

SOME ASPECTS OF THE TRANSITION FROM THE BRONZE- TO IRON- USING PERIODS IN SCOTLAND

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Introduction

This paper is intended to be a brief essay on, rather than a detailed exposition of, the theme which is described in its title. This theme concerns the problem of how and when the 'Bronze Age' gave way to the 'Iron Age' in Scotland, what this transition means in technological and social terms, and whether it is indeed justifiable to think of the history of the first millennium BC as being divided into two major parts in this way. Its aim at this stage is mainly to remind archaeologists that period labels do not automatically have any more validity or use than as simple chronological guides and that the evidence for alleged major differences between the various periods into which prehistory is customarily divided needs constantly to be checked and tested.

There are at least three major aspects to the problem of the transition between the time when bronze was the best available material for cutting tools and weapons and that when iron had largely taken over this role but, as space is limited, it is possible to consider only one of these aspects here, and that in only a fairly brief way. The first of these aspects is, what elements of the Scottish material cultures commonly described as 'Iron Age' are derived from older, Neolithic and 'Bronze Age' cultures, in other words what proportion of the 'Iron Age' population was indigenous? The corollary of this is of course the second aspect of the problem - what is the explanation for the many innovations in structures and material culture which do appear at various times in the first millennium BC?

The third aspect of the problem, which may appear to be a fairly minor one by the end of this paper, concerns the point in the first millennium when iron came into common use. I am going to deal mainly here with the first theme, that of cultural continuity between the two epochs, and I believe that there is in fact a large amount of evidence which strongly suggests that a good part of the 'Iron Age' population of Scotland was descended from the local peoples of earlier periods. This is indeed what one would expect unless some major catastrophe intervened and decimated the 'Bronze Age' population. However until recently the different kinds of evidence available for the two periods - burials and bronze tools and weapons in the 'Bronze Age', and defended and

other settlements with iron equipment and many other innovations in material culture in the 'Iron Age' - these differences have made it easier to assume, perhaps subconsciously, that there was some fundamental social divide between the first and second halves of the first millennium BC.

Burial Traditions

The first topic I would like to discuss concerns burials, since it seems clear that the use of cemeteries could provide good evidence, if such exists, for continuity of population between the 'Bronze' and 'Iron Ages'; they are already in the process of connecting the 'Iron Age' and the post-Roman period in northern Britain¹. There are in fact a number of graves and tumuli apparently of 'Bronze Age' type which seem to have been re-used, and in some cases actually made, in the 'Iron Age'.

Queen Mary's cairn was examined in the late 18th century and it had a number of urn burials in its western side, drawings of two of which appeared in 1793². In the centre was a massive cist, which was empty, but near it were found fragments of bones and a decorated Celtic bronze ornament which Childe thought might be part of a bridle bit. This could of course simply mean that the cist had been disturbed in the 'Iron Age' but in view of the statement that what seems to be part of a bronze double-edged comb was found with one of the presumably secondary urn burials, it may be that the whole construction is of 'Iron Age' date.

The cairn burial at Edderton in Ross-shire was found in the late 19th century by road-builders who first dug through the ditch surrounding the cairn and found in it a Cordoned Urn³. The central cist was examined on the following day after it had been broken up by the navvies and near it was found an 'Iron Age' glass bead with spiral ornament. So we may have here an example of a cist burial under a ditched cairn which was re-used, or even built, in the 'Iron Age' though the evidence is inevitably shaky because of circumstances of the discovery.

Cairn Hill at Monquhitter in Aberdeenshire was a cist burial found in the 19th century⁴. The cist contained some artefacts and a collection of curious stones which look like geological specimens. The artefacts included an 'Iron Age' glass armlet, an inlaid and other glass beads, a shale ring and a Roman intaglio. This again could either be an actual 'Iron Age' cist or an old one re-used.

At Moredun, in Edinburgh, was found a short cist of Early Bronze Age type

containing a crouched burial⁵. With it was an iron ring-headed pin, an iron La Tène III fibula and an iron penannular fibula so this burial can hardly be older than the first centuries BC or AD. At Granton Pier, near Edinburgh, two skeletons were reported in the 19th century as having been found 'sitting' (presumably this means crouched) in a cist with a spiral bronze finger-ring and a penannular fibula⁶. Again this burial must clearly be of 'Iron Age' date. There was another cist burial at Black Rock Cairn in East Lothian which contained an iron knife and a spiral finger-ring⁷. More recently a massive cist was found at Lochend near Dunbar, which contained at least 21 fragmentary inhumations with two iron penannular fibulae⁸. This was thought by the excavators to be an Early Bronze Age grave until the rusty bits of iron were subsequently identified.

Even long cists, which are usually supposed to be of post-Roman date, could well go back to pre-Roman times. Childe gave a list of twelve extended burials under cairns in Scotland with Early Bronze Age material in them, in oak coffins, rock-cut graves or long cists⁹. A similar long cist with an extended inhumation, though without a cairn over it, was found at Craigie near Dundee and this had with it a type Aa penannular fibula which could well be as old as the 3rd century BC¹⁰. Some long cist cemeteries occupy the same sites as Early Bronze Age burials; for example there was a short Food Vessel cist among the long graves at the Parkburn cemetery in Midlothian¹¹. So it is at least conceivable that some of these long cists could be older than the post-Roman date usually given to them.

