cobbling had been necessary.

The entrance, which was about 3½ ft (1·07 m) wide, was roughly paved and walled on either side by lines of large slabs somewhat casually placed in position. The enclosing bank of the hut, which we sectioned in three places, represented the remains of a freestanding wall of boulders and earth. It was some 4–7ft (1·22–2·13 m) wide at the base and was traceable all round except behind the deeper part of the quarried sector opposite to the entrance. Here, only a single row of boulders rose above ground level but the quarried face seemed formerly to have had a stone revetment to replace the free-standing wall elsewhere. Our section across the bank in the SW, where the stonework was apparently intact, gave the clearest indications of the wall structure. The maximum height of the placed stones was no more than 3 ft (90 cm). The base consisted of a layer of boulders extending across the full width, without a foundation trench, and lying either directly on the old ground surface or, as in the E of the house, on a low mound of friable earth. Rising above this base and forming both the outer and inner face to the wall, there was a double

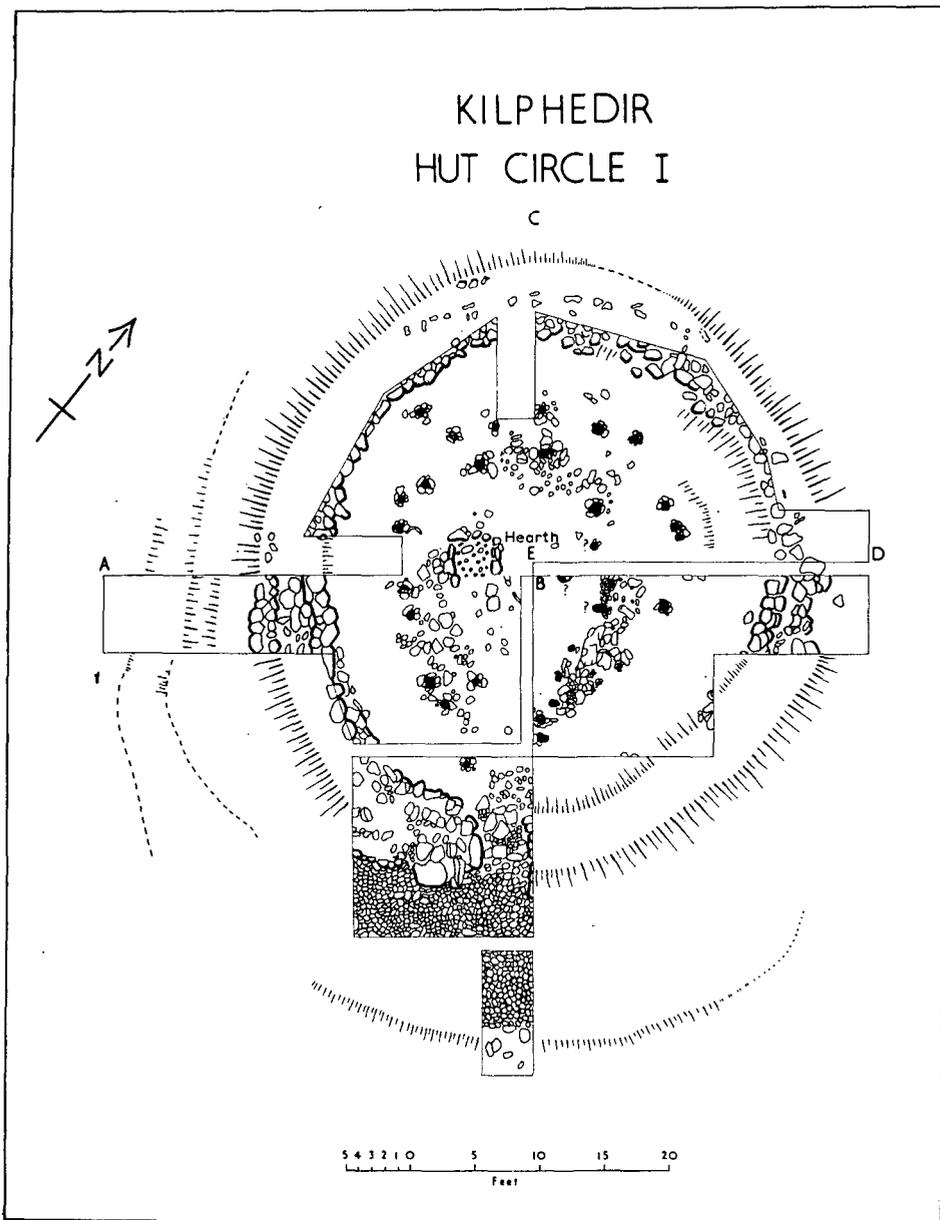


FIG 3

row of slabs or boulders, standing in each case, two slabs high. Between these double rows of facing stones and above the boulder foundation, there was a mass of brown friable loam forming the core to the wall. This earthen core appeared in all the wall sections in Hut-Circles I, II and IV alike. It could perhaps represent in some way the remnant of a sod wall rising above the stonework, but it seemed to lie just where the rafters of a conical roof would have rested and the earth may have originated as thin sods used instead of, or together with a heather thatch. A slight earthy

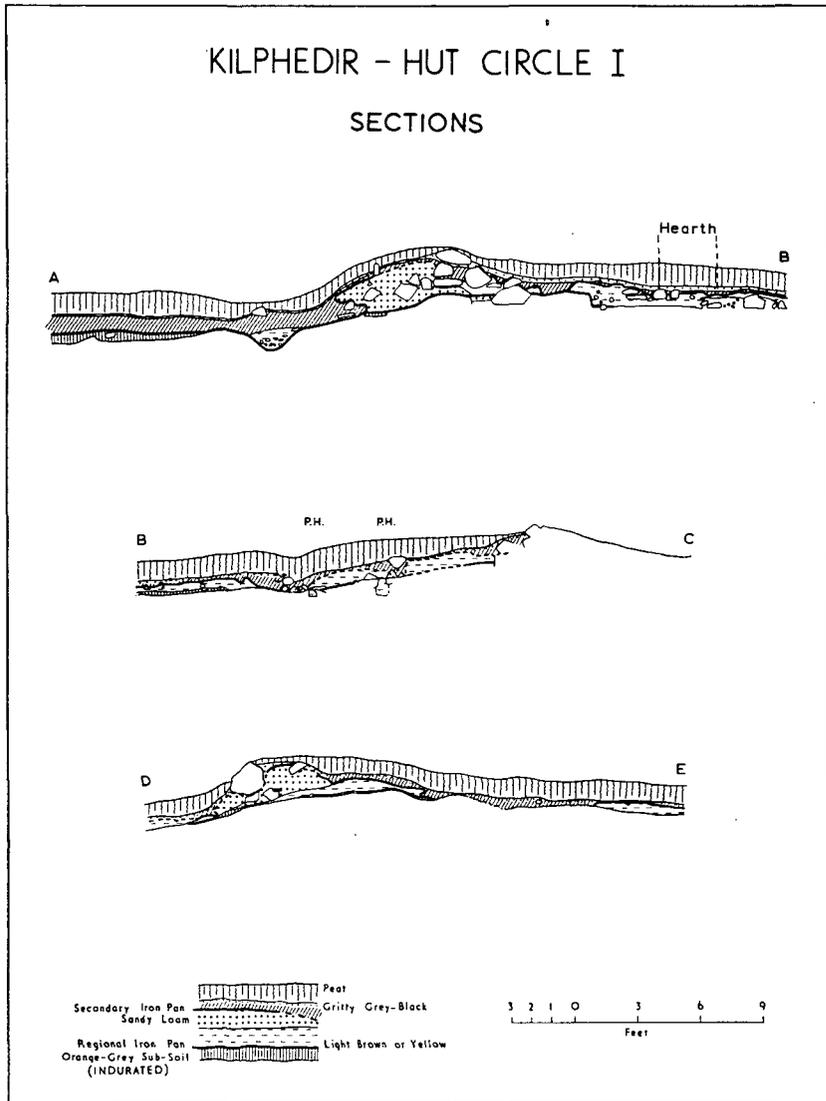


FIG 4

accumulation within the house, immediately below the peat and above the cobbles in the dark grey-gritty layer, may also require some such explanation.

Between the inner face of the wall and the centre of the house near the hearth, numerous post-holes or stone-sockets were found (fig 3). Each consisted of a setting of stones around a patch of relatively soft earth penetrating either into the indurated layer or into the stone packing of the floor. The post-holes varied in depth from 5-14 in (12-36 cm) and seemed designed for a pole not much more than about 4 or 5 in (10-12 cm) in diameter. They were at first not easy to recognise as the occurrence seemed haphazard, but it soon became clear that the majority had held in place the vertical poles forming a ring of supports half-way between the outer wall and the centre of the house, to hold up the rafters of a conical roof. It was also obvious that the ring had

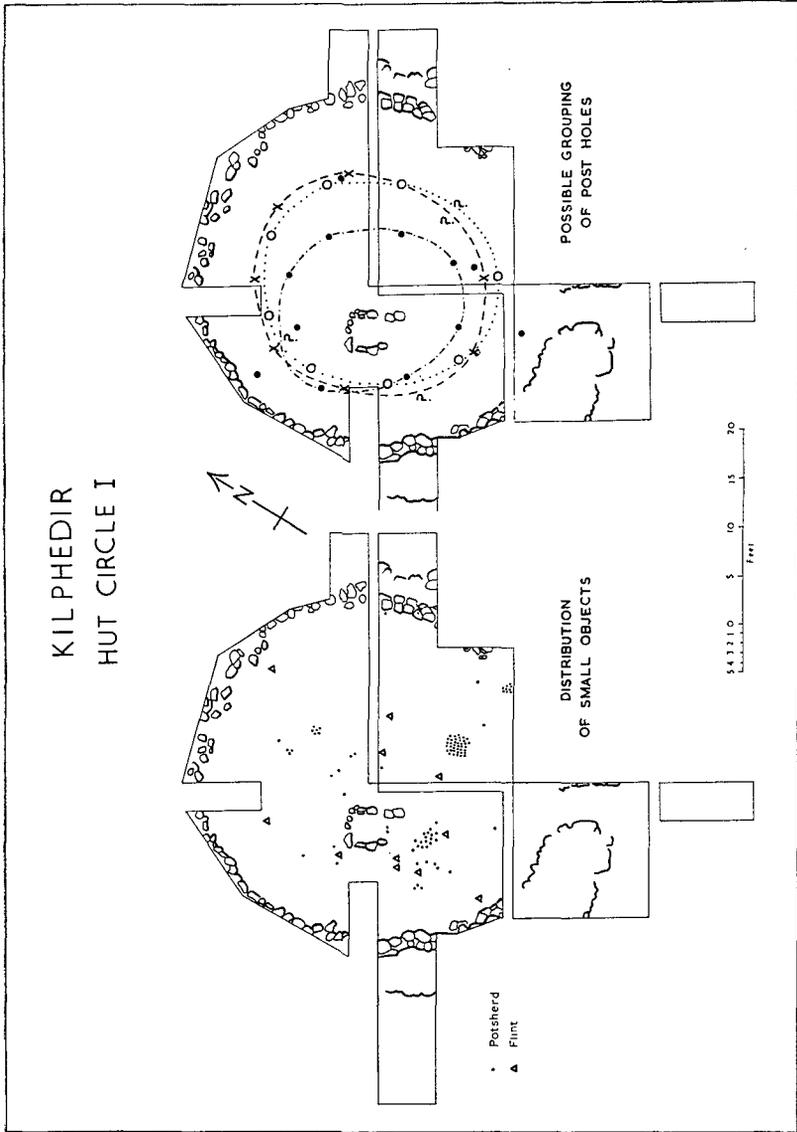
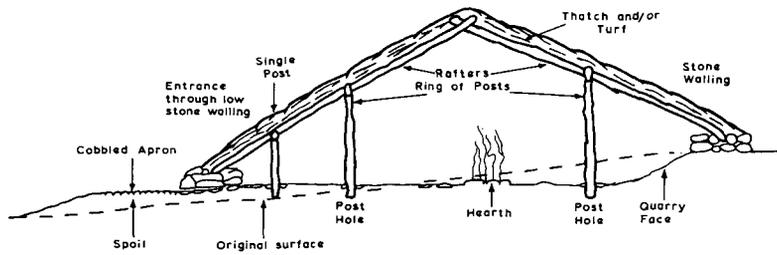


FIG 5



DIAGRAMMATIC RECONSTRUCTION OF EARLY HOUSE (HUT-CIRCLE I) AT KILPHEDIR

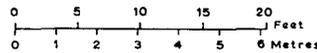


FIG 6

been replaced more than once, but there is room for difference of opinion in recognising a pattern. Three ovals are a possibility, as shown in fig 5, but gaps occur and it seems necessary to visualise the use of some of the sockets more than once. Two or three outliers do not fit the pattern at all, and yet they are unusually clear specimens. One to the left of the entrance just inside the hut-circle had a corresponding outlier in Hut-Circle II and could indicate a wooden doorpost reaching to head height and set back into the sloping roof, inwards from the passage through a very low encircling wall (see reconstruction, fig 6).

