

Groups of small cairns in northern Britain – a view from SW Scotland

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ABSTRACT

A study of groups of small cairns in Dumfries and Galloway has provided an insight into some aspects of these unspectacular sites. Their role as funerary monuments is questioned, while the alternative agricultural interpretation is placed in a wider environmental and chronological context. The sites are considered against a Sub-Boreal and Sub-Atlantic background and, although the evidence is not always consistent, there are indications that they spanned both periods.

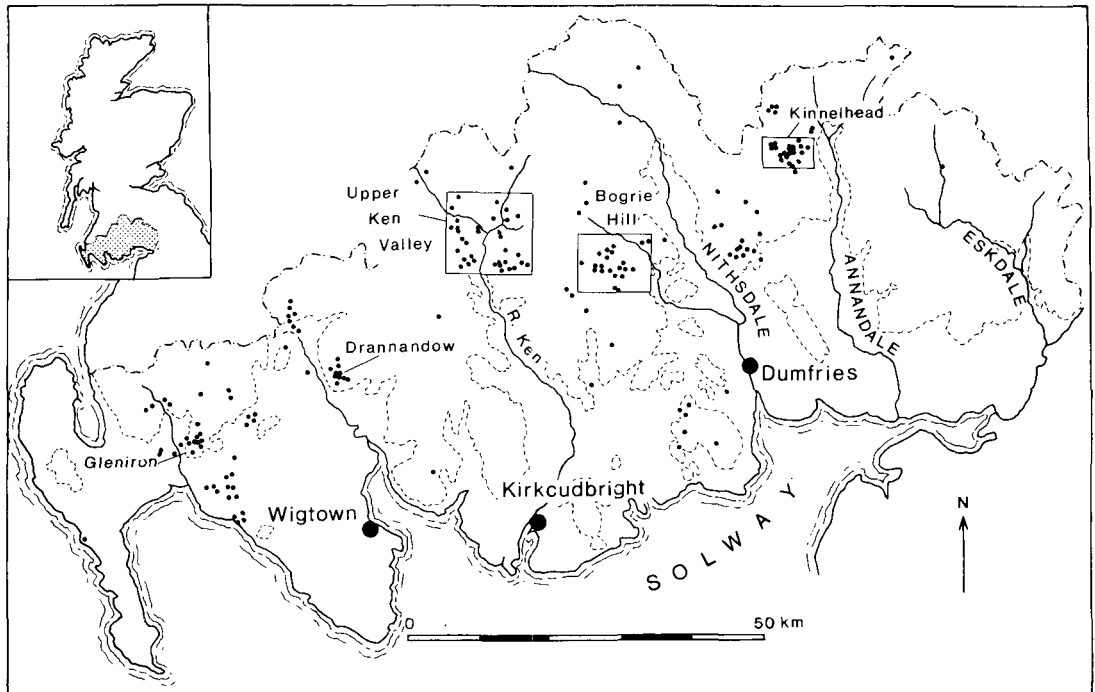
INTRODUCTION

Groups of small cairns – so-called ‘cairnfields’ – could never be described as impressive relics of human existence and it is therefore not surprising that they have attracted relatively little attention. Recent developments in the study of early agriculture have revived interest in these enigmatic sites, but it is the extensive enclosures and complex field systems which tend to dominate the literature. In recent works of synthesis (eg Fowler 1981a; Mercer 1981) very little discussion is devoted to groups of small cairns. To some extent this may be justified because the available data remain relatively limited and many of the questions posed over a quarter of a century ago by Graham (1957) remain unanswered. But there have been some small scale excavations, while groups of small cairns figure prominently in the increasing number of field surveys carried out in many parts of upland Britain: indeed the present article is based on the writer’s own survey of monuments in the Dumfries and Galloway Region of southern Scotland (illus 1).¹ The time is perhaps right to draw together some of this new information and to examine the contradictions as well as the conclusions which seem to be emerging.

DESCRIPTION

Their essentially disparate nature makes groups of small cairns extremely difficult to classify. The actual cairns may be as little as 1 m or so across and although most measure between 2 m and 5 m some exceed 10 m in diameter – comparable in size with cairns generally associated with funerary practices in the earlier Bronze Age. The number of cairns in a single group may also vary from three or four to several hundred. Occasionally it is possible to identify a pattern in the cairn distribution but this is rare and such organization that can be distinguished would usually

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ILLUS 1 Location map showing the distribution of groups of small cairns in Dumfries and Galloway Region

appear to be a response to local topography rather than a particular design. Some sites include other features amongst the cairns. Uneven scatters of stones, lengths of stony bank, lynchets and, very rarely, irregular field plots may be seen (illus 8). Unfortunately the relationship between these elements and the cairns themselves is not always clear.

Groups of small cairns do not form a homogeneous class of monument and in this respect the impression given by many published plans is perhaps misleading. There is a natural tendency to highlight sites which illustrate more than an apparently random scatter of cairns, and it therefore sometimes appears that small cairns are very frequently found with clear field systems defined by lynchets and stony banks. Evidence in SW Scotland and elsewhere, most notably Lanarkshire (RCAMS 1978) and Cumbria (Leech 1983), has shown that this is not the case and in fact the majority of cairns occur with no recognizable system of field plots. Even when stony banks are found it is rare that they run for any length or form any sort of enclosure (illus 6 & 7).

FUNCTION

While there can be little doubt that most of the cairns illustrated by Feachem (1973) were built of field clearance stone gathered from the associated fields, the discovery of burials within cairns on other sites (eg Chatton Sandyford, Northumberland, Jobey 1968; Wester-Yardhouses, Lanarkshire, RCAMS 1978) has encouraged a funerary interpretation. This view was certainly adopted by Ashbee (1958), Fell (1964) and Scott-Elliott (1967) and also seems to be favoured by

the RCAMS in Lanarkshire (1978). It is not proposed to dwell at length on the arguments for or against an agricultural or funerary interpretation, but several observations deserve emphasis. The occasional occurrence of lynchets in direct association with small cairns is strong evidence for an agricultural function, while the irregularity of many cairns seems to betray the rough hand of the farmer rather than the reverence of the undertaker. The short stony banks sometimes found with small cairns (illus 7) seem to be the linear equivalent of clearance cairns (cf Fowler 1981b) and have no parallel amongst the various funerary monuments in the British Isles, while direct association with distinct field plots would seem to provide conclusive proof for at least some sites (illus 8). Above all, however, it is the general absence of burials which makes the case for an overall funerary interpretation impossible to accept. Conclusive evidence for burial has been recovered from barely half a dozen small cairns of the 40 or so which have been excavated and published. Furthermore, it appears that those which have contained burials frequently stand apart from others in the same group as larger or more carefully constructed, indeed that was often why they were selected for excavation.