Radiocarbon Dates for Burials

The available C-14 dates for burials of Bronze Age type are revealing when plotted together (Fig. 1). Cinerary Urns which were found by themselves and which have been dated earlier than 1200 BC are not included, but such dated urns are used when they were found in a cemetery with other, younger graves. The cemetery at Bromfield in Shropshire gave a 20th century BC date for the old ground surface under one barrow¹². The second date, in the 15th to 17th centuries BC, was for a cremation pit and an urn; the third was for a cremation pit with a Cinerary Urn dated to the 9th century and another cremation pit was made probably in the 8th century. These dates show that a 'Bronze Age' cemetery was being used, quite probably continuously, until well into the first half of the first millennium BC. Ryton-on-Dunsmore has one dated cremation, in a plain, gritty urn, which falls clearly into the 8th century BC¹³. There is also a slightly earlier date for a pit containing charcoal and a 9th or 8th century date for the fill of the ditch of a nearby enclosure. Many other urned cremations were found at this site which

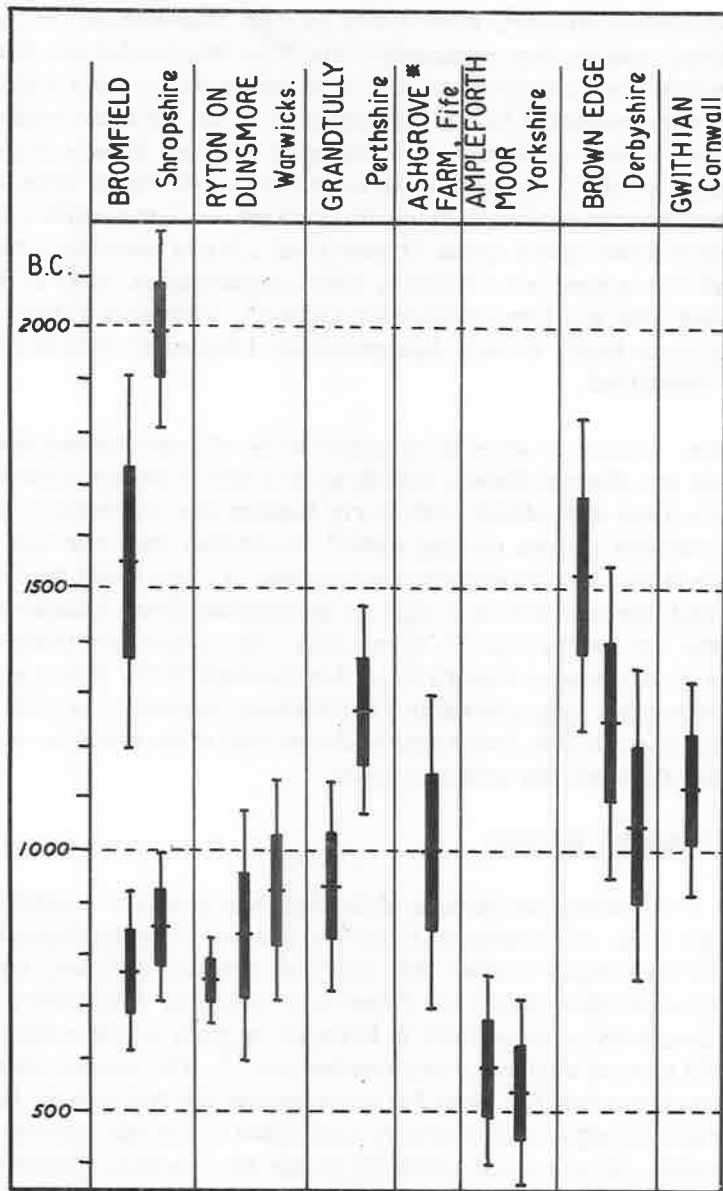


Figure 1. Radiocarbon dates for graves and cemeteries of 'Bronze Age' type; the dates are shown as time spans, the thick lines representing one standard deviation and the thin extensions two. No isolated graves older than 1200 BC have been included but, where such early interments occur on the same site as later ones, all the dates from that site are shown. The asterisked site is the Beaker inhumation.

is clearly of great interest. Grandtully in Perthshire produced a Cordoned Urn with a cremation which was dated to the 13th century BC and a cremation in a pit dated to the 10th century¹⁴. Then there is the anomalous Late Beaker burial at Ashgrove Farm in Fife which was dated to the 10th or 11th centuries BC¹⁵. The site at Ampleforth Moor in Yorkshire is particularly interesting¹⁶. It consists of a number of small Wessex-type bowl barrows, surrounded by ditches, which had all been robbed in earlier years. Some of them were recently investigated and Dr Ian Longworth analysed the pottery from the old ground surfaces of barrows 3 and 7. He thought it looked like 'Late Bronze Age' material and drew a parallel with the carinated sherds from the Heathery Burn cave in County Durham. This view was later strikingly confirmed by C-14 dates from samples of charcoal from under these two barrows which fell in the 6th or 7th centuries BC.

