

Turning in circles: a new assessment of the Neolithic timber circles of Scotland

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ABSTRACT

The large and growing number of timber circles recorded in Scotland as cropmarks on aerial photographs testifies to the important part they must have played in the later Neolithic monumental repertoire. However, this record of plough-levelled sites remains poorly understood, partly due to the problems involved in the interpretation of timber circles from cropmarks and the limited research that has taken place. In addition, it is rarely integrated with evidence from excavations. This paper, based upon research undertaken in 2003 for a Masters dissertation (Millican 2003) and recently updated, is an attempt to remedy this imbalance and outlines the current evidence for timber circles in Scotland and the new insight this provides into these enigmatic sites.

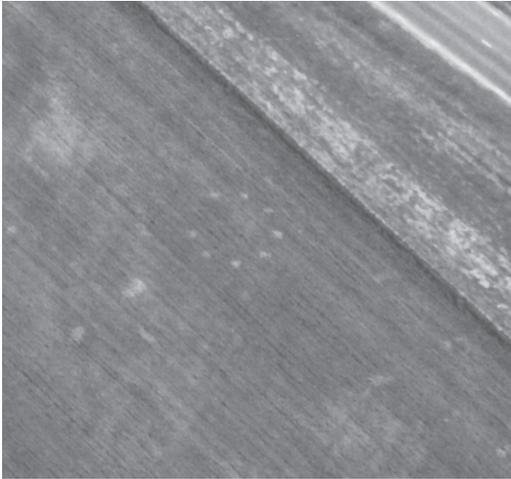
INTRODUCTION

Timber circles were built during the later Neolithic period (after *c* 3000 cal BC) and form a part of the Late Neolithic monumental repertoire in Scotland. Constructed of large timber uprights arranged in a circle, these sites are usually assigned a ritual or ceremonial role (Tolan 1988; Millican 2003; Gibson 2005) and are recorded either as circles of postholes uncovered during the course of excavation or as circles of pits recorded as cropmarks on aerial photographs (illus 1). A small number have now been excavated and a growing number have been recorded as cropmarks on aerial photographs. However, research into Scotland's Neolithic timber circles has been relatively limited, for a number of reasons. As timber circles were constructed of wood, they leave no trace above the ground and little survives beyond pits and postholes. As a result they remain relatively invisible in the archaeological record and tend only to come to light through chance

discoveries during excavation or when recorded as cropmarks. Only a small number of timber circles have been excavated in Scotland and the cropmark record of these sites remains poorly understood. In addition, until very recently, Scotland's Neolithic was known primarily through upstanding stone monuments such as chambered cairns and a few large earthwork sites (Barclay 1995). Although this focus is beginning to change, research has tended to focus primarily upon the more obvious stone monuments of the Neolithic period, rather than upon the less obvious and less well understood timber sites, such as the timber circles.

This paper is an attempt to begin to remedy this problem and I will begin by outlining what is already known about timber circles through excavation, aerial survey and other research. The problems involved in interpreting timber circles from cropmarks will be explored before drawing together the information gained from a new assessment of all the evidence for timber circles in Scotland. By bringing together all the

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ILLUS 1 Skateraw, East Lothian. Timber circle recorded as a circle of pits in a cereal crop (© Crown Copyright: RCAHMS)

excavated and cropmark evidence for timber circles in Scotland we can begin to discuss the nature of these little known sites.

PREVIOUS WORK

EXCAVATIONS

Most of what is understood about timber circles tends to be based upon the small number that have been excavated in Scotland and analogies with the greater number of timber circles investigated in England and Wales. In all, 18 timber circles – from a restricted range of contexts – have been excavated in Scotland. Timber circles have been uncovered within the henges of Cairnpapple Hill in West Lothian (Piggott 1950; Barclay 1999), Moncrieffe (Stewart 1985) and North Mains, both in Perth and Kinross (Barclay 1983) and Balfarg in Fife (Mercer 1981) and have been shown to pre-date the stone circles at Temple Wood, Argyll and Bute (Scott 1991), Machrie Moor I and II on the Isle of Arran (Haggarty 1991) and Croft Moraig, Perth and Kinross (Piggott & Simpson 1971), although this site

has been recently re-interpreted (Bradley & Sheridan 2005). What may have been a timber circle was found within Callanish II stone circle on the Isle of Lewis during peat stripping in the 1850s (Ashmore 1995, 13, 16). Timber circles have been found within the Later Neolithic palisaded enclosure at Meldon Bridge in the Borders (Speak & Burgess 1999), associated with a complex of features at Upper Largie, Argyll and Bute (Cook 2005) and adjacent to a Later Neolithic ‘timber hall’ at Carsie Mains, Perth and Kinross (Brophy & Barclay 2004). A possible timber circle was destroyed in 1951 during quarrying at Auchintek in Perthshire (Stewart & Feachem 1950–1).