A central post does not seem to have been employed to support the roof but the hearth was nevertheless off-centre. It was roughly rectangular, measuring 4 ft 8 in by 3 ft 6 in (1.42 by 1.07 m); the cobbled surface was bounded by a low kerb. Immediately around the hearth, the earth was reddened and slightly carbonised, while flecks of charcoal occurred commonly over the floor of the house. Nowhere, however, was there any appreciable ash accumulation and only a very minute quantity of charcoal was noted.

The renewal of the inner ring of posts more than once would indicate an occupation appreciably longer than just one or two seasons. Moreover, the number of small finds was substantially more than might have been expected from a very temporary occupation. In the very acid soil conditions prevailing, unburnt bone and iron objects would disappear; the peat, which might have acted as a preservative for less durable objects, does not seem to have formed until afterwards. The distribution of the find spots within the house (fig 5) may show no more than a concentration near the hearth, but could indicate a high frequency within the innermost ring of posts as though this were the latest of the three.

Pottery About 140 sherds were recovered in all, though many were small fragments which had been trampled into the floor; minor differences in the fabric suggested that eight or even ten pots could have been involved.

The vessels seem to have been fairly straight-sided, expanding upwards to a simple rim. Except for one which is rounded, the rim sherds have been markedly flattened by pinching between the thumb and first two fingers, creating a kind of flange, usually on the inside but sometimes on both sides (fig 7 and pl 13b). Decoration is confined to one sherd with diagonal scratching across the flat rim (fig 7 no. 2).

The most distinctive group consists of about a dozen sherds with a slightly mottled grey fabric, hard and smooth, and soapy to the feel by reason of a plentiful addition of steatite grits. A nearly complete flat base, 3.3 in (84 mm) in diameter, with parts of the lower wall was recovered (pl 13b), together with two rim sherds, one of which was decorated. The flattened rims and

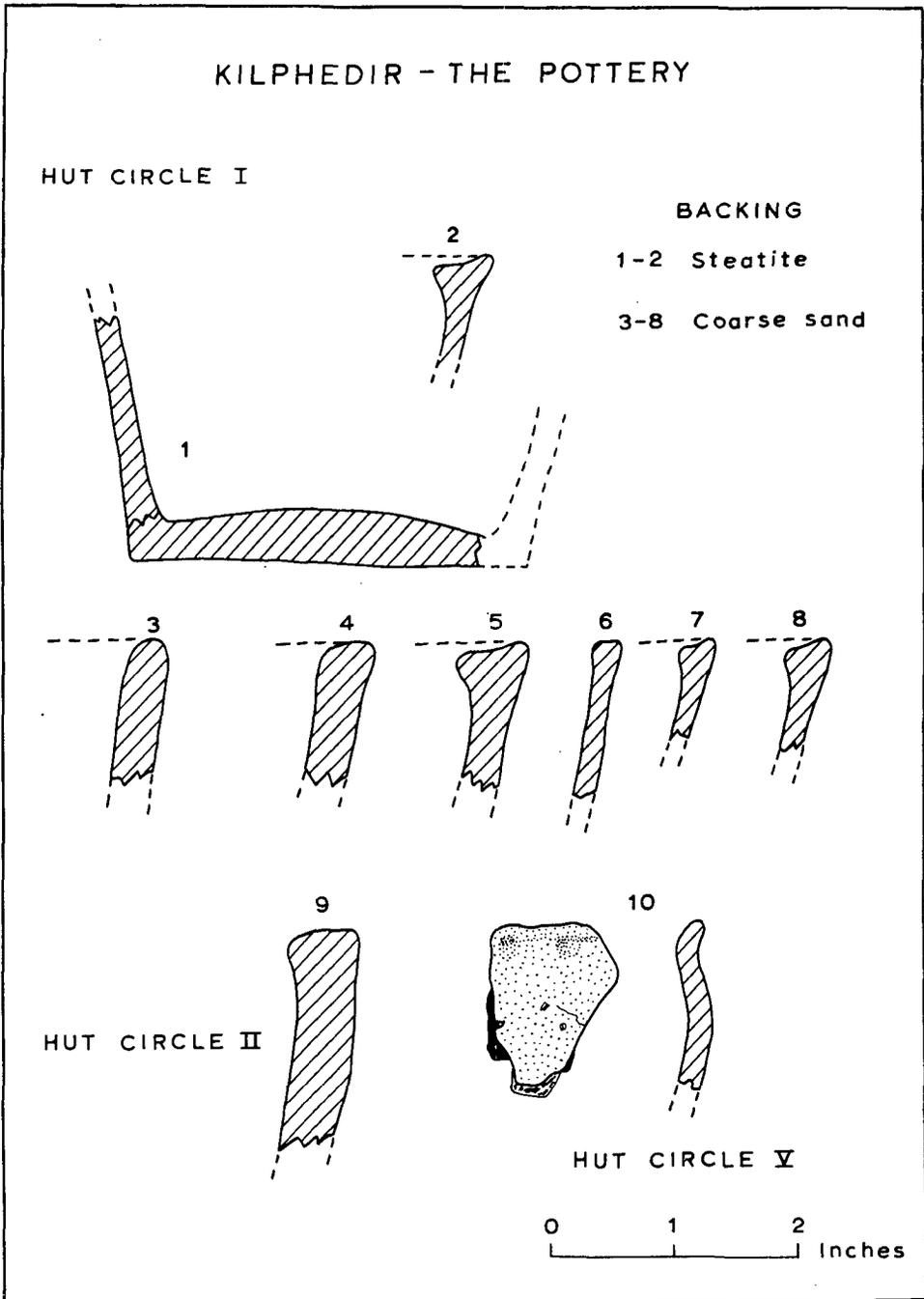


FIG 7

steatite admixture might recall the sherds from the pre-broch round-houses with souterrains at Jarlshof¹⁴ but the fabric at the latter site is thick and coarse in comparison and can scarcely be cited as a parallel. At Kilphedir the surface of the sherds with steatite backing is so finely smoothed that it almost suggests a dull glaze and the technique could have been used for purely aesthetic reasons. Steatite is a fine grained talc which is rather rare in occurrence but is found in small quantities in a number of different localities in Sutherland. It occurs in upper Strath Naver and also some 30 miles (50 km) across the hills from Kilphedir on Loch Shin.¹⁵

The bulk of the pottery from Hut-Circle I is brownish buff in colour and contains a plentiful mixture of what appears to be coarse sand derived from the local granite. Most fragments are as rough as an abrasive, though some examples have been wet-smoothed. Several cooking pots with walls up to $\frac{1}{2}$ in (12 mm) thick and with a diameter of nearly 1 ft (30 cm) at the rim are represented. Another group of about 50 sherds are thinner and smoother outside and are often blackened with soot. Finally there is another group of about 50 found together to the SE of the hearth almost on top of the natural soil, which is very thin walled, 0.175–0.2 in (4.4–5 mm), rather smooth and with finer sand. Three very small rim fragments (fig 7 nos 6, 7, 8) were poorly formed and the diameter could not be estimated.

Bone 5 minute fragments of burnt bone.

Flint 9 small shapeless flakes, all about $\frac{1}{2}$ in (12 mm) across.

Used Pebbles A rounded, coarse grained sandstone pebble $3\frac{1}{2}$ in (9 cm) in diameter and $1\frac{1}{2}$ in (4 cm) thick, was well smoothed on one flat face. Another elongated pebble was cracked across and may have been used as a smoother. Pebbles cracked by heat, which often occur in number on Iron Age sites, were noticeably absent.

Hut-Circle II (figs 8, 9; pl 13c)

The second house lies 70 yards (64 m) to the SSE of Hut-Circle I on a well drained but exposed site. The dimensions are slightly greater than in Hut-Circle I, being approximately 39–41 ft (12–12.50 m) internally (fig 8). Superficially there was a strong resemblance between the two and much the same natural horizons were traceable in the soil profile beneath a layer of peat. A freestanding wall appeared behind the quarried face opposite the entrance; on the W, the encircling bank was barely perceptible. Our excavations were only partial; two 14 ft (4.27 m) squares were opened in the first year and a section was cut through the back wall (fig 9), but small finds were absent and attention was then concentrated on Hut-Circle I. The hearth was subsequently located by a special excavation to make sure that the circle was more than a stock pen.

The section through the freestanding wall is difficult to interpret as the inner face had fallen forward and some slip appears to have occurred on the outside. Earth in the core of this low wall was again characteristic. Clearly, however, the house floor had been quarried to a depth of between 2 and 3 ft (60 and 90 cm). The hearth was very fragmentary but a small area of ash left no doubt of its identification in almost precisely the same relative position as in Hut-Circle I. The entrance was slabbed rather than cobbled and was $5\frac{1}{2}$ ft (1.68 m) wide, though it was poorly outlined at the sides. The position of an outlying post-hole on the left on entering again emphasises the likeness to Hut-Circle I. There can be little doubt that occupation was more or less contemporaneous. Scarcely any domestic rubbish was observed, and bearing in mind the fragmentary hearth, this might indicate a secondary usage as a stock pen.

Pottery One rim sherd was found against the inner face at the back. It was from a cooking pot, diameter about 1 ft (30 cm), $\frac{1}{2}$ in (13 mm) thick and with a flattened, flanged rim (fig 7 no. 9). The vessel had been ill-fired and the sherd is crumbling, but there is no doubt that it is identical with some of the sherds from Hut-Circle I.

Bone Part of a burned tooth, probably of a large mammal.

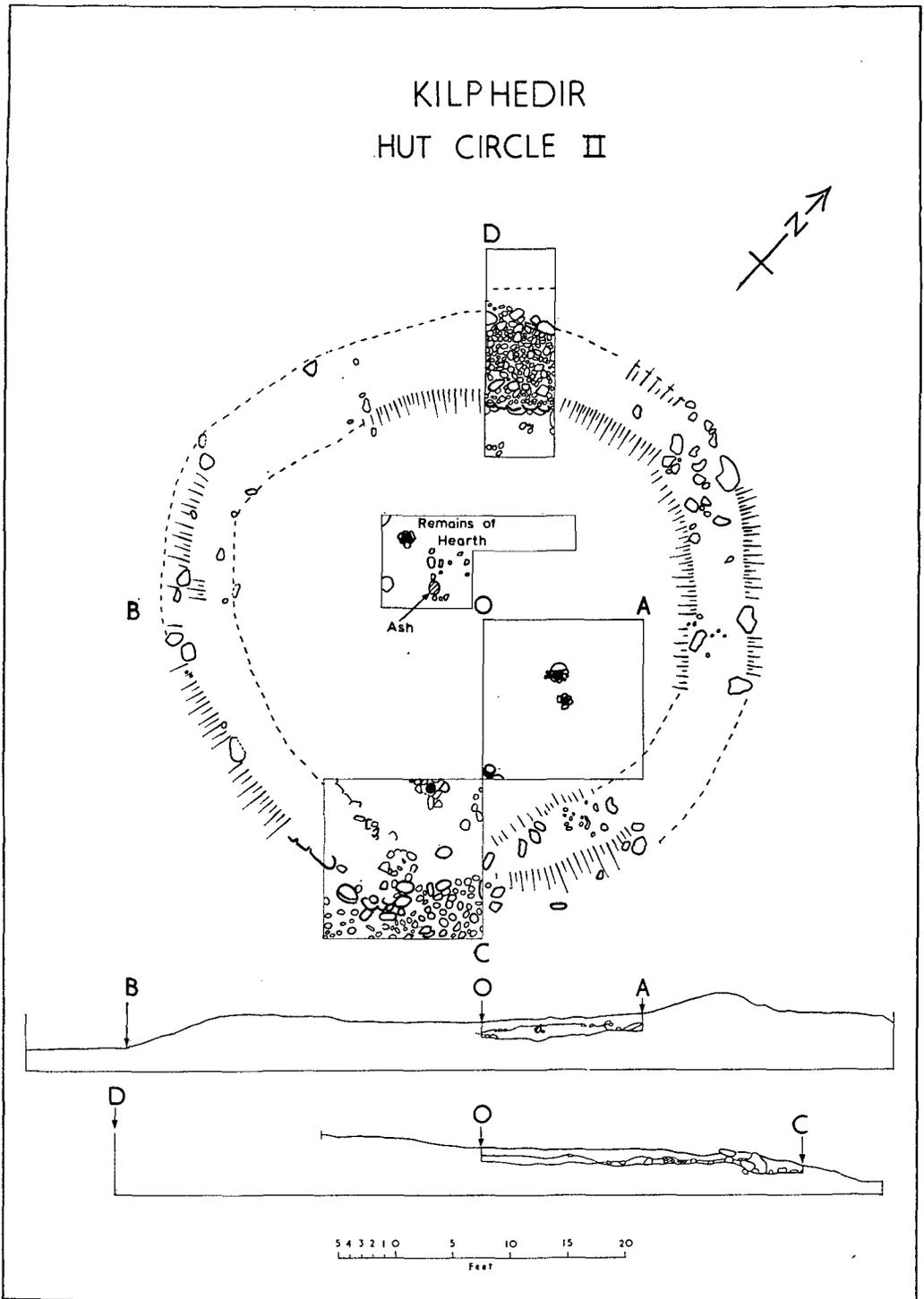


FIG 8

KILPHEDIR – HUT CIRCLE II

SECTION

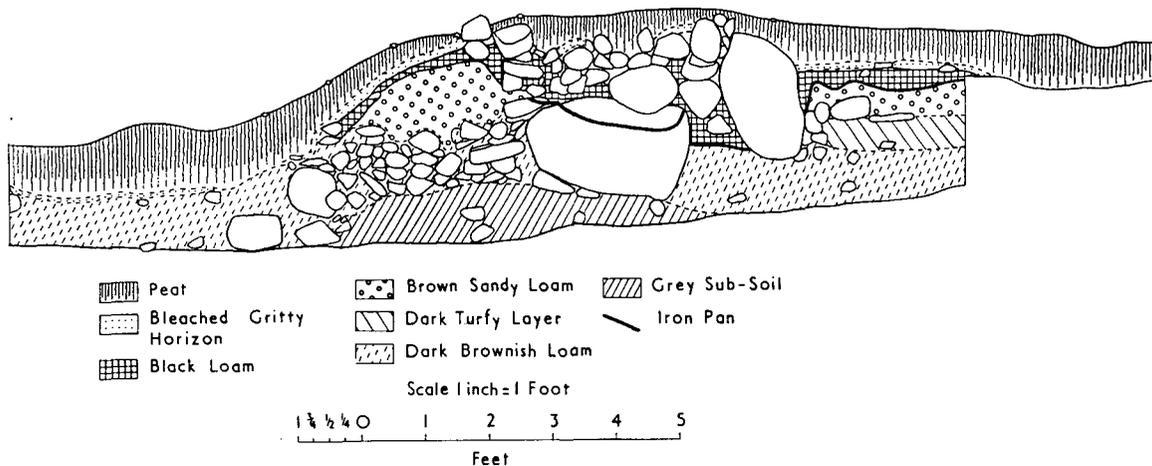


FIG 9

Hut-Circle III (fig 10, pl 14a)