The pattern suggested by these dates thus seems quite clear. 'Bronze Age' burial practices, in the form of urned and un-urned cremations both under barrows and in flat graves, were continuing in some parts of the country well into the first millennium BC and, in some areas, right down to 700 or 600 BC. This supports by implication the evidence given earlier for the survival of Early Bronze Age cist burial practices into the 'Iron Age'.

Radiocarbon Dates for Hillforts and Settlements

This conclusion might not mean very much on its own but the second chart of C-14 dates complements it and adds greatly to its significance (Fig. 2). It is composed of the available C-14 dates for hillforts, timber-framed hillforts, palisaded enclosures and small drystone forts, all structures which until a few years ago were thought of as 'Iron Age' and dated later than about 400 BC. The very early C-14 dates for some of these sites, falling as far back as the 12th century BC, might be dismissed as aberrations and some clearly are. For example the 12th century BC date for the timber raft under the vitrified wall at Cullykhan was done on material which is later than an occupation layer which produced the samples dated to the 5th/4th centuries and the 1st/2nd centuries BC respectively¹⁷. Similarly the semibroch at Rhiroy on Loch Broom gave two anomalously old dates which must relate to some undetected early occupation nearby, or to the use of ancient wood. This is because, apart from general considerations of the much younger age of these structures¹⁸, one of them came from material from a layer above charcoal which gave the first century BC or AD date¹⁹. The site at Vaul on Tiree produced 13th/12th century BC charcoal from a primary broch construction deposit which was stratigraphically later than samples dated to the 5th and 4th centuries BC²⁰.

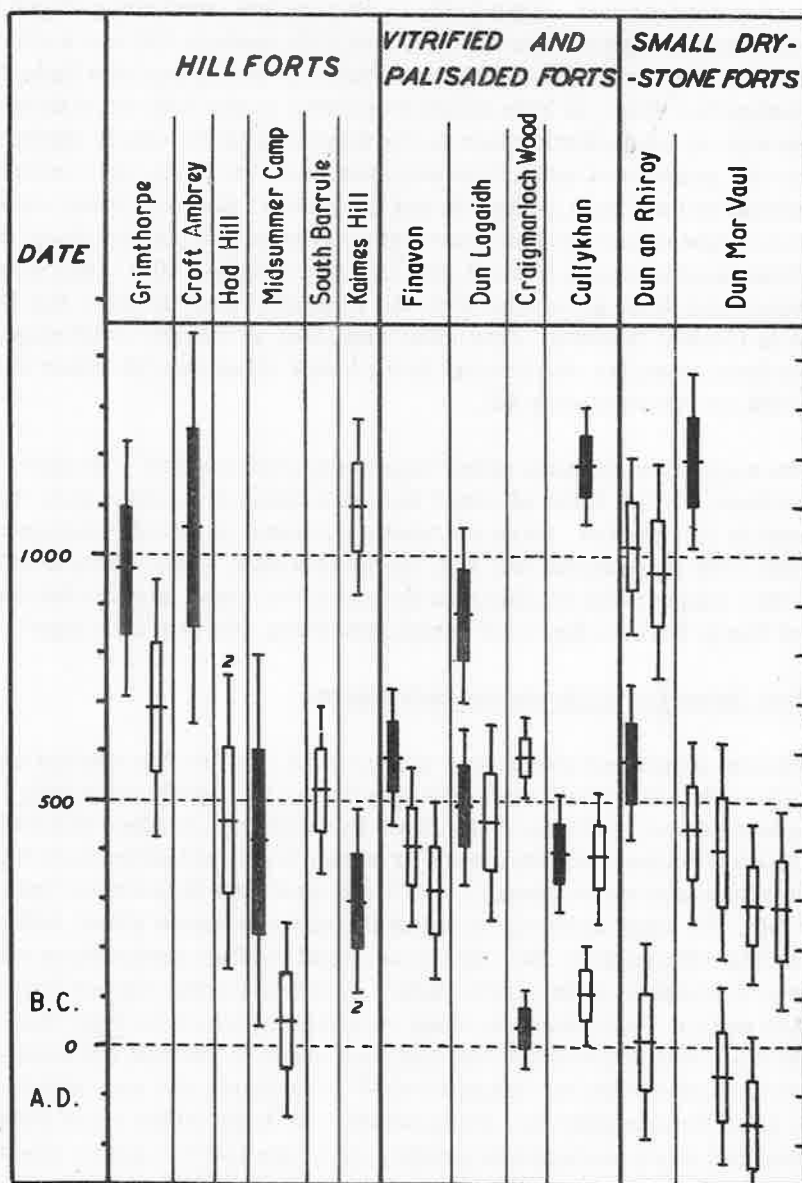


Figure 2. Radiocarbon dates for hillforts and allied 'Iron Age' sites, depicted in the same way as in Fig. 1. The black dates are for samples reported as being associated with a construction phase and, in the case of the two marked with a '2', a secondary such phase. The others are from occupation layers or other deposits.

