

# A preliminary survey of hut circles and field systems in SE Perthshire

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## ABSTRACT

*Between Strathtay and Glen Isla in SE Perthshire lie 180 groups of hut circles comprising over 700 individual structures. Many of the groups have field systems in the immediate vicinity and nearly all are presently situated on moorland.*

*This paper, based on the records of the OS and the RCAMS together with the author's own fieldwork, is an attempt to classify the differing forms of the hut circles and to study them in relation to their siting, dimensions, entrance and group orientation. Eight types are identified and those examples with double walls show an E–W distribution pattern. The wide variation in diameters suggests that some were no more than enclosing walls and there is a marked lack of groups on westerly facing slopes.*

*The field systems are also studied and in one instance the relationship between clearance cairns and field walls is illustrated. Two groups of previously unsurveyed hut circles and field systems are illustrated, together with sketch plans of the various forms identified.*

## INTRODUCTION

Across 950sq km of SE Perthshire the Ordnance Survey has recorded 180 groups of hut circles and 119 field systems. As yet there is no Royal Commission *Inventory* covering this area and the information contained in this paper is based on the existing records, recent aerial survey and the author's own fieldwork. None of the sites is protected by statute and some are endangered by afforestation and land reclamation. The area studied is bordered to the W by the river Tay, to the E by the river Isla, to the S by their confluence and to the N by the Grampian Highlands. The rivers would have created problems of negotiation thereby providing natural boundaries against which any distribution or structural pattern of sites could be studied. It should be noted that other prehistoric monuments in the area include standing stones, circles, cairns, cup- and ring-marked boulders and cists, although the latter have so far been found only in the glens.

## GEOLOGY, PEDOLOGY AND VEGETATION

The study area lies on the Highland Boundary Fault, to the N of which is situated the Dalradian metamorphic complex of the Grampians and to the S the Old Red Sandstone of the

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Strathmore syncline with its sequence of younger fluvial and lacustrine sediments interlayered with volcanic rocks. The Highland Boundary Fault itself is a significant structural element and the faulting has resulted in relatively broad straths intercalated with prominent hills and plateaux, the highest of which is the 641 m Blath Bhalg lying on the Tay/Ardle watershed. Dissecting these watersheds are several small glens and burns, with the latter spaced between 1.5 km and 4 km apart. The existence of these, considering the degree of downcutting, would appear to have extended back in time to the last glacial regression. The detailed distribution of drift materials in the area has yet to be mapped but it is clear that the present soils, comprising iron podzols, peaty podzols and hill peat (Laing 1968, 94) with areas of brown forest soils often showing podzolic characteristics (Caseldine 1980), owe their nature to the complex drift pattern rather than to the solid geology. These soils are greatly influenced by slope, aspect and degree of exposure, with rainfall playing an important role in leaching and erosion. In the glens, the rapid glacial regression was marked by the widespread deposition of glacio-fluvial materials. The *Land Use Capability Classification* places soils formed from these materials in Class 3, with conditions favouring a mixture of arable, pasture for sheep and some forestry. At altitudes of over 235 m the soils fall into Classes 4, 5 and 6, the latter being used for hill sheep and forestry with extensive tracts of *Callunetum* providing cover for grouse.

The present vegetation does include some grasses largely confined to the brown forest soils formed from the Dalradian limestone outcrops such as that at Wester Bleaton (NGR NO 111 596), but elsewhere less nutrient-demanding communities show transitions to heather moor which occupies much of the area, with *Calluna vulgaris* being widespread. The frequency of dwarf plants of *Trientalis europaea*, however, suggests derivation from woodland (Ingram 1968, 73) and if the practice of muirburn is discontinued, birch scrub has been known to commence colonization. Areas of peat have formed, notably in the Forest of Alyth, with bogs often bordered by the poorer type of fen vegetation. Durno (1961, 157) identified early clearance phases near the hut circles at Dalnaglar, but the most detailed work on the post-glacial vegetation sequence in the area was carried out by Dr C J Caseldine (1980). Here, it was emphasized that the chronology appertaining to cores from Loch Mharaich (NO 118 568) and Heatheryhaugh (NO 183 519) was stratigraphically based, but the results suggested a considerable history of forest modification, probably extending back to 5000 bp. While natural leaching of initially base-poor soils would have contributed to a general change in vegetation, it was felt that with regeneration varying both spatially and temporally, anthropogenic activity was indicated (Caseldine 1979, 14).

#### PREVIOUS ACCOUNTS OF HUT CIRCLES IN THE AREA

This area, and indeed the majority of eastern Scotland N of the river Tay, appears to have escaped the attention of zealous 17th- and 18th-century antiquarians which, although protecting the sites from excavation, has left a dearth of early records regarding the distribution and types of monuments then extant. Passing references are made to hut circles both by Chalmers in the *Caledonia* of 1807 and in the *Statistical Account*, 15 (1791, 78). More detailed accounts of some Glen Derby sites can be found in Christian MacLagan's work (1895, 78). Brief descriptions can be read in Mitchell (1923, 39) and Dixon (1925, 82); Childe (1935, 215), rejecting the view that the hut circles had any strategic purpose, pointed out their rarity in the lowlands. The earliest account of any excavation is by John Stuart (1866, 402) and a considerable amount of work was done by Wallace Thornycroft (1933 & 1947), although his surviving family have confirmed that his manuscripts are no longer in existence (pers comm). More recently two hut circles were excavated at Dalnaglar (Stewart 1961, 134). A plan of part of the field system at Middleton Muir (NO 125