This hut-circle is exceptional because of its small size and markedly oval shape, 32 by 27 ft (9.75 by 8.23 m), and also it is located almost on the lip of a precipitous slope down to the Kilphedir Burn. Moreover, it was constructed within a natural saucer-like hollow between morainic hillocks without the usual artificial platform for the hut walls. Circles of this appearance seem rare in Sutherland and there was some doubt as to whether it was contemporaneous with the others. Little attention was paid to it until 1968; one of the reasons for excavating it was, if possible, to obtain charcoal for dating as only very small and possibly contaminated samples were available from Hut-Circles I and II.

Perhaps because of the better drainage conditions on the morainic material and on the edge of the glen, the soil profile proved to be somewhat different from that of Hut-Circles I and II. There was the usual thickness of 6–10 in (15–25 cm) of peat, which was deeply covered with old heather, and beneath came the stained grey earth with bleached grits. Iron-pan formation proved to be very patchy indeed and scarcely any ‘local’ iron-pan had been deposited after the close of occupation. The older ‘regional’ iron-pan occurred in restricted but quite thick accumulations at the upper limit of the indurated layer in the coarse morainic material forming the bottom of the hollow. This upper limit was exceptionally irregular and was diversified by several large boulders.

The photograph and plan show that for excavation, Hut-Circle III was divided into four quadrants. The NE and SW were excavated down to the indurated layer, but two 2 ft (61 cm) baulks were left in the SE sector, while the NW was untouched. The entrance was excavated by extending the SW quadrant.

The grey gritty layer beneath the peat had been somewhat problematical in the two previous circles; partly its character depends on the fact that it is leached, but the rounded grits rather differentiated it from normal occupation material. A possible explanation had seemed to be that it was the remnants of roofing material, perhaps of turves placed on the rafters. In

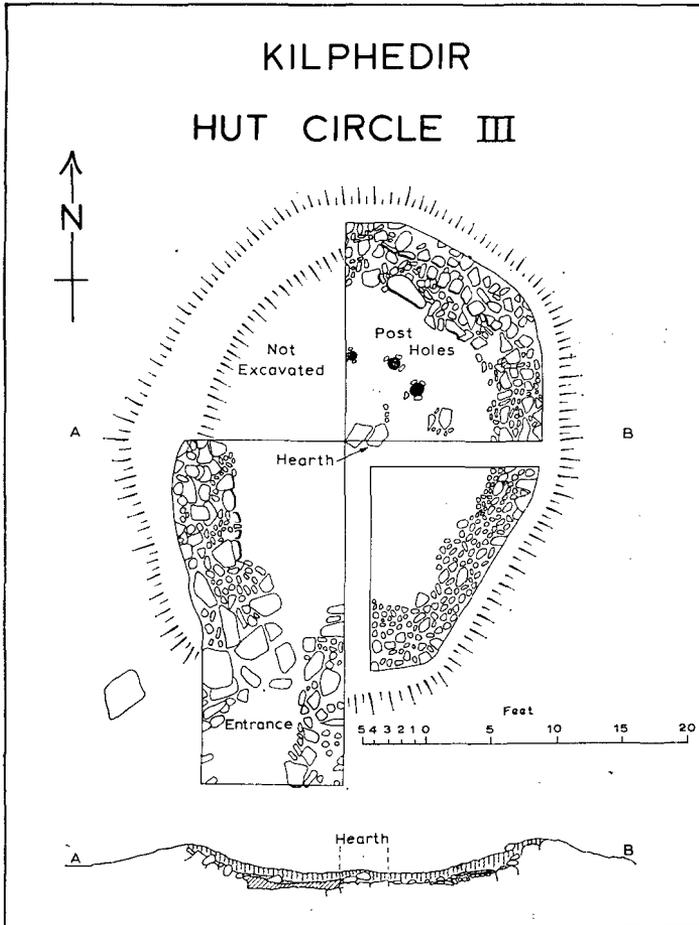


FIG 10

Hut-Circle III, however, this gritty layer was noticeably thick against the peripheral walling and consequently may have been the remains of an earth luting of the dry-stone masonry.

The floor of the hut measured 21 ft EW by 25 ft NS (6.40 by 7.60 m) and had been constructed by smoothing out the irregular surface of the natural hollow. There was little sign of quarrying and the source of the filling material is rather problematical. The floor had eventually consisted of a cobble and earth surface markedly dished at the centre. The depth of the filling was as much as 1 ft (30 cm) in one or two pockets. Potsherds occurred under the filling, presumably because they had been thrown away during the actual levelling operation; other sherds of the same type came from the floor itself.

The irregularity of the top of the indurated layer and also of the filling material made the recognition of post-holes unusually difficult. Only three or four rather doubtful ones were plotted in the NE sector. Clearly, however, there was no central post-hole, for two granite slabs placed side by side and cracked with heat represented a crude hearth in the very middle of the floor; remains of peat ash occurred on and along the N side, but there was no kerb. A flat slab, presumably forming a working surface, had been placed in position half-way between the central hearth and the wall to the E.

Charcoal, mainly fragments from small branches or twigs, was found on the floor of the hut and especially around the hearth. It was interpenetrated with rootlets but these must represent the vegetation which colonised the floor at the end of the occupation and cannot differ seriously in age from the charcoal. This point is important because we are dependent on carbon from Hut-Circle III for dating purposes (see below, page 89).

The entrance was simple and very roughly constructed with large angular boulders most of which seemed to have slipped out of position, making impossible any attempt to establish the exact line of the walls. A flat slab or two and a little cobbling formed the only recognisable flooring. On the E side, an alignment of earth-fast boulders suggested a prolongation of the side wall beyond the limit of the hut-circle by about 8 ft (2.44 m). A somewhat similar alignment may have occurred on the W, but the whole structure was too ruinous to be certain.

The peripheral wall was not unlike those of Hut-Circles I and II though it was more ruinous, somewhat more roughly constructed and much rather loose rubble was involved, especially in the SE. Nor could a central earth core be clearly detected. In general, the width averaged about 5 ft (1.52 m) increasing to about 7 ft (2.13 m) in the NE. It stood about 2 ft (61 cm) above ground level and the debris did not suggest an original height of more than about 3 ft (90 cm). The centre of Hut-Circle III was sunk about 1 ft 6 in (46 cm) below the ground level at the periphery of the floor (see section fig 10), which would allow more headroom within this relatively small dwelling. In the NE sector, where the walling was wider than usual and very well preserved, the method of construction was clearly indicated; a double row of boulders (see pl 14a) both at the inner and outer face had been laid down, much as in the case of the western walling of Hut-Circle I.

In all, there are a number of minor features which appear to differentiate Hut-Circle III from the others, but these peculiarities can be explained simply as adaptation to the unusual setting in a convenient natural hollow. There can be no doubt that this circle structurally is of the same type as Hut-Circles I and II.

Pottery Four wall sherds $1\frac{1}{2}$ – $2\frac{1}{4}$ in (38–57 mm) across were recovered, together with another eleven fragments. They all came from a large vessel or vessels at least 7 in (19 cm) across, with walls 0.3–0.4 in (8–10 mm) thick. There was no decoration but the pot had been wet-smoothed before baking. The form and the coarse gritted fabric are identical with those of the sherds from Hut-Circle II and with some of the sherds from Hut-Circle I.

Pounder The only other find consisted of two parts of a large, smooth pebble which had been cracked into at least three parts. It measured about 4 in (10 cm) across and was $1\frac{3}{4}$ in (4.5 cm) thick. It had been abraded along the rounded edges, presumably in usage as a pounder.

Hut-Circle IV (fig 11)

This lies between Hut-Circles II and V on a rather steep southerly slope upon which two of the long banks of boulders converge. Neither the Sutherland *Inventory* nor the new 6 in OS map (Sheet NC 91 NE) indicate the site and in fact it was traceable only as a slight bank with occasional stones. It is about 20 ft (6.1 m) in diameter internally and the main purpose of the trench cut across the structure was to confirm its existence.

A relatively deep quarry face nearly 2 ft (61 cm) in depth had been made into the rising ground to accommodate the floor which even then sloped markedly down towards the entrance in the SE. The encircling bank was no more than a stone foundation about 5 ft (1.5 m) wide but it could be traced very clearly round the upper side. A flat stone near the centre might have marked the hearth and there was one socket or post hole visible in the trench, set 3–4 ft (90–120 cm) from the wall at the back. No small finds were recovered but the presence of flecks of carbon in the floor and the general form suggested a dwelling in miniature of the type of Hut-Circles I and II.

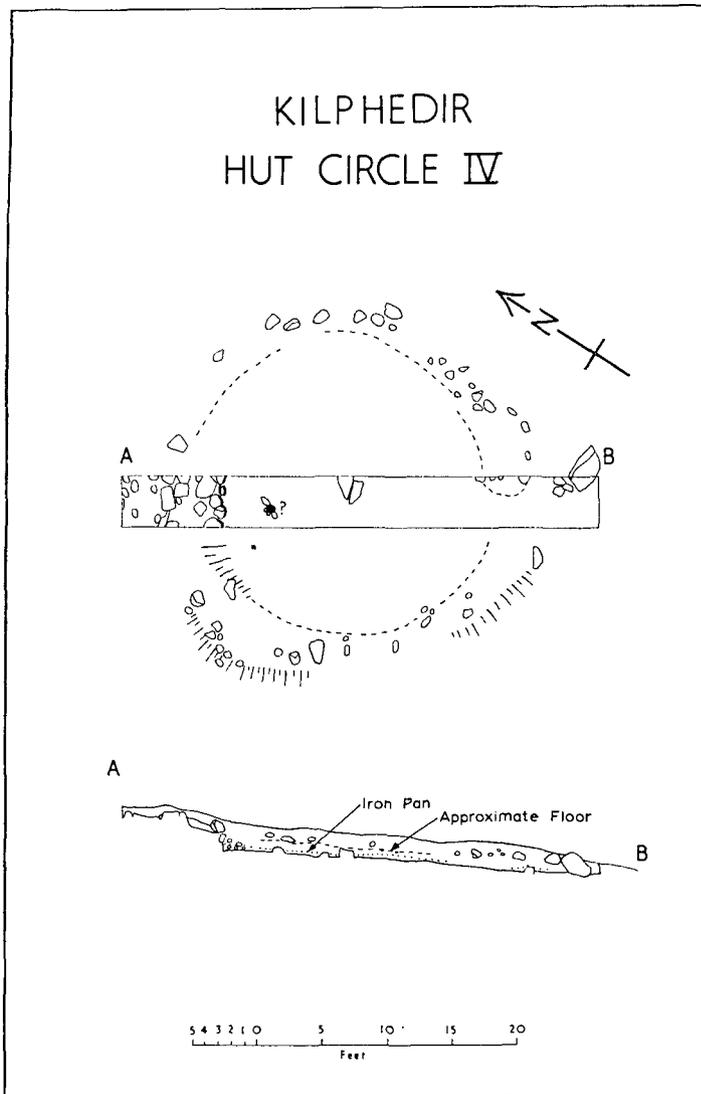


FIG 11

Hut-Circle V (figs 12, 13; pls 14b, c, 15a)