These three groups of dates were thus quite clearly wrong according to the stratigraphy of the sites concerned and one might conclude from that that all such early hillfort dates are erroneous. But it is not so easy to dismiss some similarly early dates from English hillforts. For example, Grimthorpe in Yorkshire gave a 10th/11th century BC date for animal bones low in the primary fill of the rock-cut hillfort ditch²¹. This sort of material, animal food refuse in an occupation layer which is clearly linked with the construction of the hillfort, is much harder to dismiss than the wood charcoal from the other three sites, which could have been lying about for a long time prior to reaching its final position. The Croft Ambrey hillfort in Shropshire gave a sample of charred grain which had been grown somewhere in the period from the 10th to the 12th centuries BC. One would expect grain to give a reliable radiocarbon date because it is a short-lived organism, representing one year's growth, and is not likely to have been kept for very long after harvesting.

The Kaimes Hill hillfort in Midlothian gave a 4th/5th century date for charcoal from a rampart of the second phase of the fortification but a much earlier date in the 11th or 12 centuries BC for charcoal from a hut within the rampart. This may mean that there was a hilltop settlement on Kaimes as early as 1100 BC and perhaps long before the fortifications were put up²². Thus we may now have to think in terms of hilltop sites, or hohensiedlungen, which were settled early in the first millennium BC and which were later fortified in various ways.

Even if some of these early radiocarbon dates can be dismissed as aberrations one is still left with a strong likelihood that the occupation of some of these 'Iron Age' sites overlapped by several centuries with the 'Bronze Age' burial practice of urned and un-urned cremation. This conclusion also strikingly illustrates what is certainly the greatest virtue of radiocarbon dating for prehistoric archaeology, which is not its value for giving absolute dates but is the fact that it can link together chronologically sites and finds between which there would otherwise be no detectable connection whatever. In other words, as the dates slowly accumulate, it will broaden and deepen our knowledge of all the varieties of disparate activities, both human and natural, which were going contemporaneously in each successive period in the past. Even apart from the old C-14 dates shown in the chart (Fig. 2) there has been evidence for several years that some so-called 'Iron Age' sites were occupied considerably earlier than had hitherto been supposed, at a time in fact when bronze was still in use.

Early Sites in the Tyne-Forth Province

Turning first to the Tyne/Forth province, one palisaded site there, Hownam Rings in Roxburghshire, was excavated in 1948 and the importance of its results has not always been fully appreciated. The excavator found that the site had originally been a palisaded hilltop settlement; subsequently the perimeter of the enclosure was changed to a single, massive stone wall; later another change to a small multi-vallate hillfort took place and finally it became an open settlement dated by Roman material²³. There was no evidence of any marked change in the material culture throughout these four phases of the site's use. Hownam Rings seems to me to provide a very strong and important clue to what was going on in parts of Scotland (and probably England as well) at this time, that there were hilltop and other settlements which were inhabited at a much earlier stage than used to be thought. We now know from radiocarbon dates that some palisaded sites could have been founded in the 6th or even the 7th centuries BC²⁴ so that such sites therefore started their occupation in what can only have been the local late bronze-using period, judging from the independent chronology for the metalwork²⁵. Thus settlement at these sites, presumably by the same community and their descendants, could well have started in the bronze-using period and continued for many centuries.

Early Sites in the North-Eastern Province

Turning to the North-Eastern province - the main zone of the vitrified forts (which are of course simple stone walls with internal frameworks of timber beams which have been set on fire and fused) - other C-14 dates obtained in recent years have put the period of the construction of some of these hillforts also back to the 6th and 7th centuries BC. The building of the fort at Finavon, for example, has now been carbon-dated very probably to the 7th century BC and its occupation layer produced fragments of the thick-walled, plain, bucket-and barrel-shaped vessels, whose clay contains large pieces of gravel and which is sometimes known as Dunagoil ware. The same pottery was found in the Abernethy timber-framed fort together with a bronze spiral finger-ring, a bronze La Tène Ic fibula and an iron ring-headed pin of English type²⁶. These metal artefacts are the kind of material which was used, originally by Childe and later by other workers²⁷, to date the construction of the vitrified forts to quite a late period, to the 1st or 2nd centuries BC in fact, but it now seems that such objects are likely not only to be irrelevant but actually misleading if used for this purpose. They could all have been brought to hillforts which were already several centuries old.

The gritty pottery has been found in other vitrified forts and also in quite different types of sites (brochs, crannogs, palisaded sites), and it now clearly goes back to nearly 700 BC at least. One sherd of it was found in the 'Late Bronze Age' levels of the Covesea Cave in Morayshire among the well known 'flat-rimmed' sherds²⁸. In the lower stratum at Sheep Hill, and probably associated with the small vitrified fort, the same pottery was found together with fragments of moulds for unidentifiable bronzes which seemed nevertheless to be substantially larger than the small 'Iron Age' ornaments known²⁹. This suggests that at this site also the gritty pottery was used by a primarily bronze-using community. Incidentally this gravelly ware is quite distinct, in shape and fabric, from most of the 'Iron Age' wares of the Tyne-Forth province.

Recently some material came into the Hunterian Museum which had been obtained from sites under peat at the Gryfe reservoir in Renfrewshire; it included Beaker sherds as well as pieces of a thick gritty ware from vessels with the same slightly inturning, rounded lips as the Dunagoil pottery³⁰. Until a pollen analysis of the superimposed peat stratum is available it will not be possible to know whether the two groups of sherds, thick, gritty pots and Beaker, were definitely contemporary. Yet there is at least a chance that this evidence may take the gritty ware back to the Early Bronze Age.