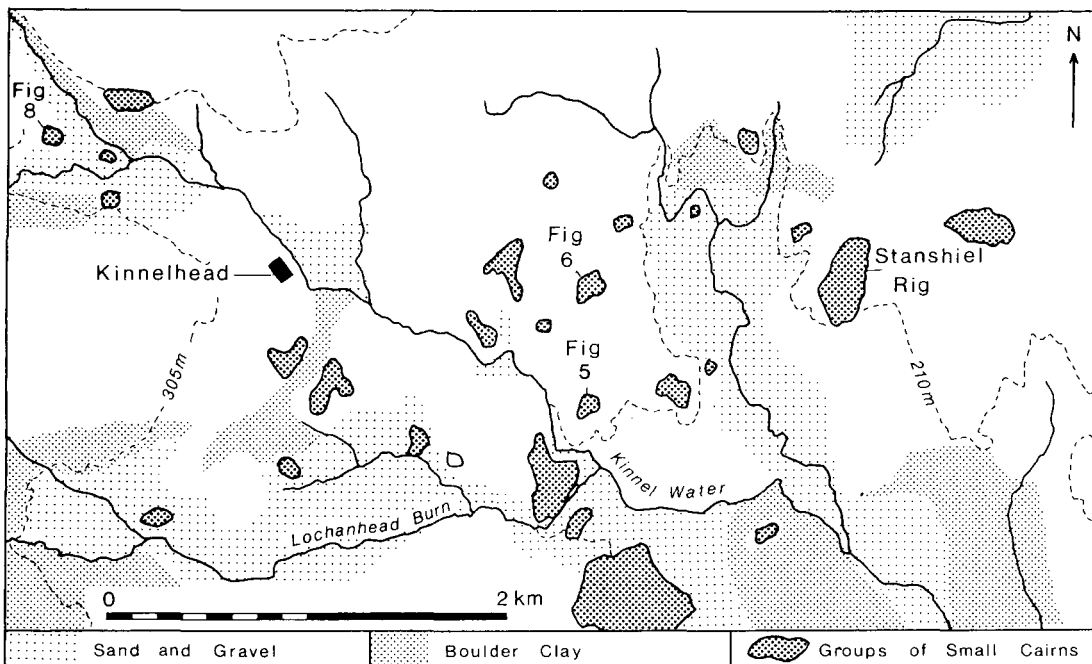
The arguments against an essentially agricultural interpretation have been conveniently summarized by the RCAMS in their *Lanarkshire* volume (1978, 9–10) but few are convincing. The paucity of direct funerary evidence has been explained as a consequence of the acid soil conditions which now prevail on most sites and which *could* have dissolved all trace of *inhumed* remains. High phosphate levels recorded beneath some small cairns could certainly indicate the former presence of a body but this need not necessarily have been human. In the course of fieldwork in SW Scotland the remains of over a dozen dead sheep were recognized crudely buried in small cairns and in time these too would increase the phosphate levels of the underlying soil. Clearance cairns are basically a waste product and as such could easily have received other agricultural and domestic rubbish which would also contribute to higher phosphate levels. Some of the cairns are comparable in size with recognized funerary cairns, but this fact is surely of dubious significance. The proportions of a clearance cairn are determined by the volume of unwanted stone within a specific area and in some circumstances this could be very large indeed. Finally there is the observation that in some cases cairns would not seem to constitute the most convenient method of disposing of field stones especially when nearby waste ground could have been used, thus obviating the need to encroach on agricultural land. If, however, the cairns were kept neat they would occupy the minimum space and the fact that they were sometimes constructed around large immovable boulders or outcrops of rock suggests that, where possible, they were built on unusable ground. Only since the advent of some sturdy form of transport and traction has it become worthwhile to remove unwanted stone completely from a field; otherwise it seems more convenient to form a cairn within easy throwing distance. It is worth pointing out that clearance cairns punctuate the ridges of many medieval and post-medieval cultivation plots where they were clearly an obstruction (Edwards 1978, fig 2; Yates 1978, fig 5). The concept of waste ground should also perhaps be challenged. The fact that peat has grown to cover some small cairns indicates that the state of the land has changed and areas which are now poorly drained need not have been so unattractive in the past.

Much of this discussion is perhaps rather academic as the distinction between funerary and clearance cairns is rather less marked than it sometimes seems. Field clearance stone probably formed the bulk of construction material in many burial cairns and there seems little reason why a burial could not be placed in a suitably modified field clearance cairn from time to time. However, the question of whether groups of small cairns as a whole were built *primarily* to contain burials or to absorb unwanted stone is still important to our understanding of the monuments and deserves consideration.

DISTRIBUTION

For obvious reasons the vast majority of cairns are found in areas where stone is close to the surface, either as bedrock or in various drift deposits. Consequently, both large funerary cairns and groups of small cairns tend to be features of the north and west parts of Britain. Groups of small cairns, however, do not enjoy an even distribution throughout this area; this is particularly clear from the various RCAM county volumes, particularly those for Scotland. Groups of small cairns are common in Sutherland (RCAMS 1911a) but, even though Mercer's work (1980) has brought several more to light, they remain relatively rare in the neighbouring county of Caithness (RCAMS 1911b). Similarly, many are recorded in Dumfriesshire (RCAMS 1920) and Lanarkshire (RCAMS 1978), but few occur in Selkirkshire (RCAMS 1957) or Peeblesshire (RCAMS 1967). They are common on the moors of Northumberland and North Yorkshire but still relatively unusual in the central Pennines. To a large degree this reflects different standards of recording, but the observation seems to have an underlying validity.

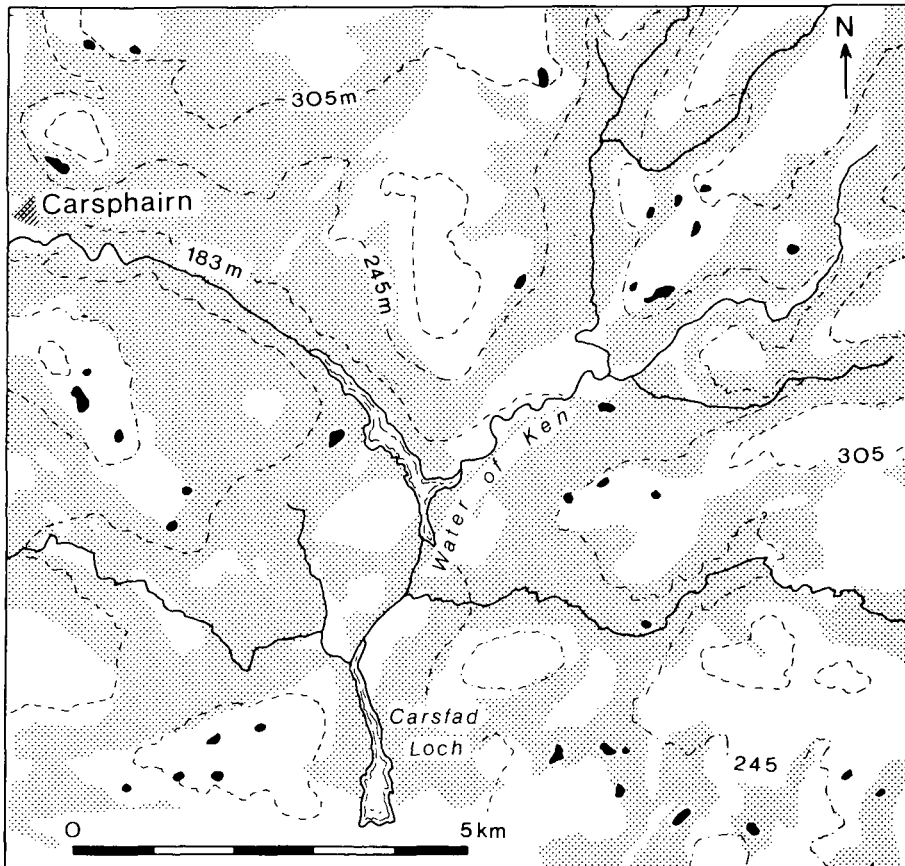
Viewed in this way, the overall distribution seems erratic, but certain common factors emerge when distributional characteristics are examined at a more local level. The relationship between groups of small cairns and altitude is particularly noticeable: within Dumfries and Galloway 70% of groups of small cairns occur between 183 m (600 ft) and 305 m (1000 ft) OD. When these altitude frequencies are compared with those of a random sample, using a χ^2 test following the method outlined by Reid (1972), the results indicate a strong and statistically significant correlation between these sites and height above sea level. The writer's general survey in SW Scotland was supplemented by a series of small area studies where the same phenomenon could be observed in more detail. These studies showed not only that the altitudinal limits of groups of small cairns were even narrower within a more restricted area, but also that those limits



ILLUS 2 Groups of small cairns at Kinnelhead, Annandale, showing the relationship with altitude and drift geology

varied from area to area. Thus, around Kinnelhead (NGR NT 0301) (illus 2) in Annandale, 84% of sites occur between 213m (700ft) and 305m (1000ft) OD while at Drannadow (NX 4071) in Stewartry District, the old county of Kirkcudbrightshire, 80% are between 152m (500ft) and 213m (700ft) OD and in Wigtown District 57% of sites are between 91m (300ft) and 152m (500ft). These differences clearly reflect limitations imposed by natural topography: only 12% of Wigtown District is above 152m (500ft) OD, so the paucity of sites above this altitude is scarcely surprising. However, it was precisely because of this sort of topographical variation that χ^2 tests were used, and in each study area statistically significant results were obtained. If one takes a slightly wider view it would appear that such narrow altitudinal limits are not unique to Dumfries and Galloway. Similar observations are recorded in North Yorkshire (Fleming 1971), Cumbria (Ward 1977), Northumberland (Jobey 1968) and the work of the RCAMS (1978) indicates the same characteristic in the distribution of groups of small cairns in Lanarkshire.