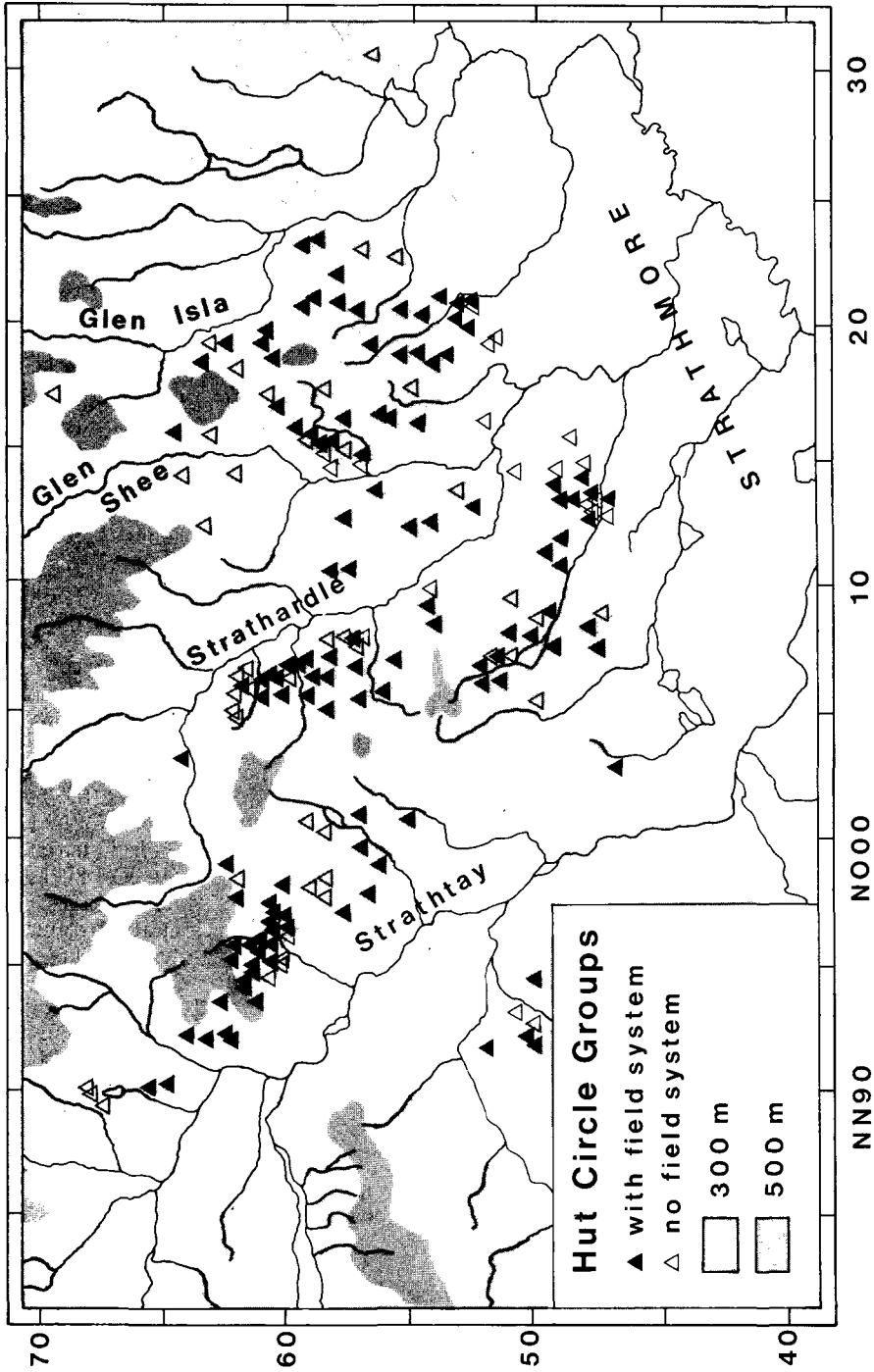
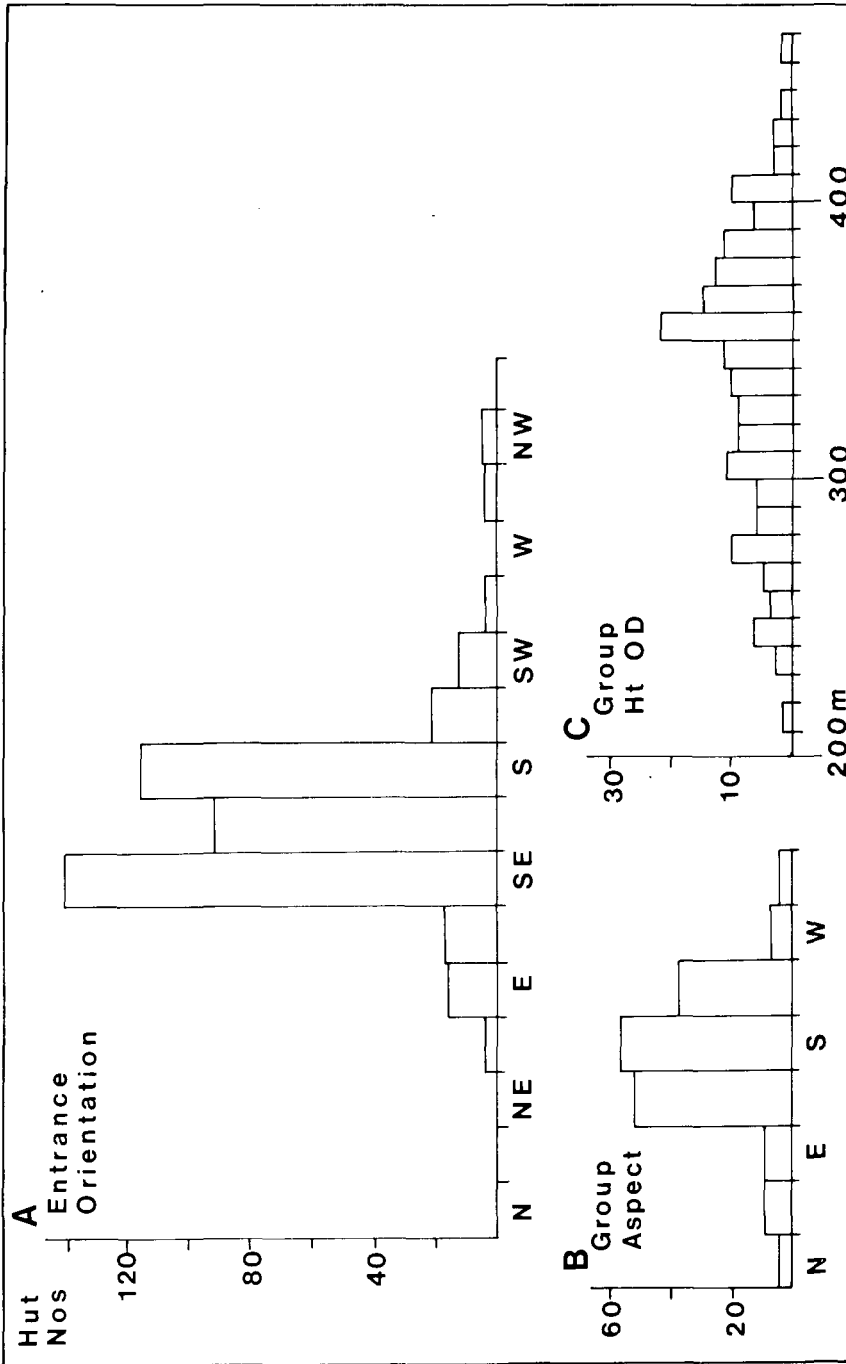


FIGURE 1 Distribution of hut circle groups and field systems



ILLUS 2 A, Hut entrance orientation. B, Group aspect. C, Group height OD

485) has been published (Feachem 1973, 343, fig 8) and some of the problems inherent in the study of cairnfields have been outlined by Graham (1957, 7). Much information regarding field systems in Scotland and northern England has recently been summarized by Fowler (1981, 9; 1983) and Halliday *et al* (1981, 55). Both Thorneycroft (1933, 187; 1947, 131) and Stuart (1866, 406) investigated clearance cairns; the low angled bank excavated by Stewart (1961, 143) was possibly a remnant field wall or a windbreak.