Cullykhan is a very important site which may well be providing another classic example of a settlement first inhabited when bronze was in use and going right on until late- or even post-Roman times³¹. The section illustrated supra, p. 18, which is based on one drawn on the site by the writer, shows the vitrified wall on top of an earlier occupation stratum. It seems to me that it is at least possible that the settlement on the promontory itself would go back substantially before the foundation of the great gate-tower on the neck of the promontory. Both the stratigraphy at the site and the bronze tanged chisel could in my view be interpreted in this way, though obviously definite conclusions on this point will have to wait the completion of the excavations. The chisel of course links with that in the Adabrock hoard in Lewis which is usually dated to the 7th century BC³². Another point about Cullykhan is that if the occupation of the site does go back really early, to the end of the 'Bronze Age', then it might provide an opportunity for detecting when the use of iron was introduced in north-eastern Scotland, if one could identify and separate out stratigraphically the bronze and the iron slag.

The North-eastern province holds further evidence which may make better sense if it be supposed that the bulk of the population continued to live there during the bronze- and iron-using periods. Boulders pecked with cup-and-

ring designs, or with simple cup-marks, are usually assumed to belong to the early part of the second millennium BC from their occasional association with Early Bronze Age cist graves and standing stones³³; a similar age is implied by the links between their geometry and that of the stone circles³⁴. It is not clear for how long these rock carvings were made but the period of manufacture could have been a long one running into several centuries. Yet a considerable number of forts and settlements of the much later iron-using period have produced small detached cup- and cup-and-ring-marked boulders and slabs, both lying loose and built into walls. Brochs in Caithness³⁵, Sutherland³⁶, and Stirlingshire³⁷ have yielded them as have many souterrains, especially in Angus³⁸. It is conceivable that the interest in these carvings at such a date reflects a continuous tradition of knowledge about them over 1500 years or more.

The part of the country which was later known as Pictland is thus beginning to show a fair amount of evidence for continuity of settlement, of material culture and therefore presumably also of population, from perhaps 700 BC or even earlier right down to Roman times. This must clearly be taken into account when terms like Bronze Age and Iron Age are used, and when one decides exactly what they mean.

The Introduction of Iron

So far I have not really touched on the problem of the introduction of iron because there is not a great deal of reliable evidence on the mainland of Scotland either for the date or the manner of this. The socketed iron axes from Traprain Law and other sites seem to suggest rather clearly that we are dealing, north of the river Forth at least, with an established bronze-using class within the population who had initially to be persuaded to use iron, and one of the first tricks of persuasion was to copy the favourite bronze axe in iron, even though this must have been a tiresome task for the iron smiths who had to hammer out the implement instead of casting it³⁹

A neglected item of evidence shows that one iron object first appeared in Scotland as early as the 7th or late 8th centuries BC, in the 'floruit' of the late bronze-using period, though whether this was more than an isolated phenomenon is another matter. The Balmashanner hoard from Angus contained among other things a socketed bronze axe, some Covesea armlets and a cast bronze bowl, and it has been dated to the late 8th or 7th century BC by its associations⁴⁰. There was an iron ring with the bronzes when they were found⁴¹. It is unfortunate that, as far as domestic sites are con-

cerned, bronze and iron implements are likely to be rare discoveries as most of the former were doubtless collected for scrap when broken and the latter can too easily rust away. Possibly the discovery and identification of bronze and iron slag on such sites is potentially the most rewarding approach to this problem but few stratigraphical excavations have so far revealed iron slag in a dateable early context. At the moment the period of the introduction of iron-working on the Scottish mainland, as opposed to that of a few iron objects, is largely unknown, though one may assume that the date given to the latest bronze metalwork, the latter part of the 6th century BC, also indicates the time when iron was replacing bronze on a large scale. The clearest evidence comes from Shetland and is described below.

It would be wrong to leave this problem without at least mentioning briefly its most important aspect, that of the social context in which the introduction and widespread adoption of iron tools and weapons occurred. One must surely infer the arrival of members of a caste or profession of iron smiths from elsewhere and, when one considers the impact that the new metallurgy had on weapons, notably swords, it is difficult to believe that iron-working came other than by way of such immigrant smiths protected either by resident or by immigrant chiefs and warriors. An alternative explanation must envisage the gradual spread of such smiths of their own accord among the population, surely a far-fetched idea which involves the assumption of the complete absence of rulers and men of power. Perhaps there were at first pockets of iron-users among a predominantly bronze- and stone-using population. The occurrence of socketed iron axes in the tiny timber-framed redoubt of Rahoy and in the great hillfort of Traprain may be significant here. But the solution of this problem must await the careful excavation of more early iron-using sites.