These excavations have provided valuable information about Scotland’s timber circles as a whole and inform our understanding of these sites. These sites vary in terms of size, with diameters ranging from 47m at Upper Largie to around 2.5m at one of the Meldon Bridge timber circles, and not all the timber circles are truly circular, with many shown to have been elliptical in plan. The use of ramps to assist the erection of individual timbers is indicated by the presence of ramped post pits uncovered at North Mains, Machrie Moor I and Temple Wood. Although ramps have not been recognized at other sites, they can be difficult to recognize during excavation and so it is possible that similar methods may have been used to aid the erection of the posts at other sites.

Where it has been possible to estimate the dimensions of the timbers used, they appear to range in diameter from around 0.15m to a maximum of about 0.6m, though on the whole large diameter timbers appear to have been used. Estimating the possible height of the timbers though has proved to be a much more difficult task. When discussing the timber circles excavated at Balfarg, Mercer (1981) suggested a method of estimating height based upon the depth of the postholes and size of any ramps. He indicated that the timbers used to construct the main circle at Balfarg ranged in height from around 2m to about 4m with

the tallest posts located in the west section of the circle and the smallest in the east (*ibid.*, 149–53).

In discussing the excavations at North Mains timber circle, Barclay (1983) used Mercer's method to calculate that the timbers used at North Mains would have ranged in height from around 2m to 6m. However, he concluded that the very uneven pit depths at North Mains probably indicated an attempt to set the tops of the timbers to an even height, rather than suggesting that the heights of the timbers varied so considerably (*ibid.*, 181). Whether we should envisage the timbers of other timber circles set to an even height, as suggested at North Mains, or varying in height, as put forward for Balfarg, is difficult to determine. Nevertheless, both these sites indicate that tall, substantial timber posts were likely used to construct these timber circles.

Evidence for the type of wood used for the posts has been recovered at only three sites (Temple Wood, North Mains and Carsie Mains), which means that it is very difficult to make any general statements about the type of wood used to construct timber circles as a whole. Nevertheless, in all three cases oak wood was identified, suggesting that oak was the preferred type of wood used to construct these monuments. Whether this was the case at other timber circles remains to be seen, though the use of oak certainly corresponds with the wood types recovered at other forms of Neolithic timber monuments excavated in Scotland and more widely (eg Barclay & Maxwell 1991; Barclay et al 2002; Noble 2006). Indeed, oak would appear to have been the wood of choice for the construction of timber monuments (Miller & Ramsay 2002, 95). This may have been for purely practical reasons, as oak is one of the wood types most resistant to decay (Noble 2006, 57), but the consistency of use and continued selection above other wood types available may also indicate that oak had a symbolic role and an importance that went beyond the purely practical. It seems highly likely then that many

of the timber circles recorded in Scotland would similarly have been constructed of oak.

Limited quantities of material culture have been recovered from these sites; the only exceptions to this are the timber circles at Balfarg, where substantial quantities of Neolithic pottery, flint, burnt bone and charcoal were found associated with the southern and western postholes of the main circle (Mercer 1981, 84–101), and at Machrie Moor I, where finds of Grooved Ware pottery, pitchstone and flint were primarily associated with the postholes of the main timber ring of this complex site (Haggarty 1991, 62–3). Very little or no material culture has been recovered at most sites. Internal features, most taking the form of slight features such as post holes or pits, have been uncovered at around half of the excavated timber circles, though the exact form of these features varies from site to site. However, most of these features do not appear to be structural.

The excavated timber circles have been found in relatively restricted contexts, and this has had a major impact upon how timber circles as a whole have been understood. Most were uncovered while investigating other sites, such as henges or stone circles, meaning that timber circles have often been understood as components of other monuments rather than as monuments in their own right. They tend to be seen as secondary developments to henges, as precursors to stone or as lowland equivalents of stone circles (Gibson 2005, 8). Of those excavated to modern standards, only the timber circles at Carsie Mains, Upper Largie and Eweford were free-standing and not later replaced by a stone circle. This has tended to perpetuate the notion that timber circles existed only as components of larger monuments. However, a recent re-assessment of the timber circle at North Mains henge (Barclay 2005) indicates that this, and by analogy other timber circles located within henges, may have existed as free-standing timber circles prior to the construction of the henge monument. This suggests instead that some henge monuments

may have been secondary developments of timber circles rather than the other way round.