## THE HUT CIRCLES AND FIELD SYSTEMS

By far the greater number of sites in the area (illus 1) are covered by thick *Calluna*, peat or bracken or at best lie in rough grazing and some are partly destroyed by later rectangular structures and irregular enclosures thought to date from the 18th and 19th centuries AD. Such factors should be borne in mind when considering patterns of site morphology and distribution.

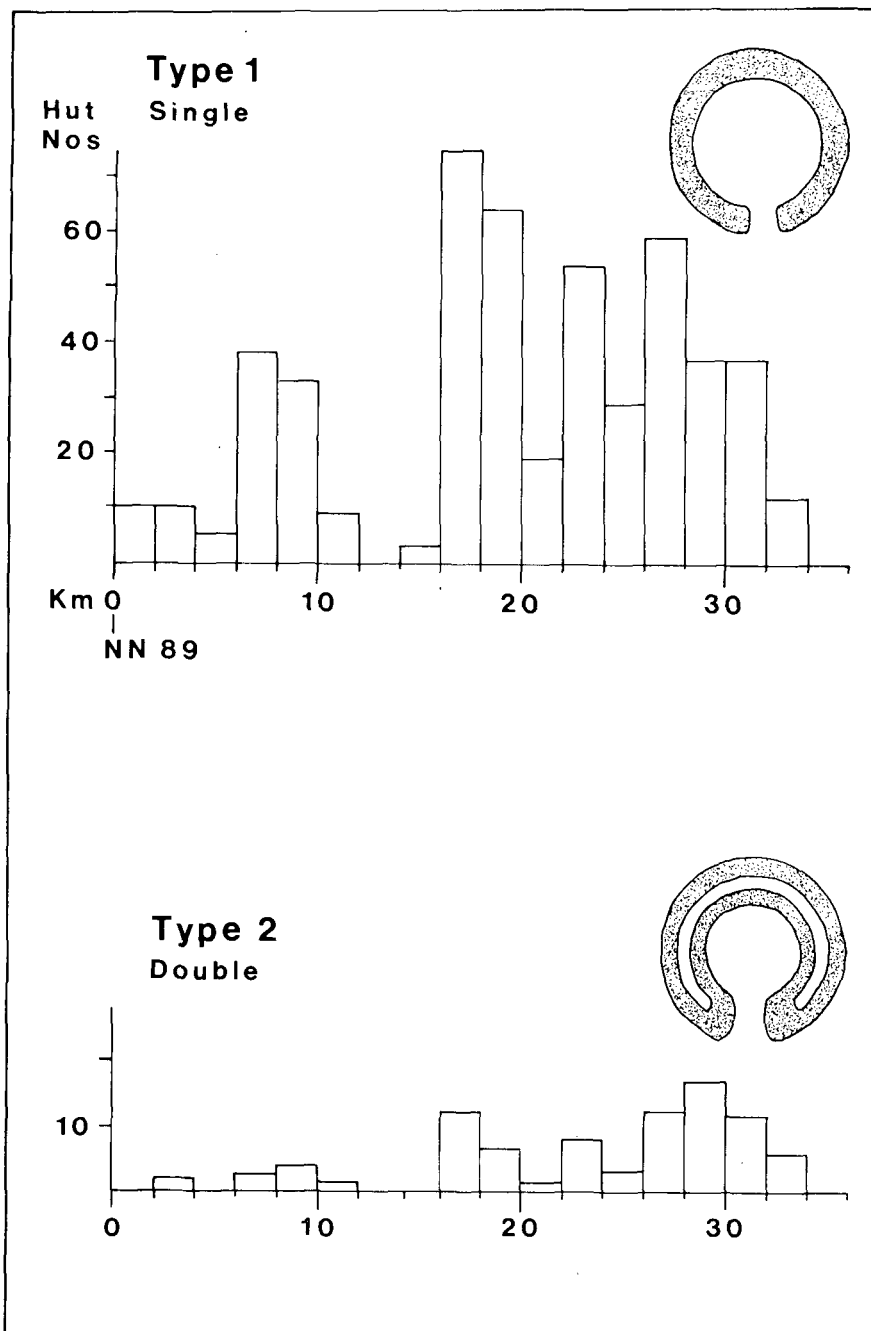
### SITE SITUATION

The majority of the hut circle groups (100 of the 180 recorded) lie at altitudes between 320m and 380m with the remainder ranging between 210m and 450m (illus 2c). From the information available there appears to be no correlation between the distribution of hut circles and changes in solid geology. As could be expected in any area where aspect and altitude would have played an important part in the location of settlements, most groups (115) lie on slopes which have a southeasterly or southerly aspect with a further 39 groups facing SW (illus 2b). Despite the perhaps unexpected number having a northerly or northeasterly aspect these particular groups are sited so as to obtain the maximum shelter afforded by the scarp slopes rising immediately behind them. It is noticeable that although 18 groups share this aspect, none of the hut circles has entrances orientated in this direction and the majority face SE (illus 2a). In addition some have been levelled into the hillside, affording extra protection. With reference to these few N- and NE-facing examples which are comparatively sheltered, the land slopes down to permanent water supplies (see Glen Derby NO 0659, the upper reaches of Lornly Burn NO 0749 and the Burn of Kilry NO 2057) and it is in these localities that the birch/hazel woodland might be expected to have survived to a greater extent than on the more exposed plateaux. There is an unexpectedly low number of groups situated on the western slopes, fewer than those on the eastern, and the inferences are discussed below. Furthermore, not one hut circle has an entrance recorded as facing due W.