The Situation in Shetland

The problem of the use of the terms 'Bronze Age' and 'Iron Age' comes up even more acutely in Shetland where we see very clearly the irrelevance of applying these old labels to the island culture sequence. The courtyard house village of Jarlshof is well known and in one of these dwellings was found the famous deposit of fragments of clay moulds for casting various 'Late Bronze Age' tools and weapons - swords, socketed axes, pins and so on⁴². The main point about these courtyard houses is that, apart from these clay moulds, the material culture was entirely of stone and bone. The inhabitants were essentially a stone-using population and, even though the presence of the moulds shows that this particular village was inhabited in about the 7th century BC, the fact that they were an unique find shows equally clearly

that the term 'Bronze Age' is meaningless for this society, which was formed primarily of stone-using agriculturalists. The stone tools from the courtyard houses consisted of knives, chopping tools and hoes and the bone implements of awls, scrapers and mattocks. An earlier horizon at Jarlshof shows that the occupation of this site probably goes back to the Early Bronze Age; the decorated bone plaque from this level has parallels in the Portuguese copper age⁴³. Some of the associated bone chisels have parallels, as Professor Childe pointed out long ago, in the Baltic Mesolithic cultures⁴⁴. Plans of undoubtedly Neolithic houses are known from Shetland; the ones from Stanydale and The Gairdie are particularly close to the dwellings dated to the 'Late Bronze Age' at Jarlshof⁴⁵. As Professor Piggott showed, the miniature versions of perforated stone battle-axes found in them suggest a date for these dwellings in the Late Neolithic or in the Early Bronze Age, perhaps in the middle of the 2nd millennium BC⁴⁶. So in Shetland we have very clear evidence for the continuity of culture and domestic structures from the middle of the second millennium BC down to the mid-first millennium and indeed right on till AD 300 or 400. A courtyard house was found on top of secondary buildings at the broch of Gurness in Orkney and can hardly be earlier than the 4th century⁴⁷.

Paradoxically Jarlshof also illustrates, as well as the continuity of the population of Shetland from the Stone Age to the 'Iron Age', one of the clearest examples of how the introduction of iron was accompanied by that of new types of dwellings and pottery⁴⁸. Iron slag appears first in the second of the pre-broch villages there, which consisted of round stone huts with internal radial stone piers. A new style of carinated pottery, some of it black-burnished, also makes its first appearance in this village and, like the houses, is quite unlike anything that went before. The pottery has been claimed to show fairly clear links with some of the Iron Age A wares of Wales⁴⁹. Thus Jarlshof probably provides the only clear example in Scotland of how the 'Iron Age' was introduced to one settlement in what used to be considered the classic manner - by a sharp break with previous traditions, apparently caused by an influx of new people.

The Situation in the Western Isles

The various islands of the Hebrides show even more complex patterns of ancient Neolithic and 'Bronze Age' cultures surviving into the iron-using period with cultural innovations, and possibly small-scale immigrations, occurring in the late 'Bronze Age'. There is a group of characteristic leaf-shaped bronze swords, centred on Skye, which are classified by Dr Coles as the local Minch type⁵⁰, and a few more of them have been found on the

Outer Isles and in Ross-shire. This seems to me to be very significant: what were these bronze swords, the most advanced weapons of their age, doing in that far western part of the country? Since one must presumably think in terms of one man or one school or caste of bronze smiths producing these particular swords, what in fact was this one particular smith doing there? Why did craftsmen go to this remote region to produce what were then the ultimate in weapons just as a smith went to Jarlshof at about the same time? The Adabrock hoard of bronzes includes a tanged chisel (parallel to that from Cullykhan) and two fragments of a beaten bronze bowl diagnosed by Professor Piggott as being of the Hallstatt 'C' continental type with cross-shaped handles, and therefore dateable to the 7th century BC⁵¹. These are real signs, one would think, of powerful chieftains in the Hebrides somewhere. One recalls that Coles dates the Minch bronze swords to the same final phase of the bronze-using period as the swan's neck sunflower pins, from about 550 BC onwards⁵², and that the sword from Inverbroom should therefore be of a similar age to the timber-framed hillfort of Dun Lagaidh a few miles away which was probably built and destroyed in the 6th century BC⁵³.

Yet the contrast between these signs of an aristocracy in western Atlantic Scotland at the end of the bronze-using period and some of the later native settlements and cultures is very marked. For example the village of Foshigarry in North Uist is a cluster of debased wheelhouses on the edge of the sea; the inhabitants did grow grain but they also used a series of unusual notched bone or antler mattocks, presumably for chopping the blubber off stranded whales, a tradition which of course goes back to Mesolithic times in Northern Europe⁵⁴. There is much else of interest in Foshigarry but space here only to point out that some of the pottery from this site seems to me to have ultimate Late Neolithic origins. One particular type of small cordoned urn or vase, though it has had much of its decoration added to in later times, is a type of vessel that definitely goes back to the pre-broch Iron Age and possibly back to Late Neolithic times as well⁵⁵. This wheelhouse site, and that at Allasdale in Barra, are the only places I know of where this particular style of pottery survives in quantity so late. Two similar small cordoned urns were found in a hut on Tiree which I suspect belongs in about the 3rd century BC⁵⁶; it is certainly earlier than the brochs. They are the same type of vase as those from Foshigarry only much less elaborately ornamented.