Hut-Circle V differed from the others in having such a substantial encircling bank that, by analogy with similar hut circles in the vicinity (*Sutherland Inventory*, Nos 318, 327 and 328, discussed in more detail later) a souterrain might be expected within it. There was evidence, too, of a long entrance passage with no counterpart in Hut-Circles I-IV. Moreover, the fifth circle seemed to be more intimately related to the boulder banks. The site was in a relatively sheltered position in what must have been a slight valley before the peat formed, with a trickle of water at the bottom. A clearly marked alignment of boulders came from away to the NW, curved round in front of the doorway and abutted onto the encircling wall just beyond the entrance in the SE (see fig 12). A second alignment parallel to the first again came from the NW and a short trench

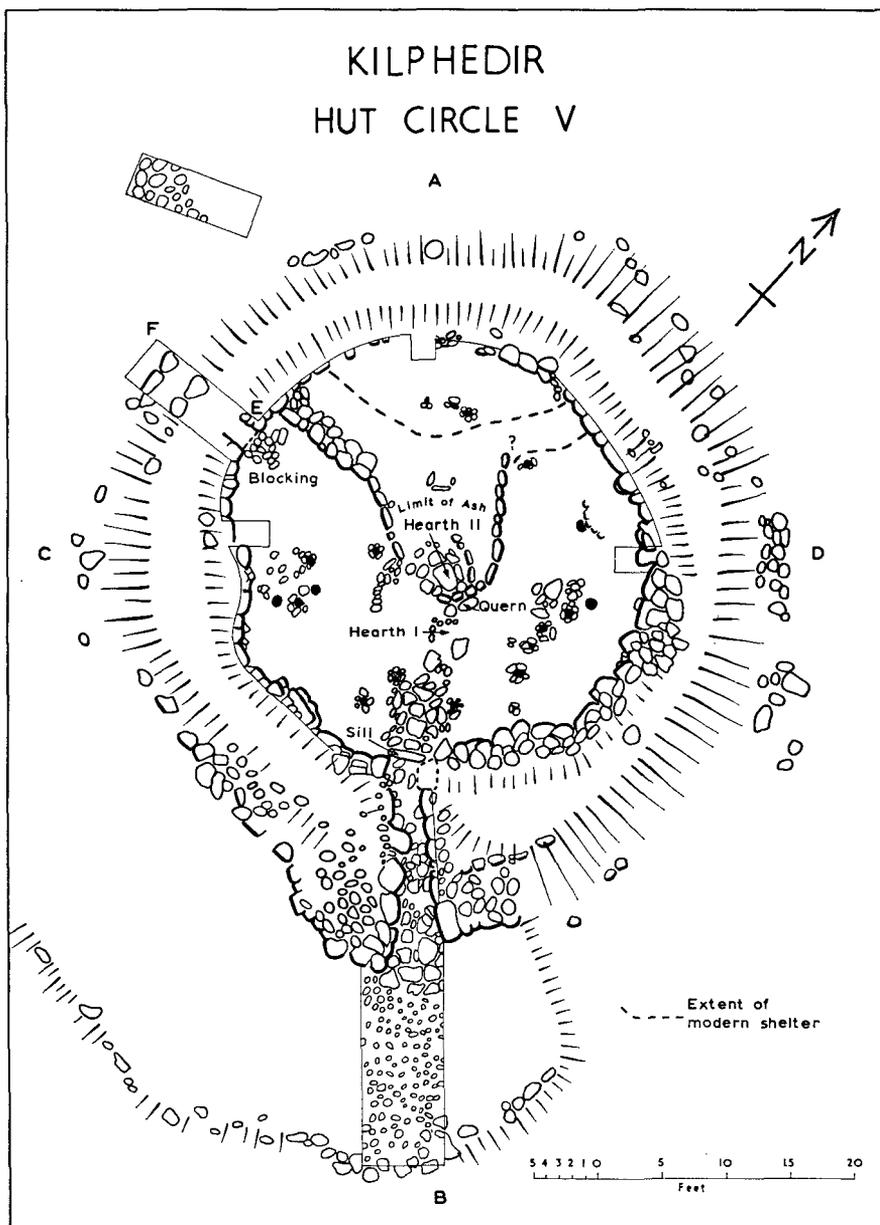


FIG 12

(actually cut in search of a souterrain), indicated that it too impinged on the encircling wall on the W side. Between the two, there was a tongue of ground which was slightly rough in appearance and seemed to be a direct continuation of the moor (see fig 14). The visual evidence is slight, but this could represent a route for stock from the open grazings on the hill into the round house. Finally, another boulder alignment came towards the circle from the N.

There is a small plan of Hut-Circle V in the *Sutherland Inventory* (no. 325, fig 40) in which the low boulder alignment in front of the doorway is indicated; this alignment is shown slightly

out of position and seems to stop short of the wall near the entrance. Inside the circle, a Y-shaped partition wall of boulders appears on the plan with the arms bonded into the back wall and the leg of the Y ending in the centre of the floor. A clearly defined entrance passage is also shown. By 1965, the passage had been almost obliterated with large stones and the Y-shaped walling seemed to have been disturbed since the time of the *Inventory* plan by the construction or renewal of lambing pens, and also, we suspect, by stone pulling on the part of enthusiastic antiquaries (pl 14c).

Similar loose, low walling is shown by the Sutherland *Inventory*¹⁶ in other circles of precisely the same type as Hut-Circle V, notably at Brae (129), Aberscross (279), Caën (318) and Knockarthur (499 and 500). In the examples we were able to inspect these internal dividing walls were of very loose stone and so wide that they could be regarded rather as platforms. With these other examples in mind, the Y-shaped walling was left intact as long as possible in case it was original, but in the end it proved to be modern. The arms of the Y were not bonded into the revetment: the loose boulders were clearly embedded in peat and were not beneath it: the whole overlay the debris of the last occupation, including the hearth. The difficulty was that the boulders were found to overlies, with disconcerting precision, a pre-existing kerb-like structure which ran outwards from the back wall to enclose the central hearth (fig 12). This co-incidence arose perhaps because a low bank, marking the line of the kerb below, had suggested a pattern of stock shelters to some herd who had then pillaged the inner facing wall of the circle for building stones.

Apart from the Y-shaped accretion, the central area of Hut-Circle V was covered with grass and bracken, not with heather as in the other circles. The peat, too, was very thin and the soil below was loose. There was scarcely a trace of a secondary iron-pan though the lower, regional iron-pan could be detected above a well-developed indurated layer. The difference in the soil profile as compared with Hut-Circles I and II was sufficiently strong to suggest to us a less mature development, but Mr Romans considers that better drainage on this particular site could provide adequate explanation.

After excavation, the entrance was such a prominent feature that it almost suggested the passage way into a small dun and the very strong encircling bank reinforced this impression. Perhaps Hut-Circle V is the 'rath' in the Gaelic name of the trench-like valley to the N, the *Clais Rath Fhinn*. The extraordinary length of the passage, some 15 ft (4.6 m), was produced by a sudden expansion of the encircling wall of the house from its average width elsewhere of about 9 ft (2.7 m). This expansion was a secondary feature produced by adding about 7 ft (2.1 m) of walling to the original outer face, parts of which could still be discerned continuing at the old width. In its final form, the passage was 2 ft 3 in-3 ft 6 in (69-106 cm) wide and was outlined by large slabs on edge with smaller stones packed in the interstices. The SW side appears ragged on the plan (fig 12) because two slabs had fallen inwards, and also the inner corner stone on the NE side had slipped out of place; it was edged back into position and the outline is dotted on the plan. The floor was paved with large flat stones in which a decided break at about 11 ft (3.4 m) outwards, again suggests a late addition. There was an upstanding sill at the inner end, while outside cobbling was traced as far as the curving bank of boulders in front of the entrance.

The wall of Hut-Circle V was built of stone and earth, much overgrown with grass and heather. In general, it stood 3-4 ft (90-120 cm) high and measured 8-10 ft (2.4-3.1 m) across. The material was kept in place by large slabs or boulders at the outer foot, as shown in section E-F (fig 13), but inside there had been a revetment of large slabs or boulders placed on end, which was apparently a secondary feature with additional stonework above. In places, the stones had fallen inwards and the bank had slumped, suggesting that the revetment had not been securely bonded into the main structure. Originally the wall must have risen at least 5 ft (1.5 m) above the adjacent floor inside, allowing a much larger area of useful space than with the low-set roof of the

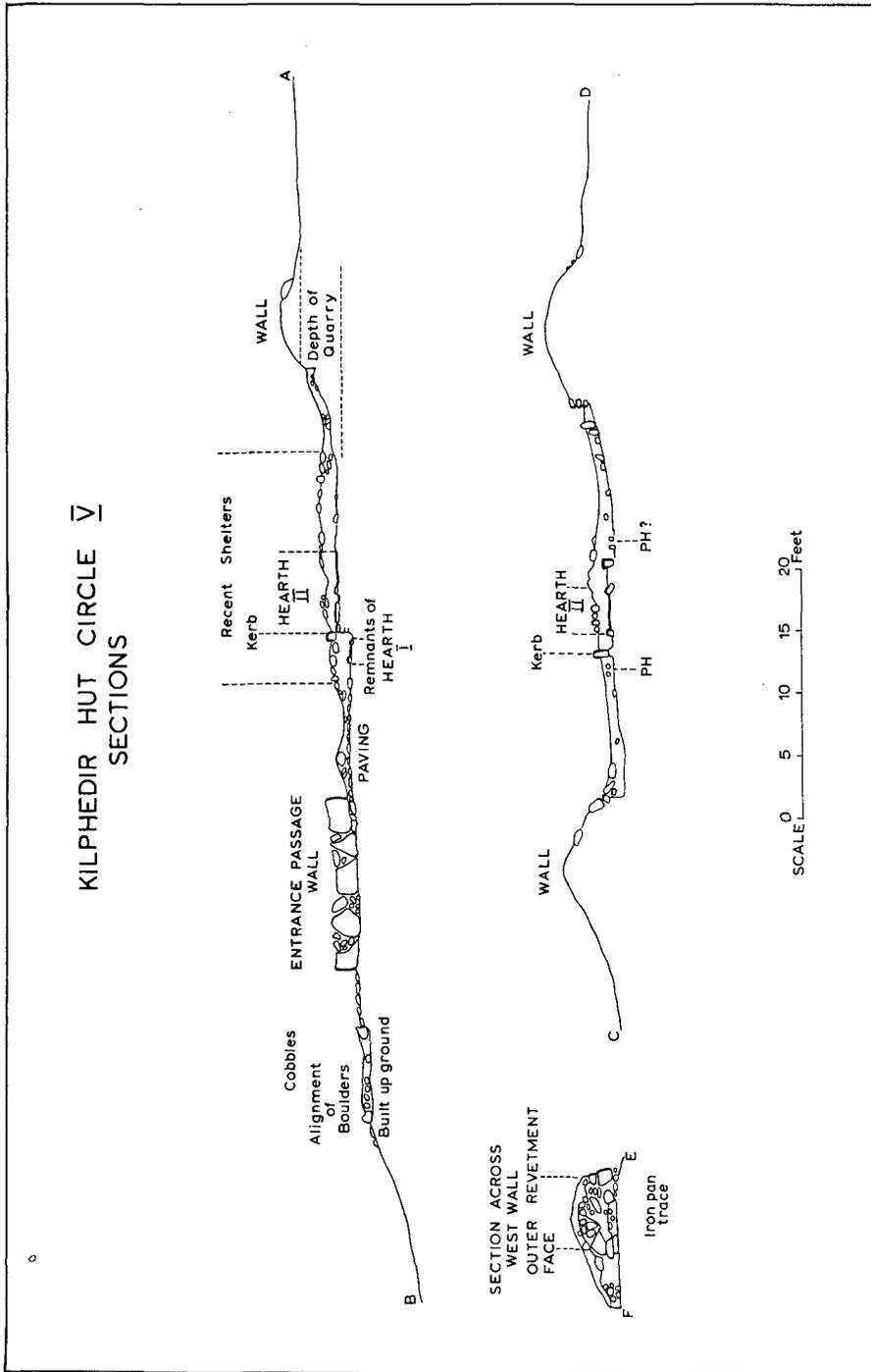


FIG 13

'simple' type of round-house represented in Hut-Circles I and II. Discounting slip, the diameter of the house after the probable reconditioning was 32-35 ft (9.8-10.7 m).

In the western sector of the revetment just to the south of the junction with the Y-shaped boulder shelter, two vertical corners 1 ft 9 in (53 cm) apart, indicated the entrance to an inter-mural cell or souterrain. It had been blocked with rounded stones which had spilled out on to the adjacent floor of the house. Walling could be traced inwards from the corners only for about 1 ft (30 cm). A trench was cut across the bank (E-F, fig 13); it revealed no abnormality on the N side, but on the S, there was a confused mass of loose stone. Certainly some structure such as an inter-mural cell had existed or had been partly built, but had subsequently been dismantled. It was impossible in the time available to strip the wall down to foundations in an attempt to establish the plan of the structure. A souterrain is not uncommon with this type of round house (Sutherland *Inventory* nos 318, 328) and sunken chambers seem also to occur (nos 344-5).