Before trying to explain this phenomenon it is important to consider the possibility that the present observable distribution of the sites is at least partly a reflection of more recent activity (Stevenson 1975). Destruction due to modern agricultural practice is minimal at altitudes above about 305m (1000ft) OD and consequently the rapid decrease in the frequency of groups of small

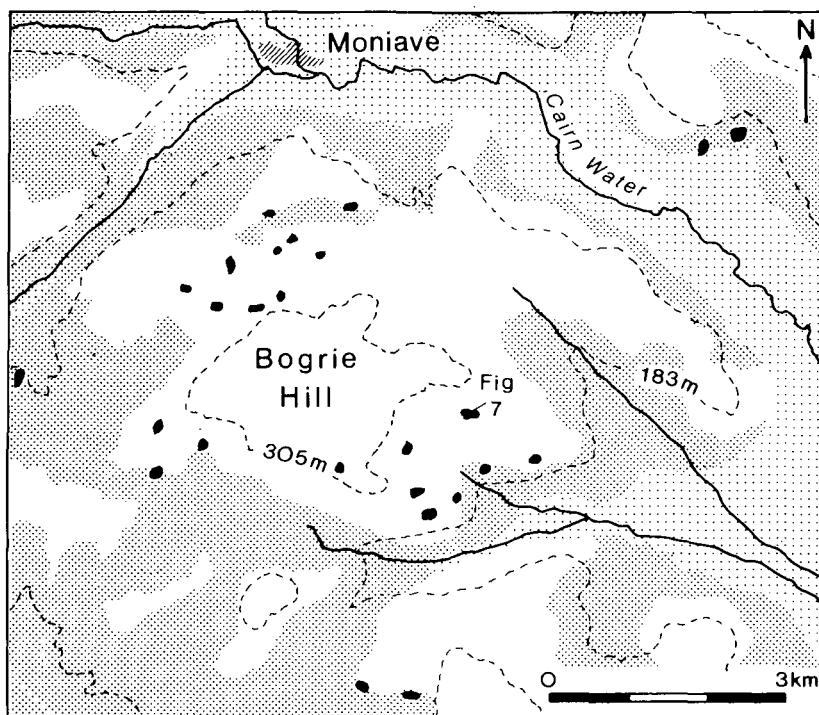


ILLUS 3 Groups of small cairns in the upper Ken valley, Stewartry District, showing the relationship with altitude and drift geology (stippled). Small deposits of sand and gravel on the valley floor are not indicated

cairns above this is probably a feature of the original distribution. But this need not be the case at lower levels, where it could be argued that small cairns have been removed to make way for enclosed fields and more intensive land use. However, this could be an unduly simplistic view. In the upper reaches of the River Ken valley in Stewartry District (NX 6085) (illus 3), few small cairns occur below 183 m (600 ft) whereas arable land rarely exceeds 122 m (400 ft). A similar separation can be seen in some other areas, such as Kinnelhead (NT 0301), suggesting that the lower altitudinal limits need not be the direct product of agricultural destruction but may be an accurate reflection of the original distribution. It is also perhaps difficult to see why groups of small cairns should be so comprehensively removed from lower ground when funerary cairns should survive occasionally, even though all were subject to the same agencies of destruction.

As well as altitude, drift geology clearly influenced the location of groups of small cairns. The fact that almost 90% of groups of small cairns in Dumfries and Galloway are found in areas where there is no drift, simply a rock subsoil, therefore seems significant, especially when the equally stony soils found on adjacent boulder clay deposits were so obviously avoided. This is particularly apparent at Kinnelhead (illus 2) where several sites are on either side of a band of boulder clay, but do not stray on to it, while another group is surrounded on three sides by boulder clay but all the cairns are on the driftless area between.

The relationship between groups of small cairns, altitude and drift geology is worth pursuing a little further. In some areas, most notably the upper Ken valley, groups of small cairns occur at somewhat higher altitudes than in most parts of Dumfries and Galloway (illus 3) and there is no obvious explanation for this in terms of differential preservation. It is interesting, however, that in



ILLUS 4 Groups of small cairns around Bogrie Hill, Nithsdale, showing the relationship with altitude and drift geology (light stipple – sand and gravel; heavy stipple – boulder clay)

this part of Galloway drift deposits are found higher up the valley sides than is usual and it therefore seems that the groups of small cairns are positioned generally at the lowest altitudes which are available and free from drift material, particularly boulder clay. Although this cannot be demonstrated so positively in other areas, the same phenomenon can perhaps be seen near Moniave, in Nithsdale, where the sites occupy a band of land around Bogrie Hill (NX 7985), generally just above the boulder clay (illus 4).

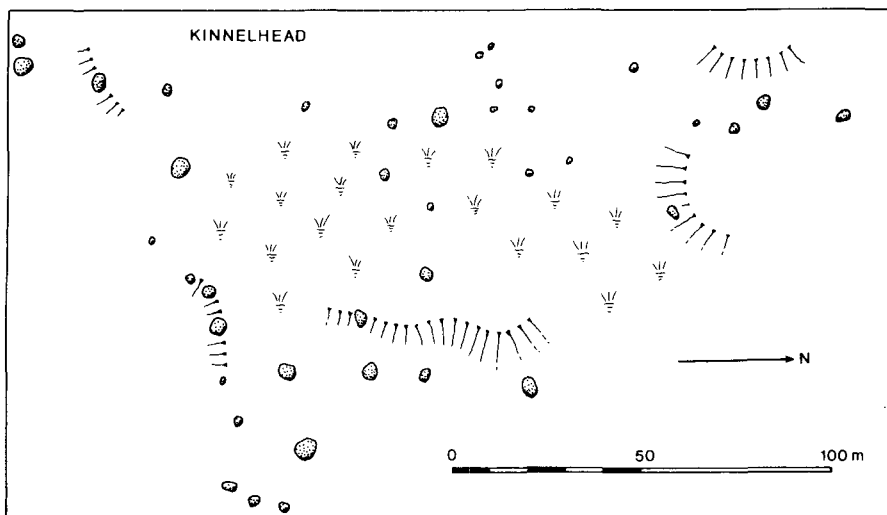
It is difficult to compare these observations with surveys in other districts since drift geology may differ. In some areas where groups of small cairns abound (eg the North York Moors) drift deposits tend to occur at rather lower altitudes, so the establishment of any direct relationship is less feasible. Most surveys, however, simply fail to comment on this aspect of site distribution. In spite of the present lack of corroborative data from elsewhere, the evidence from Dumfries and Galloway clearly favours an agricultural interpretation. Altitude and drift geology are major influences upon local climate and soil fertility and must have been of prime importance to early farmers; they would not, however, have been so significant in the selection of sites for the construction of funerary monuments when other factors, such as visibility and prominence, were perhaps of greater importance. To some extent this can be proved in Dumfries and Galloway by comparing the frequencies of groups of small cairns at various altitudes and on different subsoils with those of the large round cairns more typical of earlier second-millennium BC burials. Again a simple χ^2 test demonstrates a significant difference between the two classes of monument (Yates 1983a).