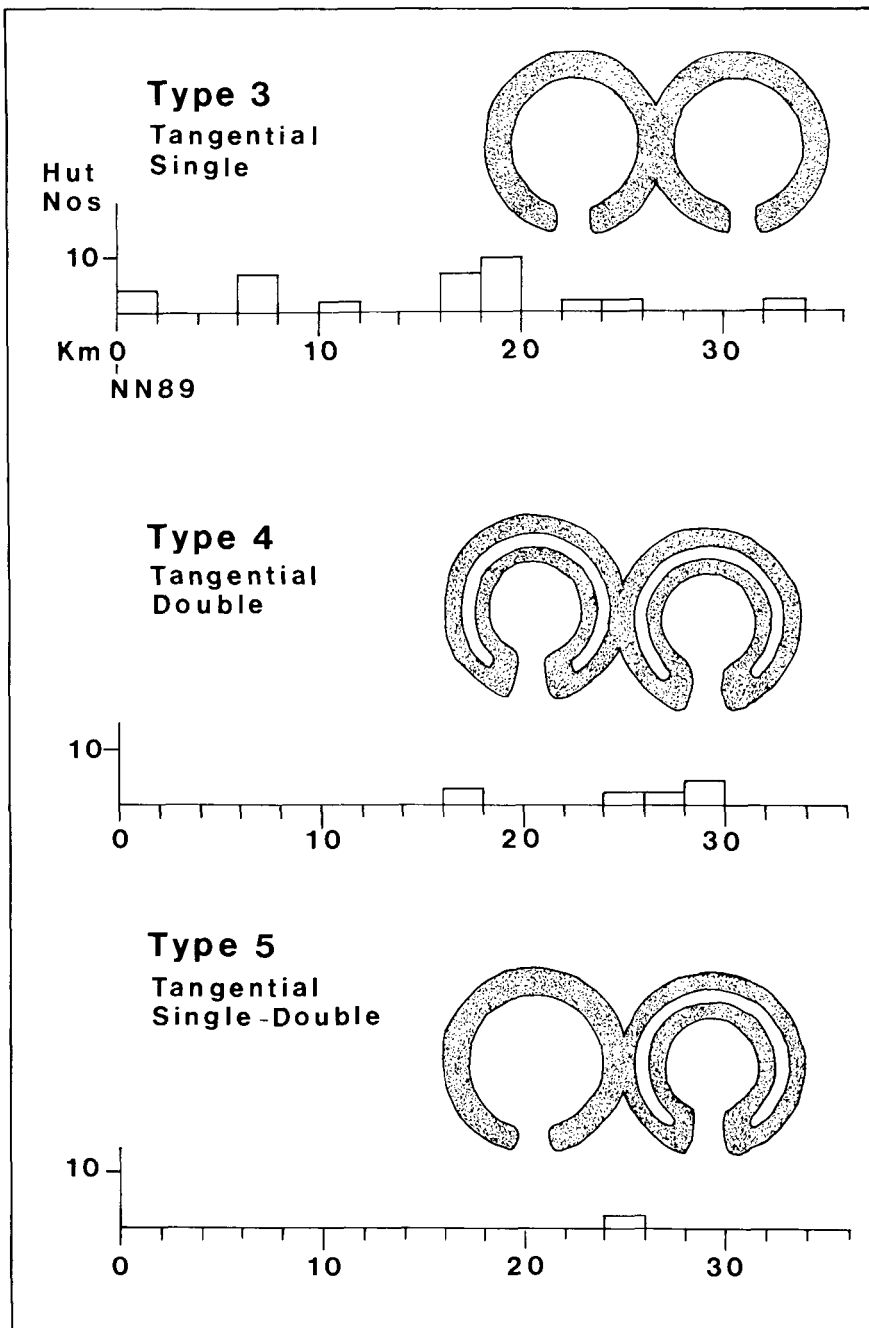
### SITE MORPHOLOGY

Hut circles can be divided into two principal types based on their appearance in the field. By far the most usual form of structure is Type 1, the free-standing single-walled hut with a single entrance. Illus 3 illustrates their basic plan, their frequency and E-W distribution plotted at 2 km intervals. Similar diagrams were drawn up for all types of hut circle to illustrate the N-S distribution, but no pattern emerged. From the total of 180 groups there are only eight instances where Type 1 is not represented. Examples were excavated both by Stewart (1961, 134) and Stuart (1866, 402).

Type 2 examples, of which 94 are recorded, have double walls (illus 3) and are named 'Dalrulzion', after the site at which they were first identified (Thorneycroft 1932, 187). As with Type 1 examples these structures are free-standing. There is a single entrance and the area between the walls averages 1.5 m in width. Thorneycroft indicates the existence of a break in the inner wall (1932, 196) but from recent studies this does not always appear to be the case. He also



ILLUS 3 Type 1 and Type 2 hut circles. Distribution plotted at 2 km intervals eastward from NN 89



ILLUS 4 Type 3, Type 4 and Type 5 hut circles. Distribution plotted at 2km intervals eastward from NN 89

noted that the annular space widened to c 6 ft 6 in near the entrance, but this phenomenon was not easy to identify amongst the Type 2 examples examined during this survey.

In addition to these two basic forms there are some hut circles which appear to be of a more complex plan which contrasts with the free-standing forms. The E–W distribution and examples of the variations in plan of huts which are apparently tangential (Types 3–5) are shown in *illus 4*. The ‘tangential’ huts which have only single walls show a distribution corresponding with that of the free-standing single-walled huts. The distribution of tangential huts with double walls is more restricted and accords with that exhibited by the free-standing double-walled huts. Without excavation it is difficult to state whether Types 3–5 are truly tangential or whether this impression could be due to tumble. This latter explanation seems unlikely as the overall width of the wall spread shows no irregularity. The only excavated example of this type showed that the walls of the two hut circles ‘blended’ (Thorneycroft 1947, 132) but no indication of a possible sequence was mentioned.

Further examples of complex hut circles are termed ‘integral’. Types 6 and 7 (*illus 5*). No examples of this type are recorded as being isolated from the free-standing hut circles. The term ‘integral’ has been used in cases where a wall adjoining the outer edge of a hut circle follows the curve of the hut wall and appears to form an annexe or to partly enclose the hut circle and in no way resembles a field wall which generally follows a linear direction (as at Tullymurdoch NO 201 534, *illus 7*). The extent and plan of these annexe walls differ greatly and no two similar examples were found. Perhaps with the addition of wattle fencing or hedging some form of stock penning could have been feasible. Alternatively the outer wall could have afforded the hut circle additional protection from run-off water and from destruction by stock. As with the tangential examples, the integral huts with single walls exhibit a wider distribution pattern than those with double walls.