The floor of Hut-Circle V had been excavated into rising ground to the NW to a depth of about 3 ft (90 cm) and the material had been spread out in the entrance area as far as the boulder alignment outside. A slight natural hollow had been selected for the site of the house so that the regional iron-pan, when it had not been worn away by trampling, and the induration layer below it, dipped towards the centre of the house and the entrance where the occupation deposit was much deeper. Indications of occupation were found immediately below about 3 in (8 cm) of peaty sod, in the form of quantities of charcoal from branches of birchwood, some of it unbarked and 3-4 in (8-10cm) across. Apparently the roofing material had collapsed on to a still-smouldering hearth.

At the end of the occupation, the interior arrangement of this round-house was markedly different from that of Hut-Circles I and II. A well-laid pavement continued the flooring of the entrance passage towards, but stopped short of the central hearth (fig 12, hearth II). This lay within a curious alignment of slabs, carefully placed on end and curving evenly around the central area of the house, delimiting a tongue of flooring at a slightly higher level. The hearth itself was a circular setting of flagstones about 5 ft (1.52 m) across; a low kerb of small slabs on end could be detected to the NE but this had been destroyed in the SW apparently by stone robbing. The hearth was covered with ash which extended outwards over some flagging behind. The ash was in three distinct layers, an upper and lower deposit of black woodash and an intervening spread of friable orange brown material which was taken to be peat ash. On the flagstones beneath this ash and obviously contemporary with the hearth, there were two distinctive potsherds, one with an everted rim, differing from the wares found in Hut-Circles I and II (see below). A saddle quern lay in position near the hearth and just outside the kerb stones.

The purpose behind this alignment of stones coming out from the back of the hut is obscure. Unfortunately, the line had been somewhat destroyed especially in the construction of the lambing shelters in the NE. In the NW, however, on approaching the peripheral wall of the house near the blocked entrance to the presumed inter-mural structure, the stone alignment changed character and there seemed to be a double row of rounded stones as shown on the plan (fig 12).

Between the hearth at the centre and the pavement running inwards from the entrance, excavation was continued downwards into a lower stratum of occupation material and the rectangular corner of a low kerb was found. This was clearly recognisable as part of a hearth as it was accompanied by a distinct ash-spread. Although we did not attempt to dismantle either the central upper hearth, or the flagstones leading towards the entrance passage, there was no doubt of an earlier occupation represented by Hearth I (fig 12, 13). This would seem to confirm other evidence that the house had been extensively reconditioned for the last occupation. The earlier house presumably resembled in type those of Hut-Circles I and II.

A number of post-holes or stone-sockets had been noted and again there were suggestions of an altered arrangement, though the pattern was incomplete. From the plan (fig 12) it was possible to think in terms of an older ring, diameter about 24 ft (7.3 m), set at a distance of 3–5 ft (90–152 cm) from the wall face and comprising originally about 11 post-holes; these were traceable mainly in the E half of the floor at the horizon of the indurated layer. A later ring, diameter about 20 ft (6.1 m) and possibly associated with Hearth II, seemed to involve about 6 post-holes of which 5 could be recognised. Even so, some examples remain unplaced and any interpretation must be doubtful.

In summary it would appear that a house of the type of Hut-Circles I and II was subsequently modified to give the round-house of Hut-Circle V, with an inside revetment of boulders, a higher encircling bank and therefore with more utilisable floor space, and finally, with a very much extended entrance passage. If a souterrain or intra-mural cell existed, it belonged to an earlier phase than the final occupation.

Pottery No more than 8 potsherds were recovered. Two closely resembled the coarse sand-gritted ware from Hut-Circles I and II, and probably belong to the horizon of Hearth I.

On the flagging within the alignment of stones around Hearth II, there were two sherds which, while resembling some of the sand gritted pots of Hut Circle I in texture and colour, had significant differences; four other sherds seem to go with them. The clay was mixed with grits of a rather larger size, up to $\frac{1}{4}$ in (6 mm) across and the pot had been wet-smoothed. One sherd formed part of a slightly everted rim (fig 7 no. 10), diameter about $4\frac{1}{2}$ in (11 mm) with depressions immediately below the out-turned lip made with a blunt stick or bone, not with the finger-tips (pl 8). This could be paralleled from the Road Broch of Keiss (National Museum of Antiquities), the Crosskirk Broch and also from the Wag of Forse¹⁷ though not closely in the latter case. The design, however, is very simple and the real significance of this sherd lies in the contrast with the flat-rimmed wares of Hut-Circles I and II.

Saddle quern Found in association with Hearth II, this was a granite slab sub-rectangular in form, measuring 17 by $13\frac{1}{2}$ by $5\frac{1}{2}$ in (43 by 34 by 14 cm) and worn smooth by rubbing on the upper surface to a depth of about $\frac{1}{2}$ in (12 mm).

Pounders, rubbing stones and used pebbles Elongated pebble, 3 by 2 in (7.6 by 5.1 cm), faceted in places by rubbing. Elongated water-worn pebble, $4\frac{1}{4}$ by 2 in– $2\frac{1}{2}$ by $1\frac{1}{2}$ in (10.8 by 5.1 cm–6.4 by 3.8 cm) rubbed and chipped at both ends, especially the broader. Rounded pebble, $5\frac{1}{4}$ by $2\frac{3}{4}$ in– $3\frac{1}{2}$ by 2 in (13.1 by 7.7 cm–8.9 by 5.1 cm), with the broad end chipped and narrow end rubbed. Elongated pebble, $4\frac{1}{4}$ by 2 by 1 in (10.8 by 5.1 by 2.5 cm), rubbed at one end. Disc, flat and irregular, apparently smoothed, diameter $2\frac{1}{2}$ –3 by $\frac{1}{2}$ in (6.4–7.6 by 1.3 cm). Several rounded quartz pebbles, 1 to 2 in (2.5 to 5.1 cm) in diameter, selected as for sling stones.

Flint Five pieces of flint, mostly flakes but there was one yellow brown example, 2 in (5.1 cm) long, which was part of a scraper.

Bone Eleven well-burnt fragments, white in colour, with a striking resemblance to cremated bone but they cannot be identified as human.

The Improved Land (figs 2, 14; pls 12b, 15b)

Within the site as a whole, it was possible to distinguish two separate groups of low, overgrown heaps of stones of the type which the Sutherland *Inventory* describes as 'mounds'. At least 10 occurred on the higher ground in the NE near Hut-Circles I and II, while a second group of 8 were scattered near the southern limit of the site. More almost certainly existed below the peat and one was in fact located while investigating the nature of a slight bank to the WSW of Hut-Circle III. The 'mounds' varied in size between 8 ft (2.4 m) and 25 ft (7.6 m) in diameter but they rarely rose more than about 2 ft (60 cm) above the peat. Although the stones were neatly piled together, they exhibited no sign of a boundary kerb nor of external walling.

Two were sectioned; both were in the vicinity of Hut-Circle II, but otherwise they were chosen at random (pl 15b). They consisted of boulders and stones thrown together indiscriminately, and in both cases, rested directly on soil without any suggestion of a layer of peat underneath.

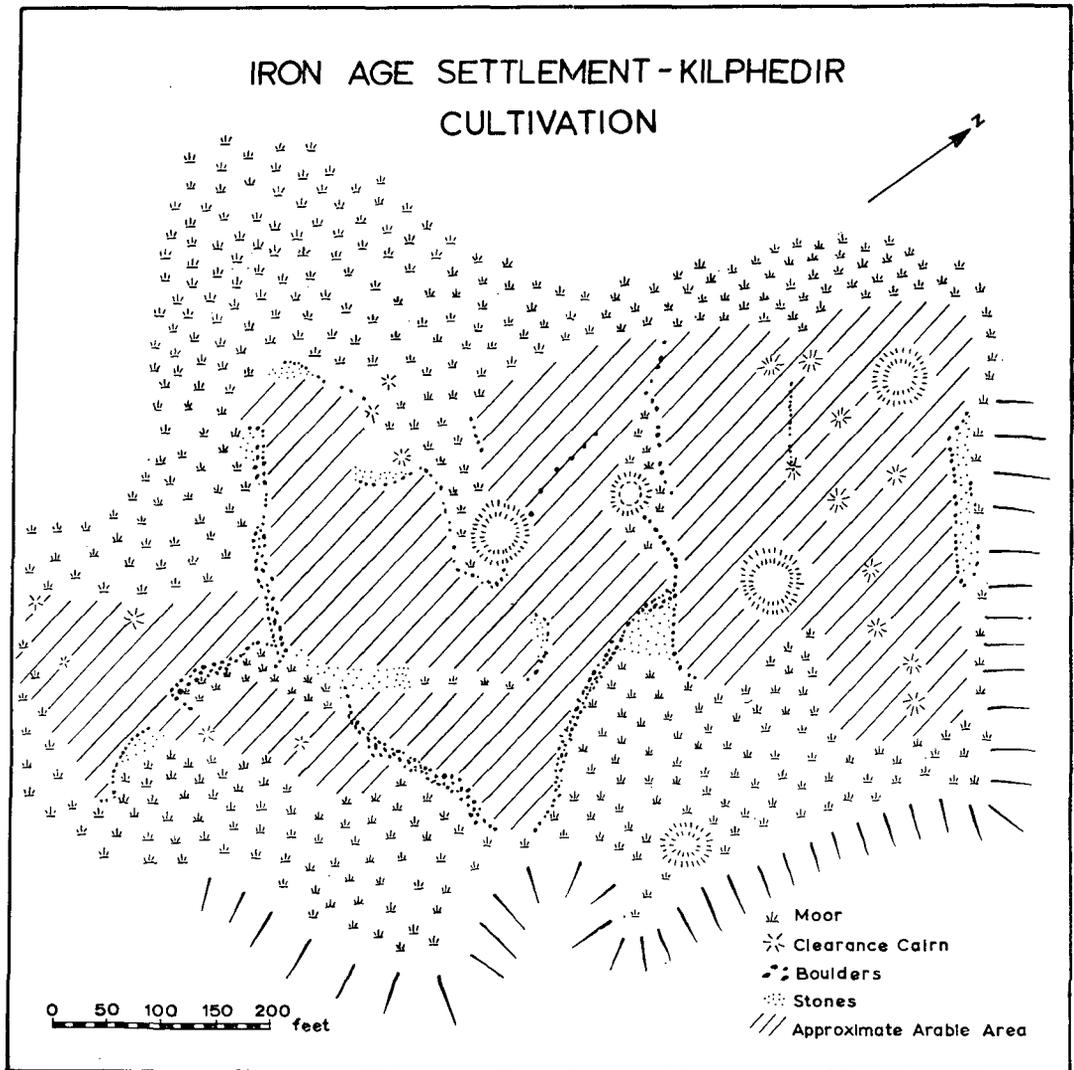


FIG 14

There was no sign of a grave deposit nor did the sloping site seem at all appropriate for a burial mound. There can be no reasonable doubt that the primary purpose was to free patches of land for cultivation by piling the surface stones and boulders together into clearance cairns.

A single flint scraper about $\frac{1}{2}$ in (13 mm) across was found near one of the cairns.

The alignments of boulders and low banks predominated in the central area around Hut-Circle V. At first sight, they suggested ruinous field walls, but they were in fact too irregular. Closer study showed that they were made up of unsorted collections of stones, heaped along the edges of what appear to have been cultivation plots. A trench across a characteristic stretch near Hut-Circle III seemed to confirm this interpretation. There was brown soil on the flatter, down-side of the alignment, i.e. on the 'field side', and a stone-spread above with no sign of a built wall. It is relevant to note that no continuous bank was apparent along the edge of the moor above the site, corresponding to the head dyke of later times.

Both between the boulder banks and also in the vicinity of the clearance cairns, the ground was smoother and devoid of stones as compared with the undeveloped moorland. It was not possible to delimit very precisely the old cultivation plots, partly because of the mantle of peat, and no high degree of accuracy can be claimed for the differentiation of the arable ground as shown (on fig 14). It is, however, clear that the total area of improved land cannot have exceeded four or five acres (2 hectares) and was probably less, bearing in mind that minor patches of rough ground such as those upon which the clearance cairns rested must have interrupted the arable ground. In general the land was smooth and rolling, with a S or SW aspect. The gradients varied from about 1 : 12 up to as much as 1 : 6; when the ground was under cultivation, soil wash must have been a difficulty. Far more serious, however, was the problem of preserving even a low level of fertility, for the soil was thin, stony and acid, judging at least from its present state. It seemed almost impossible to grow crops on such land, but the visible evidence of the clearance cairns and boulder banks could not be doubted. Presumably under these conditions, spade cultivation would be the only possible method around and between the clearance cairns. This leaves the more elongated stretches defined by the boulder banks as a problem; under more auspicious conditions, it might have been tempting to think in terms of plough cultivation with an ard. The nature of the ground rendered any attempt to discover plough marks quite out of the question.

Soils

A detailed report on soils and pollen analysis of the peat is contained in Appendix 2 by Dr Durno and Mr Romans of the Macaulay Institute of Soil Science; we wish to acknowledge our appreciation of their work and also to thank Mr D Futty who undertook the sampling. While the Appendix speaks for itself, one or two matters require discussion at this stage.