This all tends to confirm that groups of small cairns *en masse* are primarily an agricultural by-product and that the occasional use of individual cairns for burial was a distinctly secondary activity. Other distributional characteristics, while not providing conclusive proof, would at least support this view: in particular the fact that a significantly large number of sites are on S- and SW-facing slopes suggests that the additional warmth and light afforded by such locations were important. Gentle slopes were also favoured, perhaps because these allowed free natural drainage without rendering the area difficult to work.

CHRONOLOGY AND CONTEXT

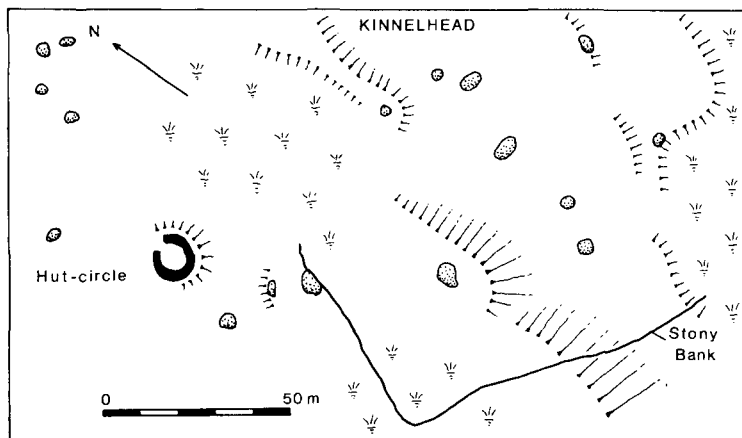
If an essentially agricultural interpretation is acceptable, then it seems appropriate next to try and set these sites into some sort of chronological and environmental context. The cairns themselves are not easily dated by usual archaeological techniques. As agricultural by-products it is not surprising that few diagnostic finds have been recovered and, as has been emphasized, those small cairns which contained datable burials often seem to be larger and rather more carefully built and so need not be typical of others in the same group. Radiocarbon assay of suitably stratified charcoal, or even humus in the old ground surface is perhaps the most reliable method, but since a cairn is an open structure contamination is always possible. Direct association with other monuments which can be dated by analogy may also provide valuable chronological information, but without excavation such relationships can rarely be established with confidence. The more superficial examination afforded by fieldwork can only point to co-occurrences, many of which may be entirely fortuitous. However, the more general fieldwork approach may record the frequencies of these locational associations and in some cases a more direct relationship may emerge.

To some extent the sites themselves provide important clues to the type of agriculture practised in between the cairns, and this too might be chronologically significant. The writer does not accept the view that the clearance of stone may have been necessary for pastoral farming



ILLUS 5 Scatter of small cairns at Kinnelhead – see illus 2 for location

(Yates 1983b) and, if this is correct, then some sort of cultivation must be implied. The spacing of the cairns is generally erratic (illus 5 & 6) which would have inconvenienced ploughing even with the more manoeuvrable ard. Straight lines of cairns do occur (illus 8), but not so frequently as is sometimes implied (Scott-Elliott 1967). They are occasionally found on the more extensive sites where the sheer area involved may have justified ploughing, otherwise relatively simple methods of tillage using a spade or hoe seem more appropriate. This is supported by the nature of the individual field plots identified amongst some groups of small cairns. These are usually squarish or polygonal rather than elongated and their dimensions rarely exceed 30 m. This would seem too small to permit turning if some means of forward traction necessary for ploughing had been used; the small scale of the vast majority of sites would also seem more compatible with spade cultivation. Some groups of small cairns are very extensive and it is these which have tended to



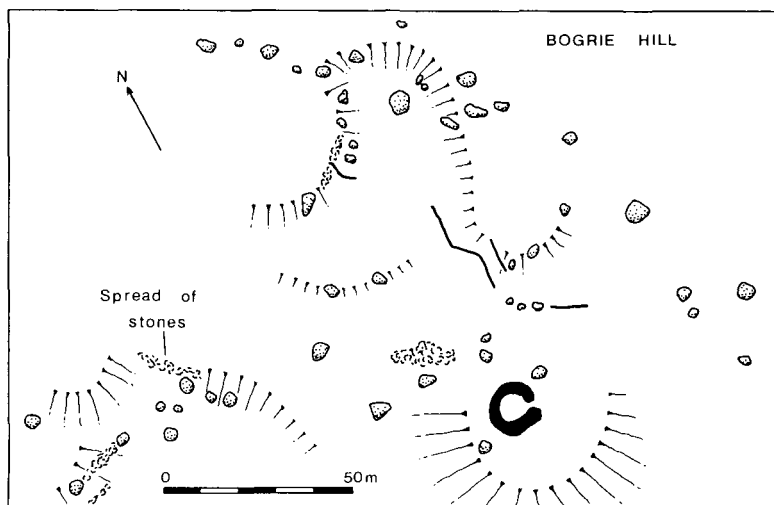
ILLUS 6 Small cairns, stony bank and hut-circle at Kinnelhead – see illus 2 for location

be surveyed and published, giving perhaps a rather misleading impression about such sites as a whole. Large sites are very much easier to recognize, while clusters of only a dozen or so cairns may be overlooked. In Dumfries and Galloway, wherever there has been a systematic search, small sites are by far the most numerous and in fact the majority of small cairns in the region occur in groups of less than 30. This can also be seen in areas such as Sutherland and Dartmoor (Fleming 1980) and, although larger groups appear slightly more common elsewhere, for example in Lanarkshire, many less extensive sites may await discovery. On the whole, groups of small cairns are not particularly close parallels for the large field systems which figure so prominently in recent publications (eg Bowen & Fowler 1978; Riley 1980) and above all they do not seem to indicate the sort of wholesale organization of the landscape suggested by Fowler's concept of prehistoric 'enclosure' (1981b). Even when stony banks are found they seem to be the linear equivalent of clearance cairns rather than enclosing walls and only very rarely can they be associated with other more extensive land divisions (illus 6 & 7).

A SUB-BOREAL CONTEXT: c 3200 BC–1200 BC

The view that groups of small cairns are the products of relatively simple and small-scale cultivation seems to favour an early rather than late date and could even imply primary or pioneer agriculture. Fowler (1981a, 178) suggested that these sites (broadly his type b – Montane type) belong before the Sub-Atlantic, and certainly in SW Scotland there is some environmental evidence which would support this.

Taylor (1975) has estimated that in the generally better climate of the preceding Sub-Boreal period the potential tree-line could have been 200 to 300 m higher than it is today. If that were so then only the highest hills of Dumfries and Galloway would have been treeless. Pollen evidence tends to confirm this, with diagrams from both lowland (Bloak Moss, Ayrshire, Turner 1970; Racks Moss, Nichols 1967) and upland (Snibe Bog and Loch Dungeon, Birks 1972) sample sites reflecting a densely wooded environment. All these pollen analyses also indicate several temporary phases of forest clearance throughout the Sub-Boreal and it is tempting to see groups of small cairns as the by-products of cultivation during these periods of deforestation. Indeed,



ILLUS 7 Small cairns etc around Bogrie Hill – see illus 4 for location

there would seem to be some rather circumstantial evidence for placing groups of small cairns in this kind of environmental and chronological context. At this time the driftless areas within the altitudinal range where these sites are found would have provided light, free-draining, slightly acid brown-earth soils with a relatively high nutrient status which might have persisted for long after the removal of the tree cover. The solid rock below would have prevented the deep penetration of tap roots so that any necessary extractions of tree stumps need not have been too difficult. It might also have encouraged shallow rooting species, particularly softwoods, which would in any case have been easier to fell. It is also possible that at these altitudes the tree cover was a little thinner than on the glacial clays at the lower levels.