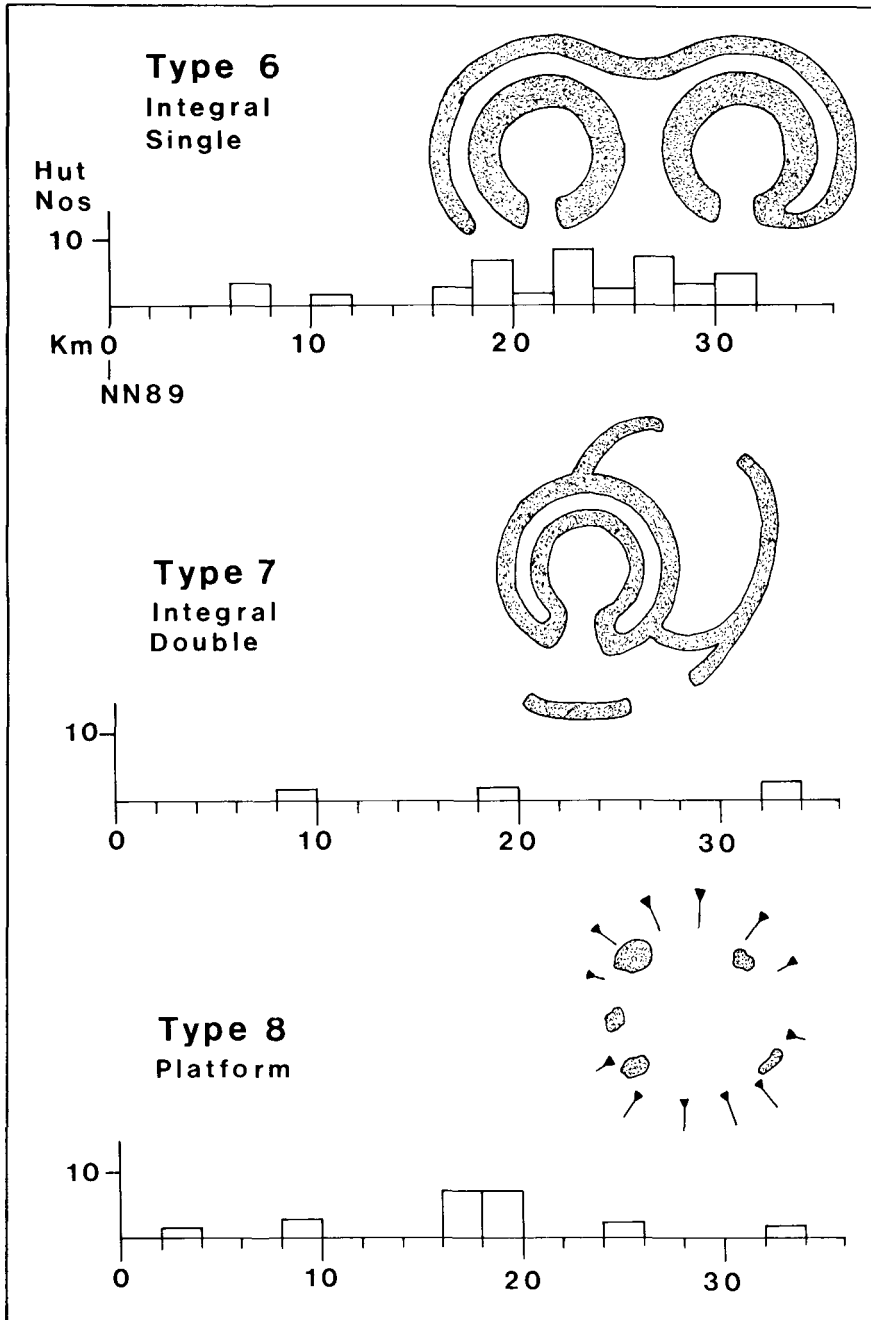
One further type of hut circle, the platform (Type 8) has been defined as a result of the virtual absence of an enclosing wall. At best these platform hut circles are delimited by a few boulders which were possibly augmented by timber constructions. No true entrances are visible and the ground has clearly been prepared by levelling into a slope. Although some of the walled huts show evidence of having been levelled they retain the characteristic circular wall of boulders with a single entrance. There seems to be no gradation between those with definite walling and those which are defined by a few boulders (Type 8). It was decided to classify the latter separately as they always appear within groups containing various other types and are not exclusive. For this reason they do not appear to represent sites of the Unenclosed Platform Settlement kind (Feachem 1960, 79; Jobey 1980, 12). Although only 21 in number, the platform hut circles show an E–W distribution corresponding with that of the single-walled free-standing Type 1 huts.

It can be seen that double-walled huts have a distribution pattern whether these are part of integral, tangential or free-standing examples. Their E–W distribution is more restricted than that of the single-walled huts and they show a concentration toward the centre and to the E of the area studied. In general they are found in groups containing other types and there are only three instances where an isolated double-walled hut has been recorded. The possible implications of such a pattern are discussed below.