Our first indication of a date for the settlement came when Mr Romans suggested on very general grounds that the peat might have started to accumulate on the site of the earlier hut-circles not long after the Sub-Boreal/Sub-Atlantic transition (Godwin's Zones VIIb/VIII). Durno and Romans¹⁸ have indicated the period as about 2500 BP. This development could perhaps be regarded as an extension downhill of the general peat blanket as described for the Grampians.¹⁹

It is noteworthy that there are only very slight signs of cultivation in the soil profile – a mere scratching of the surface must be envisaged. We have maintained that two periods of cultivation appear to be involved, one associated with the clearance cairns and one with the boulder banks; this depends not merely on our investigations at Kilphedir but also on the evidence from other Sutherland sites as discussed in the Introduction to the *Inventory*. Nevertheless, the pollen analysis shows one burst of *Plantago* pollen which indicates cultivation nearby, but a second, much less marked peak would result only from cultivation within the region generally. Mr Romans suggested to us the possibility of prehistoric fields downhill from the site, where greater supplies of wood-ash might be available. No trace of such plots can be found before the old fields of the early nineteenth-century clearance settlements are reached. Nevertheless, we are loath to abandon the hypothesis of two separate phases of cultivation of the fields on our site, especially as the Carbon 14 datings indicate two distinct periods of occupation.

Carbon 14 Determinations

The excavations of Hut-Circles I, II and IV produced charcoal only in minute quantities, while in the case of the lower horizon in Hut-Circle V unmixed samples could not be obtained with certainty. Hut-Circle III, which was specially excavated to obtain charcoal, yielded a small amount from twigs mainly of birch and hazel but with the possibility of some alder (identifications by Mr Donald Brett, at the time lecturer in the Botany Department, University of Glasgow). This

latter sample represents the only dating material for the earlier phase of the settlement and was obtained from occupation material on the hut floor and immediately beneath peat. A determination was made in Dr Alan Walton's laboratory in the Chemistry Department, University of Glasgow, as follows:

GU 299 2370 ± 40 BP

This date would accord with the idea that the peat began to accumulate on the site shortly after the presumed date of the Zones VIIb/VIII transition, i.e. very broadly about 500 BC using the new half-life for C14. Unfortunately, this single C14 date for the first occupation at Kilpeddir is otherwise unsupported.

Charcoal was available in quantity from the reconstructed Hut-Circle V. It occurred in blocks as much as 2 in (5 cm) across, from roofing poles which had fallen on to a fire on the hearth. The charcoal lay immediately below turf and specimens were prepared by cutting away the outside surfaces to avoid root contamination. The sample was then divided into two portions. By special arrangement with Dr Walton who was calibrating equipment at the time in 1966, one portion was retained in Glasgow and the other sent for comparison to the Lamont Geological Observatory, Columbia University. The respective determinations from the same sample were as follows:

GU 10 1908 ± 60 BP

GU 11 2064 ± 55 BP

GU 67 1922 ± 60 BP

L 1061 2100 ± 80 BP

Yet another determination from the same charcoal has been provided from the new laboratory at the East Kilbride Centre, Glasgow, which is closely in accord with L 1061 as follows:

SRR 3 2100 ± 50 BP

An average for the combined figures would centre on 2020 BP (approximately 130 BC) but all the results must be regarded as significant and indicative of the lack of absolute precision inherent in the method.

GENERAL DISCUSSION

The first occupation of the site can be placed provisionally in the period around 500 BC on both the C14 and pollen evidence. The five round-houses of a relatively simple type, with a roughly rectangular hearth and a central ring of posts to support the roof, need not necessarily have been in use simultaneously but they can hardly be regarded as a successive series. The floor construction involved considerable effort and, once one of these level platforms had been completed, it seems reasonable to suppose that it would have been re-occupied had a succession of single family units occupied the site as a whole. The general similarity of construction of the houses and strong resemblance of the pottery seems also to point to a group occupation. The very small area of arable ground indicates either a considerable reliance on stock, or much use of fish, game and wild produce generally. Perhaps the location of the clearance cairns amid the arable land may indicate the use of a spade or digging stick rather than a plough. The association of these simple round-houses with the cairns cannot in fact be proved from the site, but the close correspondence on so many other sites in Sutherland as noted in the *Inventory*²⁰ is a very strong argument.

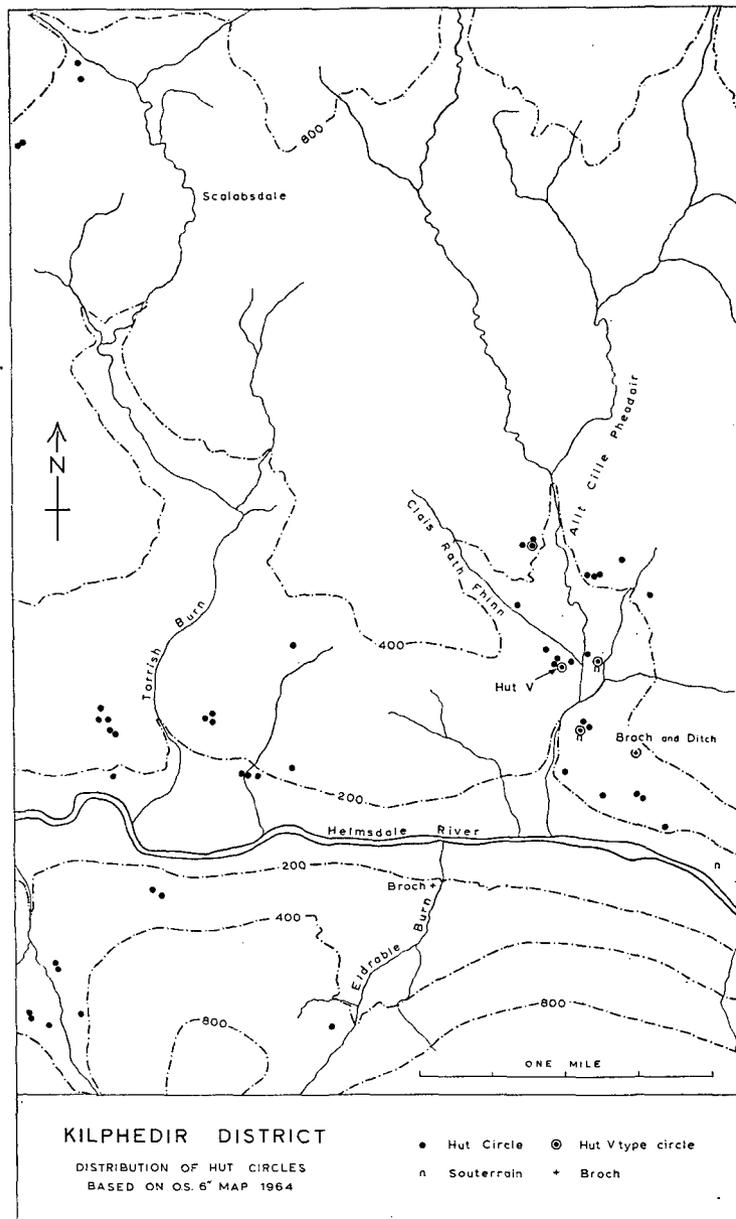


FIG 15

An important point which has emerged is that the blanket of peat began to form soon after the occupation of the hut-circles at Kilphedir. This has had the long term effect of precluding later agricultural exploitation and the fossilised landscape survives beneath the peat mantle and is still recognisable at the surface.

The local distribution map showing sites of hut-circles (fig 15) has been compiled from the new OS 6 in map (Sheets NC 91 NE and NC 92 SE) with slight modifications from personal

knowledge. It will be noted that the haughlands along the river are devoid of sites and that very few circles occur below 200 ft (62 m) which Mr Romans suggests was the approximate upper limit of continuous woodland. Again, few sites occur above 400 ft (124 m) but some near the head-streams of the Torrish Burn in the NW corner occur at over 800 ft (250 m) so that no simple altitudinal limit can be drawn.

The total number of hut-circles in the Kilphedir area is so large that it cannot readily be explained in terms of the relative attraction of a small pocket of good land in an otherwise poor region. It suggested comparison with the population at the time of the Clearances in the early nineteenth century when the density of population was also very high. A plan showing all the buildings in existence in 1810 has been preserved amongst the muniments of the Sutherland estate and has already been described in a previous paper.²¹ Without going into details, it is at once clear that, if all the hut-circles had been occupied at any one time, the population of the area would have been much in excess of that of 1810. It is well known that just before the Clearances, the standard of living was low and famines were common, although cultivation was on the deeper soils on the sheltered floor of the Strath.

A deterioration in the climate might perhaps be invoked to account for the acceleration of peat formation after the period of settlement but even so, the extreme poverty of these upland soils makes it inherently unlikely that all the hut-circles in the Kilphedir district were in occupation simultaneously. Shifting cultivation most probably is involved with fresh land-winning at short intervals. It must be noted, however, that within the altitudinal limits of the hut-circles, there is no suggestion that the ground had been developed to the maximum in terms of cultivation. In fact, far from dealing with a distribution showing a fine adjustment of the sites to local conditions of slope, aspect, drainage and soils which could only be worked out over generations, we may well be seeing the results of a very incomplete development, a pioneer distribution in terms of small patches of cultivation occurring very irregularly.

In other words the large number of hut-circles and clearance cairns, which are such a feature of central and eastern Sutherland, would seem to be the result neither of a dense population nor of a long period of settlement. The visible remains must have survived to a most unusual extent because of the development of the peat which in itself may have cut short the period of cultivation of these upland areas at the altitudinal zone involved. Too little evidence is available to say who these colonists could have been. They may have been the descendants of a Bronze Age population which had turned to a more sedentary way of life as practised in more southerly areas of Britain for a thousand years or more. They may have been struggling with the poor soils of the open uplands before they had adequate techniques to clear and drain the lower straths. Whether these colonists had technically progressed to the Iron Age is questionable; effectively they would seem to have been still largely in a Stone Age.

The old site of the five hut-circles and the clearance cairns was re-occupied some three or four hundred years later by the occupants of the reconditioned Hut-Circle V perhaps in the later second century BC. In spite of the difficulties, but bearing in mind the evidence from other sites, we associate with this re-settlement the boulder banks which are so characteristic a feature at Kilphedir. The almost dun-like form of the new Hut-Circle V has been mentioned above. Socially, one family group seems to have replaced the old loosely clustered settlement of up to five families. A change in potting techniques is also indicated.

A similar hut-circle which seems to have a souterrain occurs across the Clais Rath Fhinn (*Inventory no. 327*); the builders had again utilised a pre-existing hut-platform and the traces of the older circle can be detected outside. The same elongated entrance occurs, and the familiar boulder alignments are to be seen in the vicinity. Across the Kilphedir burn, another dun-like

circle (*Inventory* no. 328) has a short souterrain entered by a low doorway in the inside wall to the left of the entrance. Boulder alignments occur nearby but are less obvious, and once more, one or two of the older circles appear in close proximity. Further afield, a similar type of hut-circle occurs in the neighbouring glen of Cäen; it is again set within what appears to be an earlier circle and is characterised by a short souterrain (no. 318). Two others are located in the upper Strath Brora at Knockarthur (nos 498–9) of which the former yet again seems to have been placed within a pre-existing circle. In two examples at Kildonan (nos 344–5) a sunken circular chamber seems to have been entered through the wall of the hut from the interior, as though to replace the souterrain. In the first of the two, the main entrance was provided with checks for a door. The writers of the Sutherland *Inventory* were fully aware of this distinctive type of hut-circle but, from the descriptions and from personal inspection of a number of them, some variety occurs and a precise differentiation is not possible. Our distribution map (fig 1) includes some in which the chief distinguishing feature is an expansion of the walling on either side of the entrance (as at Hut-Circle V) though it is not clear that this trait in itself should be diagnostic.

These strongly built hut-circles, usually with the expansion at the entrance, often occur singly and the distribution is strictly confined to eastern Sutherland. The area includes Strath Brora, Strath Fleet and the Strath of Kildonan but so little is known of the archaeology of the neighbouring county of Ross and Cromarty that this statement may be misleading. It is interesting and perhaps relevant to note that another distinctive type of dwelling, the so-called 'wags' described in the *Inventory* for Caithness, have a similarly limited distribution, this time being confined almost exclusively to southern Caithness.²² They have been included on the distribution map (fig 1) for comparison, though very little is known of their age. Most appear to have had an encircling wall of stone within which stone slabs, set on end, were used to support the roof, instead of an inner ring of posts as at Kilphedir. This highly local phenomenon represented by the wags may perhaps be explicable in terms of the good building stone available in southern Caithness.

How far the two occupations at the Kilphedir site can be fitted into the pattern of the Late Bronze Age/Early Iron Age as currently envisaged, is a very difficult problem, and has already been briefly discussed elsewhere.²³ We can see no need to invoke mass invasion to account for a type of land exploitation and of house form which had been current at least in southern Britain for centuries. Moreover, we would make the point that some features of the type of dwelling represented by Hut-Circle V might perhaps be regarded as vaguely foreshadowing some of the characteristic features of the brochs. A cultural continuum from the Late Bronze Age is tentatively postulated.