Although the Sub-Boreal included most of the Neolithic and the earlier part of the Bronze Age, independent evidence for a Neolithic date for groups of small cairns is scarce. The early C14 date of 2890 ± 90 bc (Gak 1507) from one of a group of small cairns at Chatton Sandyford, Northumberland (Jobey 1968) still stands alone and although there are field clearance cairns associated with Neolithic settlements on Shetland (Calder 1956; Whittle 1979) these seem to belong with a local type of field system (Fowler's type a – Shetland type: 1981a) and close parallels are noticeably absent on the mainland. The fact that within Dumfries and Galloway only two of the 25 known Neolithic monuments occur within 200 m of a group of small cairns may also be significant.

Archaeological evidence in favour of a date in the earlier Bronze Age is more plentiful. Radiocarbon assays for material sealed below cairns at Millstone Hill, Northumberland (Jobey 1981) and Birrel Sike, Cumbria (Richardson 1982) have yielded dates of 1690 ± 90 bc (Har 1942) and 1690 ± 160 bc (Birm 1063) respectively. Slightly more recent dates of 1400 ± 90 bc, 1450 ± 90 bc, 1480 ± 80 bc and 1480 ± 80 bc (Har 2221, 2235, 2219 & 2213 respectively) were obtained for three small cairns on Shaugh Moor, Dartmoor (Wainwright *et al* 1979). Sherds of a beaker recovered from a disturbed small cairn at Alnham, Northumberland (Jobey 1966), might also indicate an early Bronze Age date and the discoveries of short cists in small cairns at Wester Yardhouses-Hare Law, and perhaps also Horse Law, both in Lanarkshire (RCAMS 1978, nos 113 & 64 respectively), could support this. The burial in one of a group of small cairns at the Brenig, Denbighshire, may also be Bronze Age (Lynch *et al* 1974), but before too much importance is attached to such funerary evidence a degree of caution is necessary; cists and unassociated burials are not necessarily of the Bronze Age, but throughout much of the second millennium bc the tradition of cairn burial was well established and it was therefore perhaps natural that some burials should be placed in clearance cairns. Similar cairns may well have continued to be constructed during other periods, but as different methods of disposal of the dead became current the necessary dating evidence would not be available for recovery.

Geographical association with the large round cairns generally accepted as Bronze Age funerary monuments has also been thought to imply a date in the earlier second millennium bc, but in fact co-occurrences of this sort are not so common as is sometimes supposed. In Dumfries and Galloway only 15 of the 360 larger round cairns in the region are found with groups of small cairns – proportionally fewer than the Neolithic examples cited earlier. If the association of small cairns with areas of cultivation is accepted, this lack of coincidence is not surprising as there is no reason why funerary monuments should be sited on agricultural ground.

The relationship between function and location is further emphasized when domestic sites are considered. Settlements of the earlier Bronze Age are notoriously elusive, but there is increasing evidence that many unenclosed hut circles may belong to this period. Discoveries of cord-impressed ware from a hut circle at Houseledge, Northumberland (Burgess 1980a) signal a date in the first half of the second millennium bc, while on Arran successive hut circles occupied

almost the same area from before 1538±60 bc (GU 1176) (Selkirk 1982). Excavations of a relatively low-lying unenclosed settlement at Look Out Plantation, Northumberland, have produced slightly more recent C14 dates of 1440±80 bc to 1140±130 bc, while a higher site on Bracken Rigg, Co Durham yielded a date of 1230±60 bc (both sites unpublished: information from Professor G Jobey). This is particularly significant in view of the frequency with which hut circles and small cairns are found together. In Dumfries and Galloway there are at least 39 groups of small cairns (19% of the total number of known sites) which include one or more hut circles in their midst and the strength of the association is emphasized further by the general paucity of hut circles in this area which do *not* have some small cairns nearby (within c 50 m). The same phenomenon can be observed in Sutherland and has also been recognized in Northumberland (Jobey 1981), in parts of Aberdeenshire (Edwards 1975) and on the North Yorks Moors (Fleming 1971). In Lanarkshire, by contrast, most groups of small cairns are recorded in the Carnwath/Dunsyre area where few settlement sites of any type have been located (RCAMS 1978). Even here, however, small circular foundations are noted amongst the small cairns at Windy Gate, Wester Yardhouses-Hare Law and Horse Law (*ibid*, nos 118, 13, 67), while cairns are also recorded with several unenclosed platform settlements (eg *ibid*, no 199). The association of groups of small cairns with unenclosed settlements, particularly hut circles, is closer than that with any other class of monument and seems far too persistent to be entirely fortuitous. Consequently, the evidence in favour of an earlier Bronze Age date for some hut circles must be relevant to the chronology of groups of small cairns.

A date in the earlier Bronze Age seems to have much to recommend it, but there are difficulties in reconciling the archaeological and environmental evidence. The pollen data indicate that during this period clearings were carved out of the natural forest, and although some of them may have persisted for quite long periods (Smith 1981), they were essentially temporary. Although there seems to have been a more permanent effect at higher altitudes, the resurgence of arboreal pollen levels after each clearance phase demonstrates substantial regeneration even at sites such as Snibe Bog, at over 250 m (825 ft) OD, and on the floor of a valley between the high Craignan and Kells mountain ranges. Clearings were not confined to upland areas and inhabitants seem to have utilized a wide variety of altitudes from the Galloway hills (Birks 1972) to the lowlands of the Solway shore (Nichols 1967). This all seems to emphasize the essentially mobile and exploitative method of land utilization which may be mirrored in the dispersed distribution of the larger funerary cairns of the period. A vision of early colonists moving stones into neat cairns within those newly opened areas may seem attractive (Fowler 1981a, 208) but it is probably false.²

It was suggested several years ago that clearance of stone may only have been necessary after cultivation had taken place for some time (Fleming 1971). Under most circumstances the soils below deciduous forest would have been the so-called 'Brown Forest Soils' with a well integrated humic content and a good open structure, both assisted and maintained by large quantities of leaf mould. Even on the rockiest subsoils almost all the stone would lie at the base of the profile in an A/C horizon where it could remain beyond the reach of even the most assiduous cultivation. In time, however, excessive exploitation without adequate manuring would reduce the proportion of humus; there could be a loss of soil structure with resulting compaction and the soil might become more susceptible to erosion by wind, water and simple soil creep. Cultivation could continue, but the 'deflated' soil would be physically thinner, consequently stones once buried deeply would be nearer the surface and would comprise a proportionately larger volume within the soil profile. Field clearance itself must therefore be taken to indicate a degree of permanence, suggesting that the areas of many groups of small cairns may well have a long history of exploitation before a single cairn was constructed. Groups of small cairns themselves do

perhaps imply a greater degree of permanence than is at present demonstrated by the pollen data for the earlier Bronze Age.

A second difficulty arises from the observation that in Dumfries and Galloway forest clearance throughout the Sub-Boreal extended over a variety of altitudes (Birks 1972; Nichols 1967). Groups of small cairns, on the other hand, enjoy a closely defined distribution with clear altitudinal limits and it is therefore difficult to argue that the two phenomena are associated.