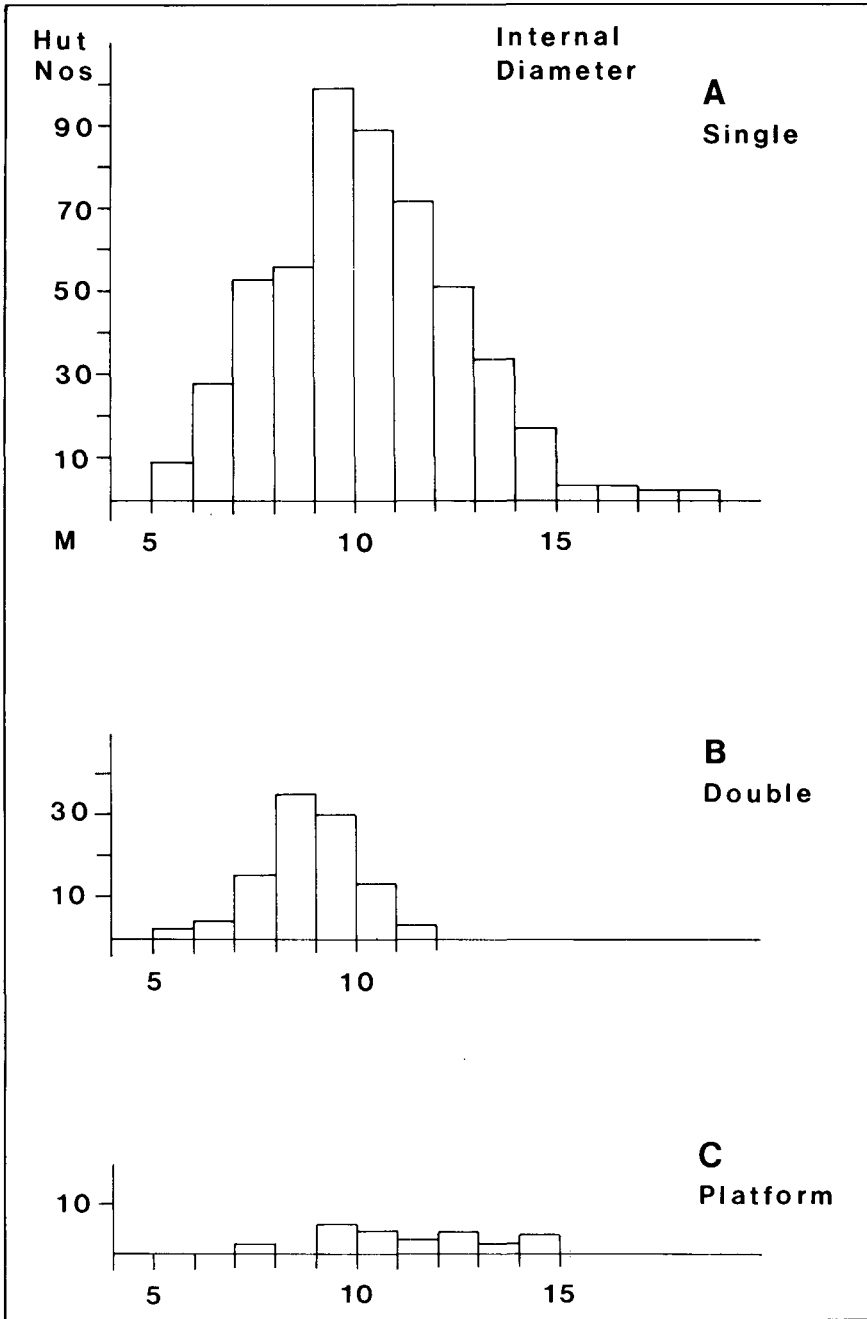
#### MATERIALS AND DIMENSIONS

The materials used for construction of the huts would appear to be glacially and fluvially worked boulders of varying sizes. There is nothing to suggest that any materials other than those immediately available on the land surface were used. In some cases efforts have been made to select facing stones of schistose materials to clearly define the inner and outer edges of the walls.





ILLUS 5 Type 6, Type 7 and Type 8 hut circles. Distribution plotted at 2km intervals eastward from NN 89



ILLUS 6 Internal diameters. A, Single walled huts. B, Double walled huts. C, Platform huts

It is not uncommon to find two particularly large slabs of c 1 m in height set on either side of the entrance. In other cases the entrances are ill-defined and badly mutilated by tumble. On average they measure 1.75 m. There is no apparent correlation between the use of slabs, small or large boulders with any of the eight types of hut circle, and neither with the hut's overall dimensions. Without excavation it is not possible to say to what extent earthfast boulders may have been utilized. The differentially shaped stones are not exclusive even within a single hut circle and this observation is borne out by the evidence from Dalnaglar where the walls exhibited a range of construction methods (Stewart 1961, 139). In some cases, where a hut circle has been built on a naturally flat-topped knoll, part of the slope of the knoll appears to have been revetted with small boulders and pebbles c 0.1 m in diameter, which could have been packed with turf for stability. The heights of the walls as they remain today average 0.5 m and although there is a possibility that the subsoil may have been banked slightly, as at Tulloch Field (Thoms 1979, 16), or the centre of the hut circle hollowed out, there is little evidence that either of these factors would have altered the height of the walls to any great extent. The degree of tumble is not easily definable, but the fairly consistent dimensions of the wall spread, whether or not there are facing stones, indicate that tumble is minimal. Although the width of the spread varies in different hut circles from 1.2 m to a maximum of 4 m, in 63% of cases it measures between 2 m and 2.9 m, suggesting that the stone element of the walls only marginally exceeded their present height when in use. The overall consistency of the measurements would also seem to rule out the possibility that robbing could account for the low elevation of the walls.

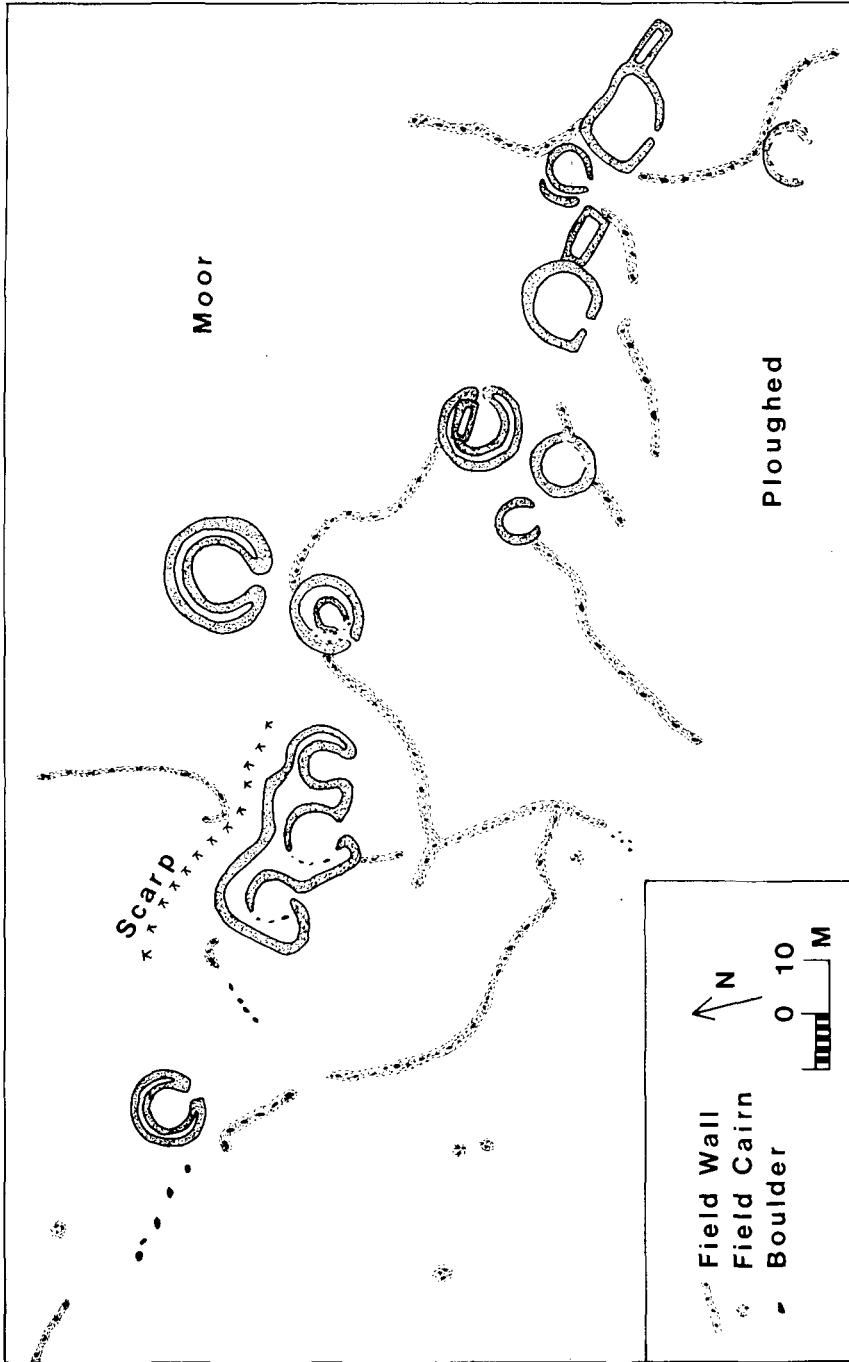
Internal diameters are far more variable. The double-walled huts, whether of the free-standing or complex types, have interior measurements ranging from 5.5 m to 11.9 m, but out of a total of 102 that were sufficiently well defined to ascertain, 65 examples ranged between 8 m and 9.9 m (illus 6b). Internal diameters of single-walled huts illustrate a greater range, varying between 5 m and 18 m, with the majority being between 8 m and 12.9 m (illus 6a). Illus 6c illustrates the range of internal diameters found in the Type 8 platform hut circle, ie between 7 m and 14.9 m.