REFERENCES

1. Feachem, R W, 'Unenclosed Platform Settlements', *Proc Soc Antiq Scot*, xciv (1960–1), 79–85.
2. R C A M Scotland, *Inventory for the County of Roxburgh*, vol ii, no. 597 Fort Eildon Hill North.
3. R C A M Scotland, *Inventory for the County of Sutherland* (1911), p xxv.
4. R C A M Scotland, *Inventory for the County of Caithness* (1911), p xxxvii.
5. R C A M Scotland, *Inventory for Orkney and Shetland* (1946).
6. R C A M *Sutherland*.
7. R C A M *Sutherland*, pp xxix–xxx.
8. R C A M *Sutherland*, p xxix.
9. Graham, Angus, 'Cairnfields in Scotland', *Proc Soc Antiq Scot*, xc (1956–7), 7.
10. Abercromby, John, 'Exploration of Circular Enclosures and an underground House near Dinet, on Deeside, Aberdeenshire', *Proc Soc Antiq Scot*, xxxviii (1903–4), 102.
- Ogston, Sir A, 'Prehistoric Antiquities of the Howe of Cromar', *3rd Spalding Club*, 1931, 22.
11. Thorneycroft, Wallace, 'Observations on Hut-circles near the Eastern Border of Perthshire, North of Blairgowrie', *Proc Soc Antiq Scot*, lxvii (1932–3), 189.

12. Fenton, Alexander, 'Early and Traditional Cultivating Implements in Scotland', *Proc Soc Antiq Scot*, xcvi (1962-3), 264, (see page 274).
13. Curle, Alex O, 'On the Examination of Two Hut-Circles in the Strath of Kildonan, Sutherlandshire, one of which has an Earth House annexed', *Proc Soc Antiq Scot*, XLV (1910-11), 18.
14. Hamilton, J R C, *Excavations at Jarlshof* (1956).
15. Wilson, G W, and Phemister, J (revised Anderson, J G C 1946). 'Talc and other Magnesium Minerals and Chromite'. Dept. of Scientific and Industrial Research, Geological Survey of Great Britain, Wartime Pamphlet No. 9.
16. R C A M *Sutherland*.
17. Curle, Alexander O, 'An Account of the Partial Excavation of a "Wag" or Galleried Building at Forse, in the parish of Latheron, Caithness', *Proc Soc Antiq Scot*, LXXV (1940-1), 23.
18. Durno, S E, 'Evidence regarding the Rate of Peat Growth', *J Ecol*, 49 (1961), 347.
'Pollen Analysis of Peat Deposits in Eastern Sutherland and Caithness', *Scot Geog Mag*, 74 (1958), 127.
19. Durno, S E, and Romans, J C C, 'Evidence for Variations in the Altitudinal Zonation of Climate in Scotland and Northern England since the Boreal Period', *Scot Geog Mag*, 85 (1969), 31.
20. R C A M *Sutherland*.
21. Fairhurst, Horace, 'The Surveys for the Sutherland Clearances 1813-20', *Scottish Studies*, 8 (1964), 1.
22. R C A M *Caithness*, p xxxix.
23. Fairhurst, Horace, 'Kilphedir and Hut-Circle Sites in Northern Scotland', *Scottish Archaeol Forum*, 3 (1971), 1-10.

APPENDIX I

The Sutherland Field School

The investigations at Kilphedir were made possible through the organisation of an adult field-school of archaeology. This Sutherland Field School represents an experiment which we believe to be of more than local interest in these days of high labour costs and a widespread amateur interest in field work and especially excavation which can so easily become destructive through excess of enthusiasm and absence of technical skill.

In 1961, a conference was held in Dundee by the Scottish Regional Group for British Archaeology, on the place of the local society in archaeology. Delegates requested a course of instruction in field work and simple methods of survey with lectures and the practical planning of ancient monuments. Kilphedir seemed to be the ideal site for such a venture. The monuments, of considerable variety, were contained within a well-defined area; the region as a whole was an attractive one to students who would have to devote part of a limited summer holiday to such instruction; above all, Mr J McLellan, Director of Education, and the Education Committee of Sutherland gave us invaluable support in placing the McLeod Hostel at Golspie and transport at our disposal. The School was held in the summer of 1962; Mr Gordon Petrie of the Geography Department of the University of Glasgow gave instruction in survey.

While at Kilphedir we became interested in the problem presented by the hut-circles. When the students at the School requested a continuation and development of the project with the excavation of a selected site, the investigation of some of the hut-circles seemed a worthwhile subject for their enthusiasm. Four seasons' work at Kilphedir followed with from 12-30 members taking part. Many discussions on various aspects of excavation in general and the problems arising at Kilphedir in particular provided new lines of thought and a stimulus which it is a pleasure to acknowledge, and we would thank members of the School for their help and sustained enthusiasm. When required, labour, mainly for filling in, was supplied by Sutherland County Council, who also provided the tools and an indispensable 14-foot ladder. Mrs Dolores McBride also deserves our special thanks for her care in tracing the plans. We have also to offer our sincere thanks to Mr J C C Romans, Mr D Fuddy and Dr S E Durno who came from the Macaulay Institute of Soil Research to take soil and peat samples, and above all to discuss the various horizons of the soil profile which dominated so often the day-to-day excavation.

APPENDIX 2

Kilphedir – Hut-Circle Excavation Site

by J. C. C. Romans and S. E. Durno

The site at Kilphedir is situated at an altitude between 400 and 500 ft (120 and 150 m) on the N side of the Strath of Kildonan about 3½ miles (5.6 km) NW of Helmsdale.

The more freely drained soils on this site range from peaty podzols with a strong thin iron-pan (which are found on the hut-circle site and above it), to podzols without this iron-pan (which occur between the site and the A879 road below). Patches of relatively smooth ground surrounded by small stone cairns, which have been described as 'possible areas of former cultivation', are generally found in or near the transition area between these two soil types. The microtopography of the site is generally low mounded and the soil parent material is a morainic till derived from granite. Lower down the valley slope below about 300 ft (90 m) there is an increasing admixture of acid schist material with the granite. Thin peaty or peat gley soils occupy the wetter patches and hollows between mounds.

At the present day both the hut-circles and the surrounding moorland are covered by a substantial peaty layer ranging from 8 in (20 cm) to 12 in (30.5 cm) in thickness, indicating that at the time of occupation the development of a peaty layer can scarcely have begun, though the regional thin iron-pan was already well developed, as it is present in a somewhat dilapidated condition on the surface of the indurated B₃ horizon, where this forms the floor of Hut-Circle I. The presence of a secondary thin iron-pan formed in the debris left on the hut-circle, after the site was deserted, indicates that conditions favourable to the formation of thin iron-pan persisted for a while after the abandonment of the site. This suggests that the formation of thin iron-pan on this site has been associated with the initial stages of the accumulation of a peaty surface layer.

The establishment of this settlement on, what was at that time, a soil transitional between podzol and podzol with thin iron-pan suggests that it was probably near the upper edge of the valley side woodland, where the trees had thinned out into open birch pine woodland, and where the settlement itself was out of the direct line of sight from the valley bottom.

Chemical analyses are available from a control profile (Kilphedir no. 3 peaty podzol) 100 yards (90 m) uphill from Hut-Circle I, from inside Hut-Circle I (Kilphedir no. 1), and from a profile (Kilphedir no. 2) 4 yards (3.7 m) outside the same hut-circle. Phosphate analyses only are at present available from a profile (Kilphedir no. 4) taken from one of the patches of possibly cultivated ground associated with the hut-circles.

A general consideration of the chemical analyses indicates that the figures for profiles 3 and 4 are well within the limits which have been recorded for peaty podzols developed on granite parent material in Aberdeenshire (Charr series of the Countesswells Association¹).

When the figures are considered in detail it is noticeable that the total phosphate contents of the three uppermost mineral horizons of the Kilphedir control profile no. 3 (1–4 in, 5–7 in, 7–8 in) (2.5–10 cm, 13–18 cm, 18–20 cm) are somewhat lower than those recorded on Aberdeenshire profiles.¹ The total phosphate contents of the two uppermost mineral horizons of the possibly cultivated field no. 4 (0–1 in, 3–5 in) (0–2.5 cm, 7.5–13 cm) are slightly higher than those in the control profile no. 3, though not higher than might be expected from an Aberdeenshire seminatural profile. The figure of 197 mg P₂O₅/100 gm soil recorded at 17–20 in (43–51 cm) in the 'field' profile no. 4 is slightly higher than would have been expected in a seminatural profile and is in the position within the profile where an archaeological accumulation of phosphate might be expected to be located. It is difficult to say whether the phosphate pattern in the field profile no. 4 is significant or not, but *if* it is, then the depth at which the 197 mg P₂O₅/100 gm soil occurs would suggest that cultivation of this field was associated *only* with the very earliest years during which Hut-Circle I itself was occupied. Thin sections made from a sample of soil taken from the upper mineral horizon of the no. 4 'field' profile *confirm* that the soil parent material is in fact derived essentially from granitic material, and suggest that there has not been a great deal of mechanical disturbance, and that any 'cultivation' that may have taken place was in the nature of 'scratching' of the surface rather than ploughing, and did not generally disturb the soil more than about 4 in (10 cm) below the mineral surface.

The phosphate pattern in the no. 1 profile taken inside Hut-Circle I indicates that there has been a significant archaeological accumulation of phosphate. Comparison (fig 16) with a hut-circle previously examined at Dalnaglar in Perthshire (Dalnaglar no. 1 profile²) shows that while the post occupation

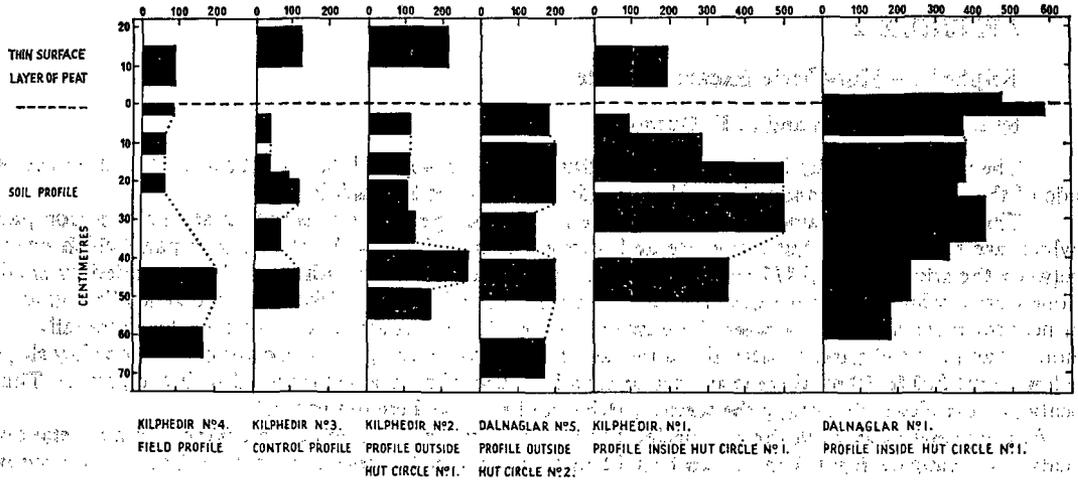


Fig 16 Comparison of total phosphate distribution in soil profiles from Kilphedir and Dalnaglar. Total P_2O_5 in mg per 100g soil

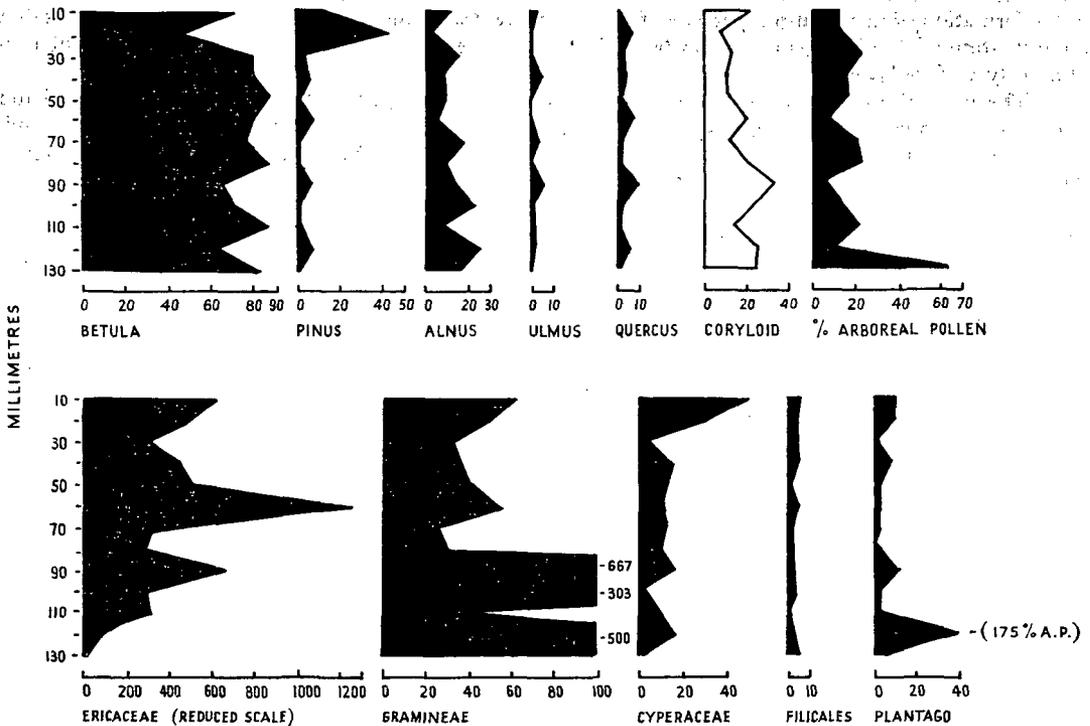


FIG 17 Kilphedir peat profile expressed as % of total tree pollen

(recent) accumulation of phosphate at Kilphedir has been less than at Dalnaglar, the archaeological accumulation has been considerably greater at Kilphedir than at Dalnaglar; suggesting that the period of occupation at Kilphedir was either longer or more intensive than at Dalnaglar.