AERIAL PHOTOGRAPHY

These excavated sites form only a relatively small proportion of the timber circles recorded and so can only give a partial and potentially unrepresentative picture of Scotland's timber circles. Many more have been recorded as cropmarks on aerial photographs. Therefore, gaining an understanding of these cropmarks and the sites they represent is very important if we are to gain a fuller understanding of Scotland's timber circles. However, the aerial photographic record of these sites remains very poorly understood and only limited research into the cropmarks of timber circles has taken place. Timber circles are recorded on aerial photographs as circles of pits in cereal crops and are usually referred to as pit-circles; the pits dug into the subsoil to take the timber uprights cause differential growth of the cereal crops above ground. The recognition of pit-circles was one of the outcomes of concentrated archaeological aerial photography which began in Scotland in the mid-1970s (Maxwell 1978; 1983, 33). Few pit-circles were initially interpreted as Neolithic timber circles, however, largely due to the problems in interpreting simple circles of pits in cereal crops; pit-circles can represent either Neolithic timber circles, timber structures erected prior to the construction of later barrows or later prehistoric roundhouses. This ambiguity in their interpretation has remained a real barrier to understanding these sites.

Two student dissertations (Tolan 1988; Millican 2003) have gone some way towards tackling these problems of interpretation. Both attempted to identify all the pit-circles recorded as cropmarks in Scotland, some of which may represent Neolithic timber circles, and offered some limited interpretations. Tolan (1988) identified 32 pit-circles in the cropmark record and outlined the different ways in which these cropmarks could be interpreted, but was unable

to take interpretation much further or to clarify which of the cropmark sites related specifically to Neolithic timber circles. My own research (Millican 2003) identified 91 pit-circles in the cropmark record, of which 26 were interpreted as possible timber circles dating to the Neolithic period. However, as this earlier work was concerned primarily with the interpretation of the cropmarks, I was unable to offer any detailed analysis of the Neolithic timber circles. Nevertheless, these two dissertations provide a good summary of the pit-circles recorded as cropmarks and some of the ways in which circles of pits can be interpreted, though the accompanying gazetteers produced have remained unpublished until now.

OTHER RESEARCH

The most comprehensive review of timber circles in Britain was undertaken by Gibson (2005), but even this detailed analysis does not take the cropmark record fully into account and concentrates instead on excavated examples. Of the 16 timber circles in Scotland identified by Gibson, only three are cropmark sites. This is perhaps not surprising considering the limited amount of research into Scotland's cropmark timber circles that has taken place, but it does not give a complete view of timber circles in Scotland. Nevertheless, Gibson's research clearly demonstrates that timber circles were important monuments in their own right.

The other contributions of note are by Barclay (1993; 2005). His excavation of the cropmark pit-circle at Romancamp Gate in Fochabers, Moray (Barclay 1993) was designed to test Tolan's (1988, 35, 65) tentative interpretation of the site as a possible Neolithic timber circle. Instead it revealed the remains of four sequential roundhouses dating to the 1st millennium BC. While ultimately disproving Tolan's interpretation, this excavation did much to add to the understanding of cropmark pit-circles. It is valuable as a test of an early interpretation of these sites and provides information which can be used to refine future

interpretations of similar cropmark pit-circles. Finally, Barclay's review of henge monuments in Scotland (2005) included a consideration of the timber circles found within the henge monuments at North Mains, Cairnpapple and Balfarg (ibid, 86–9). Barclay came to the conclusion that the henge monuments at these three sites, and by analogy at other henge sites, were likely constructed around pre-existing timber circles. This important review clearly suggests that the timber circles had been constructed prior to the banks and ditches of the henges.

DEFINING THE PROBLEM

As the majority of Scotland's Neolithic timber circles have been recorded as cropmarks on aerial photographs, while most of what is currently understood about these sites rests upon the small number that have been excavated, the integration of these strands of evidence is very important. However, the real problems associated with the interpretation of these sites from cropmarks alone tends to prevent the cropmark evidence from being properly interpreted and studied, in turn preventing the cropmark record from being integrated with the evidence from excavated timber circles. Therefore the identification and interpretation of timber circles in the cropmark record is the key to beginning to gain a better understanding of these sites.