The broch at Vault too was founded on a site which had already been occupied for several centuries previously, judging from the C-14 dates, probably from about 500 BC or even a little before that⁵⁷. The pottery of the earliest

inhabitants of this site appears in abundance in all the subsequent phases of occupation until about AD 300 or even later. In other words there was a native population which must have started living on this site during the last phase of the local bronze-using period (though probably without bronze) and which lived on there through the period of profound innovation which started just before the arrival of the broch. These early levels produced no iron slag nor any evidence for metalworking at all. In a deposit dated to the 4th century BC by radiocarbon was found a gritty pot more appropriate to a mainland vitrified fort than to the Western Isles. So the continuity of ancient traditions is as equally evident on Tiree as at Jarlshof although this particular community at Vaul cannot be taken back before about the late 6th century BC.

A brief mention of some of the finds from Dun Ardtreck on Skye is appropriate although they are relevant here in only one way, in that the bone work discovered there seems to reflect some ancient traditions⁵⁸. Inside the fortlet were found a number of large pieces of red deer antler in various stages of having been cut and sawn. Among the artefacts one notices particularly the fish gorge, which has 'Late Bronze Age' and Mesolithic forebears (one was found in the Covesea cave), and several chisel-ended scrapers or gouges which have quite good parallels in the Obanian Mesolithic shell middens of Cnoc Sligeach on Oronsay⁵⁹. This does suggest that very old bone-making traditions were surviving in south-western Skye as late as the second or third century AD. The same chisel-ended implements were found in the Early Bronze Age levels at Jarlshof and were those in which Childe saw Baltic Mesolithic influence⁶⁰. A curious oval beach-pebble was also found at Dun Ardtreck, with two shallow, pecked depressions in opposite faces. Similar pebbles are known from the Maglemose and Ertebølle Mesolithic cultures in Northern Europe and from some English Mesolithic sites.

There is an unique settlement at Valtos in Lewis which, though it has not yet been scientifically excavated, seems to have been inhabited at the end of the first millennium BC judging by the pottery; this looks like Hebridean Iron Age material⁶¹. Yet the community may have been using stone tools even at that late date since a well-defined stone industry has been found there⁶². The site consists of an outcropping occupation level in sand dunes on the sea shore at Valtos with signs of stone foundations for dwellings, and it seems that the potsherds, including fragments of Roman samian ware, were found in a reasonably good association with the stone industry by Mr Lacaille some years ago⁶³. Though this evidence cannot be relied on too heavily it may indicate the presence of an antique stone-using community

in Lewis at the end of the first millennium BC.

Summary and Conclusions

In summary there seems plenty of evidence for the continuity of traditions in many parts of Scotland from the 'Bronze Age', and even from the Stone Ages, down into the 'Iron Age'. In chronological terms this is from about 700 BC and perhaps from much earlier, down to 100 BC and later. This must surely mean that large numbers of the population remained on the spot throughout these periods. As a corollary it is also becoming very clear that many of the sites and cultures which used to be thought of as 'Iron Age' and to be later than about 200 BC (in Scotland) were being established in the 7th or perhaps even in the 8th centuries BC while bronze was still in use. On the evidence at present available, which is admittedly slender, the spread of iron-working into Scotland seems likely to have taken place, with a few exceptions like Jarlshof, among already established communities. It seems to me that the term 'Iron Age' may not now mean very much except perhaps as a chronological term once it can be decided when iron had spread and largely replaced bronze. Questions like 'can there have been hillforts in the Bronze Age?' which one has heard at recent conferences refer to non-problems posed by an out-of-date terminology. One of the great virtues of C-14 dates is that they link in time sites and finds which could otherwise be thought to be quite separate because of the assumptions of the Three Age system. For example it can now be seen from the two charts that the later 'Bronze Age' urned and un-urned cremation burials and the earliest 'Iron Age' hillforts seem to have been deposited and occupied respectively at the same time.

The situation is that we need a new outlook and approach to the problem of the evolution of settlement in Scotland in the first millennium BC and I have tried to point to one way of doing this. There are other ways, of course, and this article does not attempt to give a balanced view, only to retail some new evidence in favour of cultural continuity in Scotland throughout the first millennium BC and to emphasise some old evidence which has sometimes tended to be overlooked. There remains of course the major problem of the significance of the many important cultural innovations of that millennium, including that of iron-working itself, some of which have been mentioned briefly. Completely ignored also has been the potentially important question of the environmental changes in vegetation, climate and probably in sea levels as well in the middle of the first millennium BC and their effect if any on human cultures. In fact all the results of these three major investigations need to be drawn together and integrated before any sort of real

understanding of the development of Scotland from 1000 BC to AD 80 can be obtained.