Finally, most pollen analysts conclude that the composition of the vegetational cover during the Sub-Boreal clearance phases indicates not cultivation, but pastoral activity (eg Turner 1970). Cereal pollen is particularly scarce and, although it may not always have been distinguished, the importance of weeds of pasture seems conclusive enough. It is possible that the clearances were initially cultivated and only later turned over to pasture (Fleming 1971; Smith 1981); or perhaps most clearances were used for grazing, except those between 183 m and 305 m (600–1000 ft) OD, which were cultivated more intensively and for longer. Apart from its obvious contrivance, this suggestion is unconvincing because the one pollen diagram to produce clear evidence of cereal cultivation in the late Sub-Boreal is that from Rack's Moss (Nichols 1967), a low-lying site at least 12 km from the nearest known group of small cairns. This particular conflict in the data is not unique to SW Scotland, but, although similar difficulties can now be seen in Cumbria (Leech 1983), the evidence from NE England is perhaps more compatible (Gates 1983). In all but the most specialized systems of land utilization pastoral and arable agriculture are complementary activities and, although emphasis may change, it is difficult to see one practice in use to the exclusion of the other in any prehistoric society. There can be no doubt that some groups of small cairns do belong to the earlier Bronze Age and that the cultivation they represent should be reflected in the palaeobotanical record, but for the moment the contradiction remains.

A SUB-ATLANTIC CONTEXT: 1200 BC→

The problems outlined above perhaps suggest that a later date might generally be more acceptable but unfortunately inconsistencies in the evidence persist. The climatic deterioration which heralded the cooler and wetter conditions of the Sub-Atlantic towards the end of the second millennium bc would logically have rendered the thinner and lighter upland soils less agriculturally viable. They would have been more vulnerable to loss of structure, leaching and consequently diminished fertility. Theoretically, this would provide an ideal occasion for the abandonment, not the settlement of such soils. In Dumfries and Galloway peat was certainly accumulating more rapidly towards the end of the Sub-Boreal and during the early Sub-Atlantic, and heathland species tolerant of poorer soil conditions are represented more commonly in the pollen record. Tree cover, particularly on the higher hillslopes, also became thinner. However, much of the region remained densely afforested well into historic times (Birks 1972; Turner 1970) and there is also abundant evidence for settlement in the uplands throughout much of the first millennium bc (Jobey 1971; Condry 1979). This need not have been associated with cultivation, but an unpublished pollen profile sampled close to several of these settlement sites and also adjacent to the group of small cairns on Stanshiel Rig, in the Kinnelhead area at about 213 m (700 ft) OD, indicated that cereals were grown nearby at roughly this time³. It therefore seems possible that Bradley (1978) is correct in suggesting that the significance of climatic deterioration has been over-emphasized. Soil degradation at this time could well have owed at least as much to excessive use and it was probably a combination of exploitation and climate which encouraged podzolization and blanket bog development.

Upland cultivation was clearly possible, but perhaps the sort of mobility envisaged in earlier periods was no longer feasible. With the extension of agriculturally non-productive areas and,

perhaps, also a somewhat larger population (Burgess 1980b, 239), pressure on land, particularly good land, would have increased, forcing more permanent occupation and a greater degree of selectivity. The kinds of soils on which groups of small cairns are located were quite probably still wooded and may well have remained attractive for new clearance and cultivation in the early Sub-Atlantic, but with persistent cultivation in poorer climatic conditions soil deflation would have been encouraged and field clearance would have become particularly necessary. With careful management they may have continued in use for many years before different farming practices were adopted or the areas were abandoned.

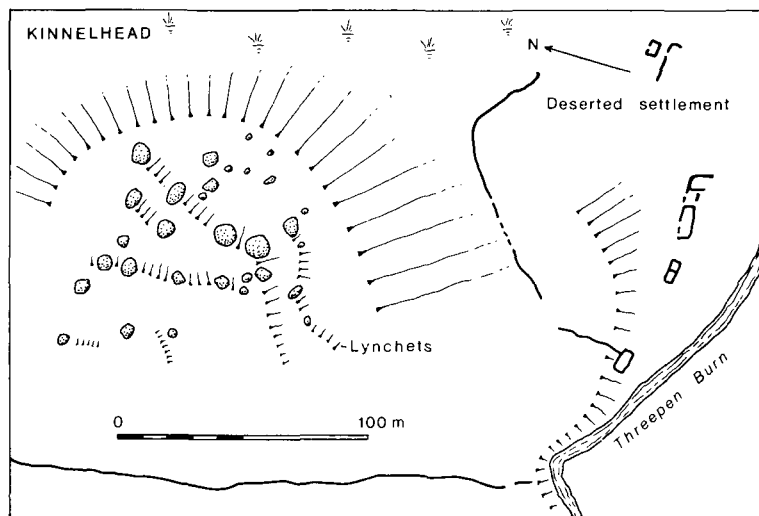
Although this may be a convenient model, there is little direct dating evidence. The triple 'kerb-cairn' amongst the cairns at Millstone Hill, Northumberland (Jobey 1981) would certainly fall into this general period, but the discovery of a ring-headed pin datable to the second century bc with a burial beneath one cairn amongst the group at Alnham (Jobey 1966) suggests a much later date. In both cases, however, the relationship with the other cairns is difficult to establish. From the second millennium bc onwards settlement sites are recognized more frequently and it is the co-occurrence of small cairns with these monuments which provides some of the most interesting data. The importance of the recurrent association of groups of small cairns with unenclosed hut circles has already been emphasized, but the significance of this is not limited to the earlier Bronze Age. Many of these sites, together with the similar unenclosed platform settlements, have also produced C14 dates in the later Bronze Age. The evidence from NE England has been discussed elsewhere (Gates 1983; Jobey 1983), but it is perhaps worth drawing attention to sites on the Isle of Jura (1264 ± 80 to 795 ± 70 bc: Stevenson, this volume) and now from the north of Ireland at McIlwans Hill, Ballyutoag, County Antrim (740 ± 80 bc, UB 2576). As a group the dates are remarkably homogeneous, but there is evidence that these simple unenclosed house types continued later into the Iron Age and beyond. The C14 dates from hut circles at Kilphedir, Sutherland suggested two periods of occupation in the fifth and second centuries bc (Fairhurst & Taylor 1971) and the date of 355 ± 70 bc (UB 414) from the site at Scrabo, Co Down (AYIA 1970) also falls in the Iron Age, while the discovery of two glass ring fragments outside the hut circle at Moss Raploch, Stewartry District (Condry & Ansell 1978), might indicate continuation into the Romano-British period.

Other types of settlement site enjoy a rather more closely defined chronology, but their association with groups of small cairns is not so marked. Only 13 groups of small cairns in Dumfries and Galloway occur with small, lightly defended settlements or 'homesteads', and the distinction is perhaps emphasized by more general distributional differences. Enclosed settlements of this sort are generally much more common in the east of the region, in the upland of Annandale and Eskdale, where they form an extension to a wider and more complex settlement pattern throughout the borders area during much of the first millennium bc. They are relatively uncommon to the west of Nithsdale. Groups of small cairns, by contrast, have a predominantly westerly known distribution, extending as far east as Annandale, and it is therefore not surprising that this is where most co-occurrences are found. This would seem to suggest that any association is entirely fortuitous. However, in Dumfries and Galloway unenclosed hut-circles tend to be most abundant in the west of the region along with the small cairns. It therefore seems that hut circles and enclosed homesteads have almost mutually exclusive distributions which in turn might imply at least some degree of contemporaneity. The weight of present dating evidence is against this, but the possibility that the distinction is economic or political rather than chronological must be borne in mind (Macinnes 1982).