Pollen analyses have been carried out on a shallow peat monolith taken near the hut-circle site, on the peaty layer overlying the control profile no. 3 and on the peaty layers which had formed over the hut-circle profile no. 1 and the nearby no. 2 profile.

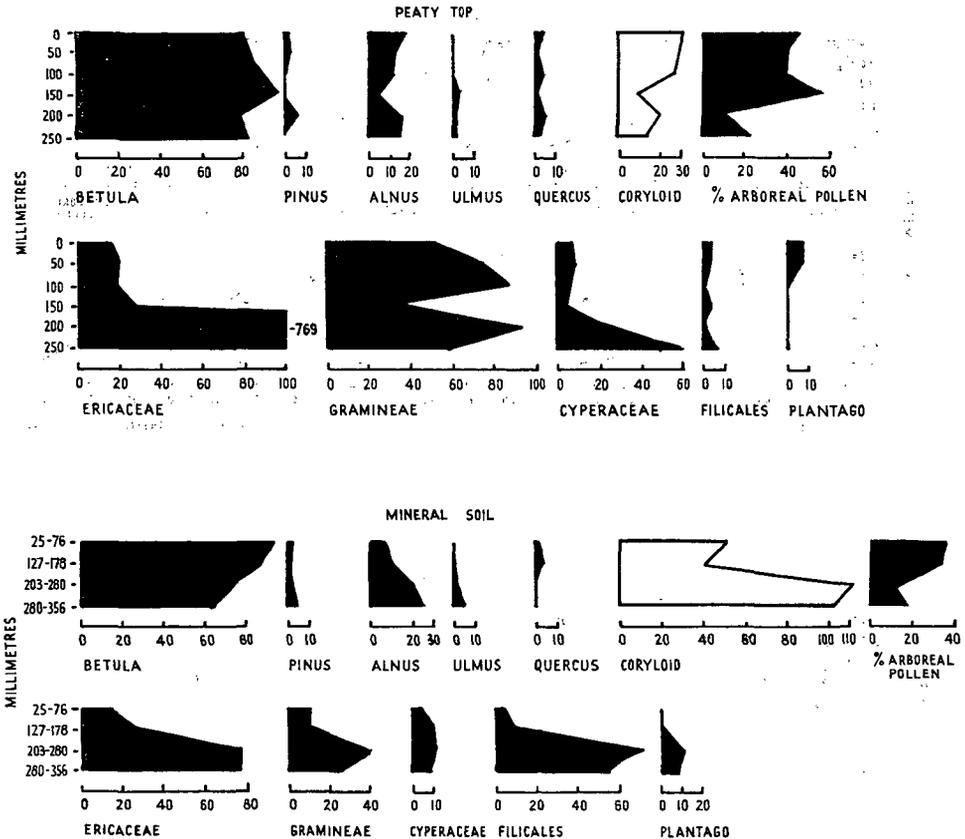


FIG 18 Kilphedir profile no. 2; values expressed as % of total tree pollen

The pollen zoning of peats from these northern sites³ is not yet well defined, and in this context the age of the base of the peat monolith is 'probably post Atlantic' (post 5000 years BP) – that is either 'Sub Boreal' or 'Sub Atlantic' (base at 2500 years BP). The base of the hut-circle peaty layer (Kilphedir no. 1) is somewhat earlier in date than the base of the peaty layer 4 yards (3.7 m) outside (Kilphedir no. 2). The base of the peat profile is again somewhat older than both (differences involved being probably of the order of one or two hundred rather than thousands of years).

However a comparison of the pollen pattern left by the weed and grass flora in the peat Monolith (*Plantago* and Gramineae in particular) from Kilphedir (figs 17–20) with that previously established at Dalnaglar in Perthshire² indicates a very close correlation. In the hut-circle profile no. 1 and in the profile 4 yards (3.7 m) outside it, no. 2, *Plantago* pollen is absent from the uppermost mineral horizon and present a few inches further down. The uppermost mineral horizon in both profiles probably represents 'post occupation debris' indicating that *Plantago* pollen was distributed over the site whilst this hut-circle was inhabited. A second small accumulation of *Plantago* pollen is present at the base of the peaty layer of hut-circle profile no. 1 and at the base of the peaty surface of the control profile no. 3 – this second occurrence is absent from the base of the peaty surface layer of the profile no. 2, 4 yards (3.7 m) outside the hut-circle and instead there is a rise in Gramineae (grass) pollen and a marked drop in Ericoid pollen. This could be interpreted as localised burning of the surface vegetation around the hut-circle – the remnant wall-bank acting as a fire break.

Both accumulations of *Plantago* pollen are recorded in the peat monolith from Kilphedir and appear to match the pattern at Dalnaglar in east Perthshire.²

It is notable that the earliest accumulation of *Plantago* pollen, quoted as a percentage of the total arboreal pollen in the peat monolith at Kilphedir reaches the very high figure of 175% as compared with

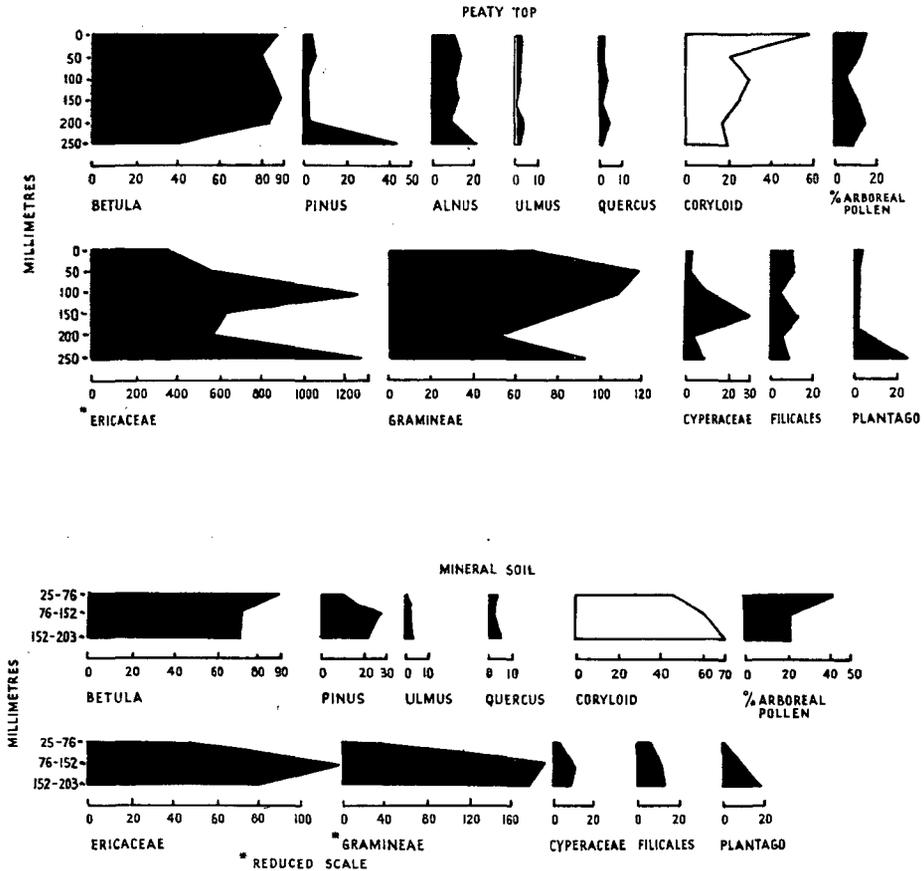


Fig 19 Kilphedir profile no. 1; values expressed as % of total tree pollen

10 to 12% at Dalnaglar. This indicates a local source of higher than regional intensity, and in this connection it may be mentioned that *Plantago* pollen is virtually absent from peat profiles previously examined in Caithness and Sutherland.³ *Plantago* (plantain) is one of the weeds often associated with periods of cultivation.⁴

It seems probable therefore that the earliest and most local of the possible periods of cultivation correlated with the accumulation of *Plantago* was contemporaneous with the occupation of Hut-Circle I and that the other post-dated the destruction of this hut-circle by a relatively short time, not longer than a few hundred years. Additional pollen analyses carried out on the peaty turf overlying the field profile (Kilphedir no. 4) did not show the presence of any accumulation of *Plantago* pollen either at the base of the peat or in the uppermost mineral layer of the soil. In this absence of *Plantago* pollen coupled with a high percentage of Gramineae pollen the field profile is comparable with profile no. 2 taken 4 yards (3.7 m) outside Hut-Circle I, but the ericoid figure is relatively high as compared with profile no. 2. The pattern of phosphate accumulation in the field profile does however support the correlation of any 'cultivation' on the site of the field profile with the earliest of two phases of occupation at Kilphedir.

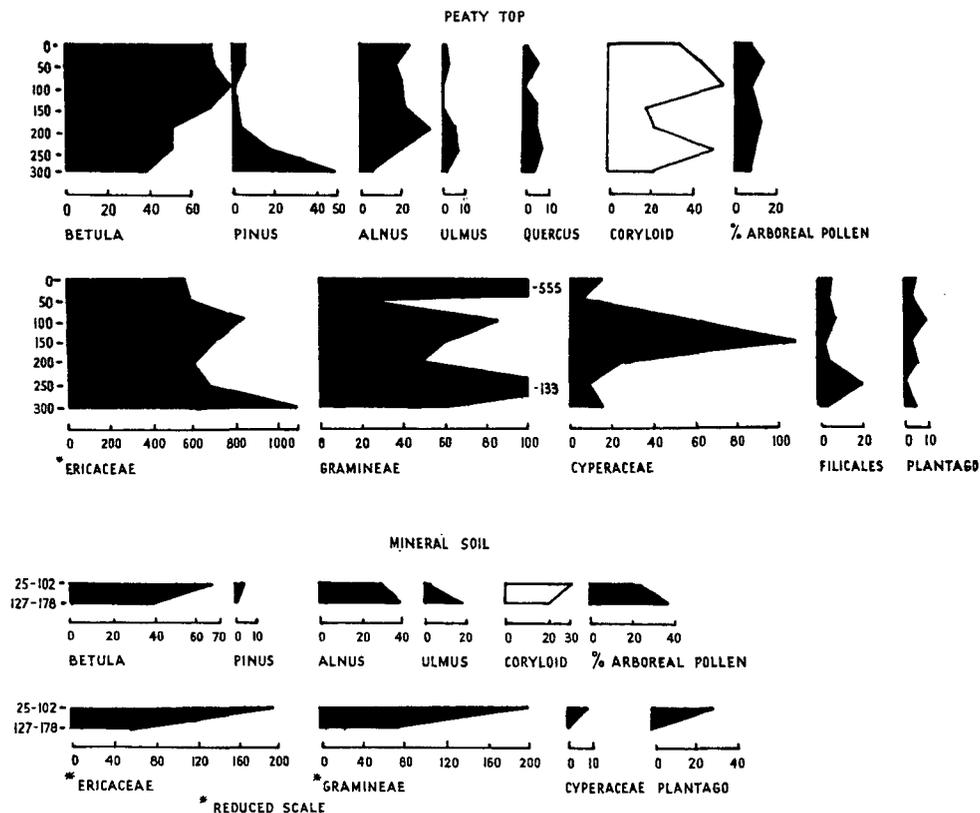


FIG 20 Kilphedir control profile no. 3; values expressed as % of total tree pollen

ACKNOWLEDGMENT

The chemical analyses were carried out at the Macaulay Institute for Soil Research by the Analytical Section of the Pedology Department under the supervision of Dr H G M Hardie.

NOTES

1. The soils round Aberdeen, Inverurie and Fraserburgh, HMSO 1963.
2. 'The excavation of two circular enclosures at Dalnagar, Perthshire', M E C Stewart, *Proc Soc Ant Scot*, xcv (1961-2), 134.
3. 'Pollen Analysis of peat deposits in Eastern Sutherland and Caithness', S E Durno, *Scot Geog Mag*, 74, 1 (1958), 127-35.
4. 'Forest clearance in the Stone Age', Johannes Iverson, *Scientific American*, 194, 3 (March 1956).



a General view of the Kilphedir glen with tent marking location of hut-circles and arable land



b General view over arable ground with Hut-Circle I central



a Excavation of Hut-Circle I showing depth of peat cover



b Pottery: above, sherds from late occupation of Hut-Circle V; below, base with steatite grits from Hut-Circle I



c Section through the wall of Hut-Circle II, above quarry-face



a Excavation of Hut-Circle III



b View of Hut-Circle V



c Later Y-shaped walling in Hut-Circle V



a The extended entrance to Hut-Circle V



b Excavation of a clearance cairn in the arable area