Notes

1. Thomas, C. The Early Christian Archaeology of North Britain (1971).
2. Ure, D. History of Rutherglen and East Kilbride (1793), 215-20, pl. I and V.
3. Joass, J.M. PSAS V (1862-4), 311-15, fig. p. 346.
4. Anderson, J. PSAS XXXVI (1901-2), 675-84.
5. Coles, F.R. PSAS XXXVIII (1903-4), 427-38.
6. Wilson, D. The Prehistoric Annals of Scotland (1863), 474.
7. Ewart, E. PSAS XLII (1907-8), 332-8.
8. Longworth, I.H. PSAS XCVIII (1964-6), 173-83.
9. Childe, V.G. Scotland before the Scots (1946), 119-20.
10. Hutcheson, A. PSAS XXXVII (1902-3), 233-40.
Also Fowler, E. PPS XXVI (1960), 149-77, esp. 172.
11. Henshall, A.S. PSAS LXXXIX (1955-6), 252-83; XCVIII (1964-6), 204-14.
12. Most of these dates, with their sources, are given in the CBA Archaeological Site Index to Radiocarbon dates for Great Britain and Ireland (1971).
13. I am very grateful to Mr John Bateman for permission to depict the two unpublished dates from Ryton on Fig. 1 and for information about the contexts of the dated samples. The published date is in Radiocarbon X (1968), 204.
14. Antiquity XLIII (1969), 216-17.
15. PSAS XCVII (1963-4), 174.
16. Wainwright, G.J. & Longworth, I.H. Yorks. Archaeol. J. XLII (1969), 283-94.
17. I am grateful to Mr Colvin Greig for permission to include the unpublished Cullykhan dates on Fig. 1.
18. MacKie, E.W. PPS XXXI (1965), 93-146, esp. 104 and 124-7.
19. DES (1969), 44-5.
20. MacKie, E.W. Antiquity, XLIII (1969), 15-26.
21. Stead, I.M. PPS XXXIV (1968), 148-90; for C-14 dates see footnote 12.
22. Simpson, D.D.A. Glasgow Archaeol. J. I (1969), 7-28.
23. Piggott, C.M. PSAS LXXXII (1947-48), 193-225.
24. Huckhoe, Northumberland, and Craigmarloch Wood, Renfrewshire; see footnote 12.
25. Coles, J.M. PSAS XCII (1959-60), 16-134.

26. Christison, D. PSAS XXXIII (1898-9), 13-33.
27. Childe, V.G. The Prehistory of Scotland (1935), 193-7 and 236-7; Scotland before the Scots (1946), 129-30; Stevenson, R.B.K. in Rivet, A.L.F. (ed.), The Iron Age in Northern Britain (1966), 20.
28. National Museum of Antiquities of Scotland, no. NM 191.
29. Hunterian Museum, University of Glasgow.
30. DES (1966), 40; the material is now in the Hunterian Museum.
31. Greig, C. Aberdeen University Review XLIII (Spring 1970), 274-83.
32. Coles, J.M. PSAS XCIII (1959-60), 16-134, esp. 49; Piggott, C.M. PPS XII (1946), 124.
33. Childe, V.G. The Prehistory of Scotland (1935), 115-18.
34. Thom, A. Systematics, VI (1968), 173-89.
35. RCAMS Inventory of Caithness (1911), 14-15, no. 34; 20, no. 53.
36. RCAMS Inventory of Sutherland (1911), 91-2, no. 270.
37. RCAMS Inventory of Stirlingshire (1963), 66, no. 44.
38. Wainwright, F.T. The Souterrains of Southern Pictland (1963); Carlungie I, Ardestie, Letham Grange, Pitcur II, Ruthven and Tealing III.
39. Rainbow, H.N. Archaeol. J. LXXXV (1928), 170-5; Childe, V.G. Scotland before the Scots (1946), 91-2.
40. Coles, J.M. PSAS XCIII (1959-60), 16-134, esp. 43.
41. Anderson, J. PSAS XXVI (1891-2), 182-8.
42. Hamilton, J.R.C. Excavations at Jarlshof, Shetland (1956), Chapter III.
43. *Ibid.*, Chapter II; 16, fig. 8.
44. Childe, V.G. Scotland before the Scots (1946), 25.
45. Calder, C.S.T. PSAS LXXXIX (1955-6), 340-407, esp. fig. 9.
46. Piggott, S. in Piggott, S. (ed.) The Prehistoric Peoples of Scotland (1961), 93.
47. RCAMS Inventory of Orkney (1946), 75-9, no. 263.
48. Hamilton, J.R.C. Excavations at Jarlshof, Shetland (1956), Chapter IV, esp. 39.
49. Alcock, L. Dinas Powys (1963), 17.
50. Coles, J.M. PSAS XCIII (1959-60), 45, map 9.
51. Piggott, C.M. PPS XII (1946), 124.
52. Coles, J.M. PSAS XCII (1958-9), 1-9; see also footnote 50.
53. DES (1969), 45.
54. Clark, J.G.D. Prehistoric Europe: the Economic Basis (1952), 69-72, fig. 33.
55. MacKie, E.W. PSAS XCVI (1962-3), 155-83, esp. 172-4.
56. *Loc. cit.*
57. MacKie, E.W. Antiquity XLIII (1969), 15-26.
58. DES (1965), 21; interim report is available from the writer.

59. Bishop, A.H. PSAS XLVIII (1913-14), 52-108, esp. figs. 36 and 39; the finds are now in the Hunterian Museum.
60. Hamilton, J.R.C. Excavations at Jarlshof, Shetland (1956), figs. 5 and 8.
61. Lacaille, A.D. PSAS LXXI (1936-7), 279-96; The Stone Age in Scotland (1954), 299-304.
62. Ibid.
63. RCAMS Inventory of the Outer Hebrides, Skye and the Small Isles (1928), 29, no. 98; see also footnote 61.