#### SPATIAL RELATIONSHIP AND INDIVIDUAL SITING

The physical boundary between different groups of hut circles is not easy to define and it is felt little could be gained by attempting to classify them as 'nucleated' or 'dispersed' without at least some chronological evidence. In the majority of cases their distribution is related to the topography and most groups consist of between two and eight huts usually placed in the centre of a field system. Their siting is predominantly linear and follows existing contours (illus 7). There are no recorded examples of circular clusters of huts, neither of a group situated entirely within an enclosing wall. Individual huts within a single group are also variously sited. As stated above, some use is made of the technique of levelling into a slope but in contrast there are the instances where a natural knoll has been utilized. This latter trait is particularly noticeable on the eastern flanks of the Tay/Ardle watershed with clear examples in Glen Derby. It is possible that this may have been an attempt at defence but these glacially formed flat-topped knolls seldom occur on the Ardle/Glenshee watershed nor in the Forest of Alyth and in these areas no attempt appears to have been made to construct any alternative form of defence in stone. It therefore seems that the utilization of these knolls was an opportunistic use of topography.

#### THE FIELD SYSTEMS

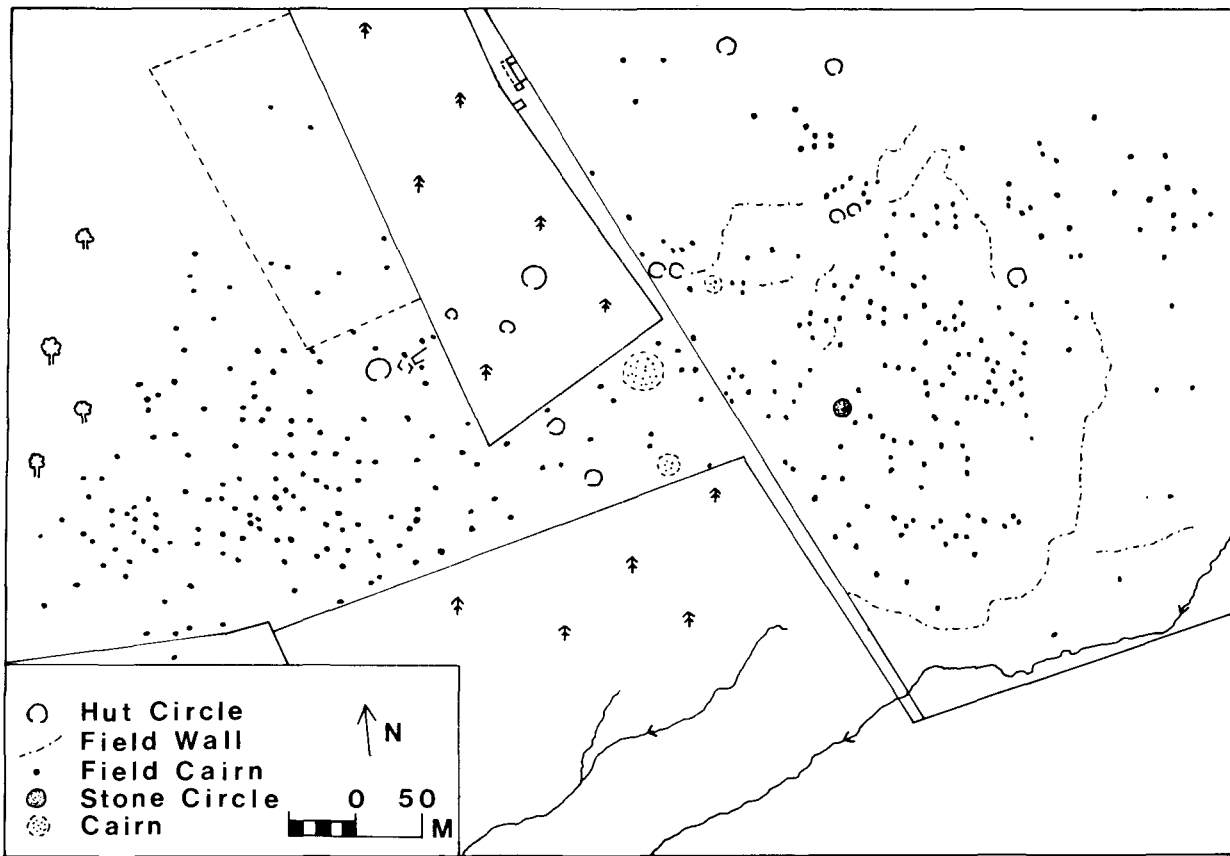
Of the total of 180 groups of hut circles, 97 appear to be associated with a well defined field system comprising combinations of clearance cairns, lynchets and field walls (usually <0.3 m high



ILLUS 7 Tullymurdoch NO 201 534. Hut circles and field system with later rectangular structures and irregular enclosures to east of group



ILLUS 8 Drumturn Burn NO 158 578. Hut circles and field system (RCAMS, Crown Copyright)



ILLUS 9 Balnabroch NO 100 574. Hut circles and field system (field cairns not to scale)

and <0.75 m wide). There are a further 22 ill defined examples. The problem of establishing contemporaneity with the hut circles is one which has not been solved by excavation in this area. However, apart from only nine instances where a series of clearance cairns (but no field walls or lynchets) is isolated by c 500 m from any other archaeological structure, all the field systems are situated close to the hut circles whether or not later buildings are present. This would support the probability that the majority of field systems were contemporary with the hut circle groups. The survey at Balnabroch (illus 9) shows the characteristic random placing of clearance cairns. Until recently surveys indicated that field walls did not appear to enclose small areas of land. However, following aerial surveys carried out by the RCAMS, sub-rectangular plots defined by field walls have been clearly identified (illus 8). In addition there are examples of possible rig systems apparently associated with hut circle groups and surrounding field systems (Drumturn Burn NO 158 578 and Corrie Burn NO 171 582).