If some groups of small cairns can be placed in the Sub-Atlantic period, then the concept of marginal cultivation is perhaps relevant. This would certainly agree well with the idea of

small-scale spade-cultivated plots in upland areas, particularly if poorer soil and climatic conditions made agriculture at these altitudes increasingly difficult. The discoveries of an ard stilt from Milton Loch, near Castle Douglas, dated to 400 ± 100 bc (K-1394) and an ard beam from Lochmaben, dated to 80 ± 100 bc (K-1867) (Fenton 1968), demonstrate that quite sophisticated cultivation methods were probably in use at lower altitudes by the second half of the first millennium bc. The recognition of cereal pollen in the sample from Racks Moss (Nichols 1967) would also suggest cultivation of the lowlands at very approximately the same time. As possible indicators of marginal cultivation, groups of small cairns would reflect climatic fluctuations as well as economic and social pressures (Parry 1978). The circumstances which led people to cultivate marginal land and the times at which this occurred are generally unknowable, but it is worth noting the suggested improvement in climate towards the mid first millennium bc (Turner 1981). The massive military presence on the Roman frontier in the first and second centuries AD may also have provided a strong economic impetus to increase crop production (Manning 1975, but see Jones & Walker 1983). Occupation need not have been continuous, but on each occasion the removal of stone would have been necessary, old cairns would grow and new cairns would be built. It is interesting in this connection that, at Stanshiel Rig, Feachem (1973) suggested two phases of land use, associating the later, more organized field system, with the distinctive Romano-British settlement on the site.

The phenomenon of marginal cultivation continues to the present and although no groups of small cairns seem to be very modern, small rectangular foundations of medieval and post-medieval settlements are occasionally found nearby (illus 8). Similarly, some groups of small cairns occur with the irregular enclosures characteristic of upland farming in Galloway before 19th-century improvements. Perhaps these more recent settlements were simply attracted by the same characteristics which were favoured by earlier occupants, and on the rare occasion where any sort of check against estate maps is possible (eg Gleniron, Wigtown District: Yates 1983b) most associations would seem to be fortuitous. Most cultivation at this time was carried out in



ILLUS 8 Small cairns with field plots adjacent to a deserted medieval or post-medieval settlement at Kinnelhead – see illus 2 for location

plough- or even spade ridges and although clearance cairns are occasionally found amongst the characteristic undulations (Edwards 1978) this is not a frequent observation. Sometimes shielings are also found surrounded by few small cairns. In these cases the association is neither direct nor contemporary. It seems that the cairns provided valuable building material in otherwise featureless upland.

SUMMARY AND CONCLUSIONS

There seem to be two distinct, but not necessarily mutually exclusive, approaches to groups of small cairns. On the one hand they can be seen as an inevitable stage in the agricultural development of certain areas, where, following perhaps many years of cultivation, clearance becomes necessary as a result of progressive soil deflation and impoverishment. All field monuments tend to reflect the ultimate phase of their development, so groups of small cairns could easily be secondary to earlier field systems which have not generally been recognized, perhaps because enclosures and other structures were of timber and have perished, leaving no surface indications. If this is so, then clearly many groups of small cairns must mark the final stage of use before abandonment, never developing beyond small-scale plots for spade cultivation. A few may mark more successful exploitation in that they became very extensive, but such large sites need not have been in complete use at any one time and must still reflect the same, essentially simple, cultivation methods. Finally, of course, these too failed. Other sites may have been superseded and the cairns removed to make way for more complex or simply more organized field systems, perhaps suitable for cultivation by ard or plough. This seems to be a possibility at several sites in the Gleniron area of Wigtown District (Yates 1983b), and the juxtaposition of small cairns and small enclosed fields or regular field plots, which also seem to occur quite frequently in NE England (Gates 1983), may reflect the same phenomenon. In both areas it is noticeable that the cairns very rarely impinge directly upon the other field systems and although it is possible that they are broadly contemporary, reflecting different farming methods adapted to suit particular crops or soil conditions, an independent origin or sequential relationship seems more likely.

If groups of small cairns do not arise from a natural development then they may reflect a more sporadic cultivation of certain parts of the uplands, peripheral to main areas of tillage, and occupied according to climatic, economic and social pressures. The uplands were used in this way throughout historic times (Parry 1978) and with the increase in marginal land envisaged in later prehistory this would certainly seem possible from the Bronze Age onwards. It is perhaps significant that the recorded groups of small cairns in Dartmoor occur in the north west, away from the more extensive and organized fields to the south (Fleming 1980).

Whichever interpretation is preferred, groups of small cairns as a whole could have enjoyed an extremely long currency and this seems to be borne out by the available dating evidence. However, some periods are more probable than others. A Neolithic context is difficult to demonstrate, and a medieval or post-medieval date is likely in only a small number of cases. The arguments in favour of an earlier Bronze Age date are quite strong, even if the environmental data are contradictory, but some, admittedly circumstantial, evidence suggests that a later date may be more acceptable for many groups of small cairns. There is a tendency at the moment to place many of these sites in the second millennium BC on the basis of somewhat restricted evidence. It is hoped that this paper demonstrates that other chronological and environmental contexts are possible.

NOTES

- 1 This work comprises part of a PhD thesis submitted to Glasgow University in April 1983. Several detailed surveys of areas mentioned in the present article are included in the thesis and will be published separately in future editions of *Trans Dumfriesshire Galloway Natur Hist Antiq Soc*.
- 2 See now Yates 1984.
- 3 The diagram, prepared by Miss G Rae under the supervision of Dr J Dickson, Dept of Botany, Glasgow University, is dated by parallels with other pollen profiles.

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REFERENCES

- Ashbee, P 1958 'Excavation on Kildale Moor, North Riding of Yorkshire', *Yorkshire Archaeol J*, 39 (1958), 179-92.
- AYIA 1970 Association of Young Irish Archaeologists, *Excavations 1970*, 9.
- Birks, H H 1972 'Studies in the vegetational history of Scotland, II. Two pollen diagrams from the Galloway hills, Kirkcudbrightshire', *J Ecol*, 60 (1972), 183-217.
- Bowen, H C & Fowler, P J (eds) 1978 *Early Land Allotment*. Oxford. (= *Brit Archaeol Rep*, 48.)
- Bradley, R 1978 *The Prehistoric Settlement of Britain*. London.
- Burgess, C 1980a 'Excavations at Houseledge, Black Law, Northumberland, 1979, and their implications for earlier Bronze Age settlement in the Cheviots', *Northern Archaeol*, 1 (1980), 5-12.
- Burgess, C 1980b *The Age of Stonehenge*. London.
- Calder, C S T 1956 'Stone age house sites in Shetland', *Proc Soc Antiq Scot*, 89 (1955-6), 340-97.
- Condry, J 1979 *A survey of later prehistoric settlement in SW Scotland*. M Litt thesis, Univ of Newcastle upon Tyne. (Thesis No G 115.)
- Condry, J & Ansell, M 1978 'The excavation of a hut-circle at Moss Raploch, Clatteringshaws', *Trans Dumfriesshire Galloway Natur Hist Antiq Soc*, 53 (1978), 105-13.
- Edwards, K J 1975 'Aspects of the prehistoric archaeology of the Howe of Cromar', in Gemmell, A M D (ed), *Quaternary Studies in North-East Scotland*, Aberdeen, 82-7.
- Edwards, K J 1978 'Excavation and environmental archaeology of a small cairn associated with cultivation ridges in Aberdeenshire', *Proc Soc Antiq Scot*, 109 (1977-8), 22-9.
- Fairhurst, H & Taylor, D B 1971 'A hut-circle settlement at Kilphedir, Sutherland', *Proc Soc Antiq Scot*, 103 (1970-1), 65-99.
- Feachem, R W 1973 'Ancient agriculture in the highland of Britain', *Proc Prehist Soc*, 39 (1973), 332-53.
- Fell, C I 1964 'Some cairns in High Furness', *Trans Cumberland Westmorland Antiq Archaeol Soc*, n ser, 64 (1964), 1-5.
- Fenton, A 1968 'Plough and spade in Dumfries and Galloway', *Trans Dumfriesshire Galloway Natur Hist Antiq Soc*, 45 (1968), 147-83.
- Fleming, A 1971 'Bronze Age agriculture on the marginal lands of north-east Yorkshire', *Agr Hist Rev*, 19 (1971), 1-24.
- Fleming, A 1980 'The cairnfields of north-west Dartmoor', *Proc Devon Archaeol Soc*, 39 (1980), 9-12.
- Fowler, P J 1981a 'Later Prehistory', in Piggott, S (ed), *The Agrarian History of England and Wales*, Vol I, ii, *Prehistory*, Cambridge, 63-298.
- Fowler, P J 1981b 'Wildscape to landscape', in Mercer, R J (ed), *Farming Practice in British prehistory*, Edinburgh, 9-54.