There is nothing to suggest that the field systems are associated with any particular type of hut circle, neither with a minimum number of huts. Indeed there are instances where a single hut is found in association with clearance cairns and the fact that the latter have survived strengthens the probability that the single hut is all that was ever constructed in the immediate vicinity. Whereas the different types of hut circle do display some pattern, field systems are evenly

distributed from east to west and from north to south over the area and are found at altitudes ranging between 210 m and 420 m. As regards aspect, of the 18 hut circle groups facing between N and E, nine have clearly defined field systems and a further six appear to be associated with a few clearance cairns. It seems that there is little avoidance of these would-be inhospitable slopes. As with the hut circles, there is a distinct lack of exploitation of the westerly facing slopes, only one well defined example being recorded. The field systems range from 2 hectares to c 20 hectares in extent, with the majority apparently between 8 and 14 hectares. It should be remembered that the sites are in varying states of preservation and much evidence must lie beneath the peat and heather cover, or have been destroyed by later land use.

## CONCLUSIONS

As can be seen, the hut circles and field systems cluster around the 320 m–380 m contours and, although some may have been destroyed at lower altitudes by subsequent land use, it is felt that their numbers on the higher slopes and their total absence on the lower argue against there ever having been a pattern of similar features in the glens. This suggests that the extant remains represent the nucleus of the settlement pattern, although timber structures and those of the unenclosed platform type would leave little trace after clearance and ploughing. The aspect of the sites shows a marked absence of westerly facing settlements. The angle of slope cannot be considered to account for this, nor the later land use patterns. Furthermore, fieldwork appears to have been as intensive on these slopes as elsewhere. One explanation could be the degree of exposure to the contemporary prevailing winds, although this cannot be supported by evidence such as stunted arboreal growth. Entrance orientation illustrates an expected preference toward the S to SE. The general linearity of the groups, the fact that the surrounding field systems are not co-axial as they are on Dartmoor, and that some south and southeasterly facing slopes were apparently left unexploited argue against great population pressure on the land. Evidence for periodic land clearance with some regeneration extends back over at least four millennia (Caseldine 1980; Durno 1961). At present there is insufficient evidence to postulate details of economy but it is likely that sheep became increasingly predominant owing to their ability, unlike cattle, to exploit *Nardus* and *Calluna* as the qualitative change from mull to mor sward took place (Whittle 1982, 197).

By far the most numerous type of hut circle is the free-standing single-walled example showing an even distribution over the area. The validity of the classification of the tangential huts (Types 3–5) has already been questioned and their true form can only be ascertained by excavation. The part-enclosing walls adjoining hut circles of Types 6 and 7 would suggest a functional basis. Type 8, the platform hut, is considered to be the result of the utilization of existing topography to afford additional protection. The double-walled huts, whether free-standing or part of more complex types, are the only examples to show a distribution pattern and could well represent a social or chronological difference, as seems to be the case at Kilphedir (Fairhurst 1971, 3). Alternatively, they may represent no more than a local variation where the double walls provided good insulation, the annular space perhaps being filled with turf or heather. Such materials were sometimes placed inside the walls of local 18th- and 19th-century AD houses while the packing of midden material between the casing and inner walls has a greater antiquity (Childe 1931, 31).

How many of these hut circles were used as dwellings, either on a permanent or a seasonal basis, is of course unknown. From the reports available there is infrequent evidence for true hearths, although charcoal and ‘hearth stones’ were recorded from Dalrulzion (Thorneycroft

1933, 208). It is assumed that at least some structures were roofed, and evidence for turf packing, perhaps for stakes, was found along the crest of the wall at Dalnaglar (Stewart 1961, 139). An inner ring of roof-supporting timbers was suggested by postholes at Dalrulzion (Thorneycroft 1947, 132, fig 1). The variation in internal diameters (illus 6) would suggest that many structures, particularly some Type 1 examples, were not roofed and the possibility that free-standing timber constructions were built within the area delimited by the wall should be considered. Structures in a state of disrepair could well have been reused as stock enclosures or as a form of 'door-yard garden' for plants of non-staple dietary or medicinal use.

As far as the field systems are concerned, the proximity of clearance cairns to each other at Balnabroch (illus 9) would seem to have precluded ploughing by animal traction and if the area was under crop then presumably it had been hoe cultivated. Rees, however, has recently pointed out how manoeuvrable an implement the ard is and its use should not be entirely ruled out (Rees 1981, 78). The problem of contemporaneity of field systems with the hut circle groups has already been raised, while clearance cairns can date from several periods. It is clear that the field systems situated on the northerly to easterly slopes would have suffered from the lower declination of the sun in the winter months, were shielded from the spring sun by the slopes to the S and W and therefore lay in frost pockets. This suggests that in such areas clearance had been made with pasture predominantly in mind. Detailed planning of cairnfields in Caithness has shown variations in shape and density of cairns and the apparent random placing can be seen to be an oversimplified view (Mercer 1980, 35). The fact that some clearance cairns may have had a burial function is clearly a possibility (Childe 1935, 216). As far as the linear form of field walls is concerned, at Balnabroch (illus 9) it seems that the land has been cleared equally from both sides of the wall. This reduces the possibility that, even with the addition of wattling, they formed some kind of crop protection from wind damage. There was nothing to suggest flanking ditches as at Achnacree (Barrett *et al* 1976, 283). Their linearity gives no indication that they formed part of an enclosure system and they could well illustrate just another method of field clearance (Fowler 1981, 18). However, the pattern which shows a lack of cairns in close proximity to the wall suggests that the latter was either earlier than, or contemporary with, the cairns. If contemporary, then a reason for these two different methods of clearance should be sought; the walls may have formed some boundary, economic or territorial, and may be aligned to features such as crests or burns. During the short period of fieldwork undertaken, no examples sufficiently well defined over an extensive enough area were found to confirm such alignments. Recent aerial survey illustrates an additional form of field wall, namely that which encloses a well defined sub-rectangular plot. This further aspect of field systems in the area, together with the identification of features resembling rig, is of notable importance and should repay intensive fieldwork. The areas exploited undoubtedly extended beyond the field systems as they are defined today.

On available evidence it is suggested that the majority of sites illustrate a shifting settlement pattern possibly spanning the period from the late 3rd millennium bc to the mid 1st millennium bc, when the encroachment of heather and peat would have placed a great strain on an agrarian economy. In addition any changes in temperature or rainfall pattern would have been critical to the cereal ripening season. This is not to deny the possibility that a few of these hut circles may well have been constructed in the late 1st millennium ad, illustrating a continuity of settlement pattern in an area largely unaffected by Roman politics. Some may even have been associated with a predominantly pastoral economy of the 18th and 19th centuries AD, notably the isolated single-walled hut circles of large diameter and ill-defined form.

This limited survey highlights the need for a programme of more detailed fieldwork, which of essence would be a long term project and must be scheduled around such considerations as the grouse season, lambing and the vagaries of the British weather which render much of the area



inaccessible for many weeks of the year. It further illustrates that the ubiquitous hut circle, at least in this area, is represented by a range of field monuments which could well differ in chronology, typology and function to an even greater extent than they appear to do so today.

## ACKNOWLEDGMENTS

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