- Gates, T 1983 'Unenclosed settlements in Northumberland', in Chapman, J C & Mytum H C (eds), *Settlement in North Britain, 1000 BC–1000 AD*, Oxford, 103–48. (= *Brit Archaeol Rep*, 118.)
- Graham, A 1957 'Cairnfields in Scotland', *Proc Soc Antiq Scot*, 90 (1956–7), 7–23.
- Jobey, G 1966 'Excavations on palisaded settlements and cairnfields at Alnham, Northumberland', *Archaeol Aeliana*, 4 ser, 46 (1966), 5–50.
- Jobey, G 1968 'Excavations of cairns at Chatton Sandyford, Northumberland', *Archaeol Aeliana*, 4 ser, 48 (1968), 5–50.
- Jobey, G 1971 'Early settlements in eastern Dumfriesshire', *Trans Dumfriesshire Galloway Natur Hist Antiq Soc*, 48 (1971), 78–105.
- Jobey, G 1981 'Groups of small cairns and the excavation of a cairnfield on Millstone Hill, Northumberland', *Archaeol Aeliana*, 5 ser, 9 (1981), 23–43.
- Jobey, G 1983 'Excavation of an unenclosed settlement on Standrop Rigg, Northumberland, and some problems related to similar settlements between Tyne and Forth', *Archaeol Aeliana*, 5 ser, 11 (1983), 1–21.
- Jones, G D B & Walker, J 1983 'Either side of Solway: Towards a minimalist view of Romano-British agricultural settlement in the north-west', in Chapman, J C & Mytum, H C (eds), *Settlement in North Britain 1000 BC–1000 AD*, Oxford, 185–204. (= *Brit Archaeol Rep*, 118.)
- Leech, R H 1983 'Settlements and groups of small cairns on Birkby and Birker Fells, Eskdale, Cumbria. Survey undertaken in 1982', *Trans Cumberland Westmorland Antiq Archaeol Soc*, n ser, 83 (1983), 15–23.
- Lynch, Frances, Waddell, J, Allen, D & Grealey, S 1974 'Brenig Valley excavations, 1973', *Trans Denbighshire Hist Soc*, 23 (1974), 1–56.
- Macinnes, Lesley 1982 'Pattern and purpose: the settlement evidence', in Harding, D W (ed), *Later Prehistoric Settlement in SE Scotland*, Edinburgh, 57–73. (= *Univ Edinburgh, Dept Archaeol, Occas Pap*, 8.)
- Manning, W H 1975 'Economic influences on land use in the military areas of the Highland zone during the Roman period', in Evans, J G, Limbrey, S & Cleere, H (eds), *The Effect of man on the landscape: the Highland Zone*, London, 112–16. (= *Counc Brit Archaeol Res Rep*, 11.)
- Mercer, R J 1980 *Archaeological field survey in northern Scotland, 1976–9*. Edinburgh. (= *Univ Edinburgh, Dept Archaeol, Occas Pap*, 4.)
- Mercer, R J (ed) 1981 *Farming Practice in British Prehistory*. Edinburgh.
- Nichols, H 1967 'Vegetational change, shoreline displacement and the human factor in the late Quaternary history of south-west Scotland', *Trans Roy Soc Edinburgh*, 67 (1967), 145–87.
- Parry, M 1978 *Climatic Change, Agriculture and Settlement*. Folkestone.
- RCAMS 1911a Royal Commission on the Ancient and Historical Monuments of Scotland, *Inventory of Monuments and Constructions in the County of Sutherland*. Edinburgh.
- RCAMS 1911b *Inventory of Monuments and Constructions in the County of Caithness*. Edinburgh.
- RCAMS 1920 *Seventh report with Inventory of Monuments and Constructions in the County of Dumfries*. Edinburgh.
- RCAMS 1957 *Selkirkshire – An Inventory of the Ancient Monuments*. Edinburgh.
- RCAMS 1967 *Peeblesshire – An Inventory of the Ancient Monuments*. Edinburgh.
- RCAMS 1978 *Lanarkshire – An Inventory of the Ancient Monuments*. Edinburgh.
- Reid, R W K 1972 'Facts and figures from fieldwork', *Proc Soc Antiq Scot*, 104 (1971–2), 268–82.
- Richardson, C 1982 'Excavation at Birrel Sike, near Prior Scales, Calder valley, Cumbria', *Trans Cumberland Westmorland Antiq Archaeol Soc*, n ser, 82 (1982), 7–27.
- Riley, D N 1980 *Early Landscape from the Air*. Sheffield.
- Scott-Elliot, J 1967 'The small cairn fields of Dumfriesshire', *Trans Dumfriesshire Galloway Natur Hist Antiq Soc*, 44 (1967), 99–116.
- Selkirk, A 1982 'Arran', *Curr Archaeol*, 7, 12 (1982), 358–63.
- Smith, A G 1981 'The Neolithic', in Simmons, I & Tooley, M (eds), *The Environment in British Prehistory*, London, 125–209.
- Stevenson, J B 1975 'Survival and discovery', in Evans, J G, Limbrey, S & Cleere, H (eds), *The Effect of Man on the Landscape: The Highland Zone*, London, 104–8. (= *Counc Brit Archaeol Res Rep*, 11.)
- Stevenson, J B 1984 'The excavation of a hut circle at Cùl a'Bhaile, Jura', *Proc Soc Antiq Scot*, 114 (1984).

- Taylor, J A 1975 'The role of climatic factors in environmental and cultural changes in prehistoric times', in Evans, J G, Limbrey, S & Cleere, H (eds), *The effect of man on the landscape: The Highland Zone*, London, 6-19. (= *Counc Brit Archaeol Res Rep*, 11.)
- Turner, J 1970 'Post-Neolithic disturbance of British vegetation', in Walker, D & West, R G (eds), *Studies in the Vegetational History of the British Isles*, Cambridge, 97-116.
- Turner, J 1981 'The Iron Age', in Simmons, I & Tooley, M (eds), *The Environment in British Prehistory*, London, 250-81.
- Wainwright, G J, Fleming, A & Smith, K 1979 'The Shaugh Moor project: First report', *Proc Prehist Soc*, 46 (1979), 65-122.
- Ward, J E 1977 'Cairns on Corney Fell, West Cumberland', *Trans Cumberland Westmorland Antiq Archaeol Soc*, n ser, 77 (1977), 1-6.
- Whittle, A 1979 'Scord of Brouster', *Curr Archaeol*, 6, 65 (1979), 167-70.
- Yates, M J 1978 'The excavations at Polmaddy, New Galloway', *Trans Dumfriesshire Galloway Natur Hist Antiq Soc*, 53 (1978), 133-46.
- Yates, M J 1983a *Cairns in Dumfries and Galloway*. PhD Thesis, Dept Archaeol, Univ of Glasgow.
- Yates, M J 1983b 'Field clearance and field survey: Some observations and an illustration from SW Scotland', in Hamond, F & Reeves-Smyth, T (eds), *Landscape Archaeology in Ireland*, Oxford, 341-56. (= *Brit Archaeol Rep*, 116.)
- Yates, M J 1984 *Bronze Age Round Cairns in Dumfries and Galloway*. Oxford. (= *Brit Archaeol Rep*, 132.)