Before moving on it is worth sounding a cautionary note on some of the potential problems associated with interpreting the cropmarks of timber circles. Firstly, cropmarks

alone cannot prove that each pit did indeed hold a timber and it is always possible that, rather than representing timber circles, some of these sites may simply represent circles of pits. A case in point is provided by the excavation of two Neolithic enclosures at Bannockburn, Stirlingshire (Rideout 1997) where, although two enclosures defined by pits had been recorded on aerial photographs, excavation demonstrated that only one had been bounded by posts; the other was defined simply by pits. Whether or not a pit held a timber is something that can only be resolved through excavation and it is almost impossible to determine this from cropmarks alone. Nevertheless, as the majority of pit-circle sites which have been excavated in Britain have indeed proven to hold timbers, it seems fairly safe to assume that most pit-circles recorded as cropmarks do indeed represent circles of timbers.

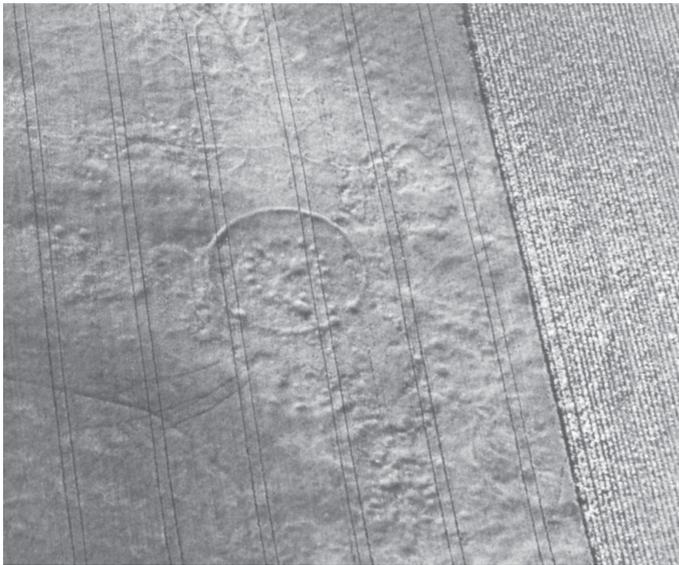
The fact that the proximity of cropmark sites does not necessarily indicate past associations is another problem. Associations cannot be proven from cropmark evidence alone as cropmarks



ILLUS 2 Ironshill, Angus. Example of a pit-circle lying within an unenclosed settlement (centre, left). This can be interpreted as the structural timbers of a roundhouse (© Crown Copyright: RCAHMS)

cannot provide a particularly refined chronology. However, knowledge of cropmark forms and their possible dates can assist the interpretation of cropmark complexes and their chronology, provided it is done with a certain amount of caution.

The interpretation of cropmark pit-circles recorded on aerial photography is less than straightforward, as circles of pits can be understood in any one of three ways: as ceremonial/ritual timber circles dating to the Neolithic period, as timber structures erected prior to the later construction of second millennium BC burial mounds (mortuary structures) and as the remains of the main structural elements of later



ILLUS 3 Kinchyle, Highland. Roundhouse revealed as a pit-circle lying within a narrow trench marking the line of an enclosing palisade or outer wall (© Crown Copyright: RCAHMS)

prehistoric roundhouses (Tolan 1988; Millican 2003). The cropmarks produced by each of these three types of site do not always appear substantially different from one another; in their simplest form they are recorded as a circle of pits. This can make interpretation very difficult,

as already shown by the excavation of the pit-circle at Romancamp Gate (Barclay 1993; Tolan 1988, 35, 65). Clearly, the interpretation of pit-circles from aerial photography alone remains difficult and if there are no distinguishing features visible then it may be impossible to suggest a definitive interpretation for a particular pit-circle. Nevertheless, there are some ways of differentiating between the three types of sites identified above.

Some pit-circles represent the post rings of later prehistoric roundhouses and these are most easily identified when they lie within settlements, either enclosed or unenclosed (illus 2) (see for example Pollock 1997; and for

a discussion of the forms of settlement and their regional variations see Hingley 1992).

Many roundhouses lie within enclosing palisades (illus 3) and sometimes the outer wall of the roundhouse can be seen as an enclosing ring ditch. In addition, the association of pit-circles with features such as souterrains strongly suggests that they are roundhouses (see for example Watkins 1978–80; Armit 1999) and two detached pits set just outside a pit-circle usually represents the porch structure of a roundhouse. Another characteristic of some roundhouse sites is the presence of radially elongated pits (Maxwell 1978, 113; Wilson 2000), representing the presence of pairs of posts, and at some sites it is possible to identify part of a second almost

distinct but overlapping ring of pits (illus 4). This is likely to represent the replacement of the house in roughly the same position over time. Another noticeable feature of these roundhouses is the very regular spacing of the pits. This is, perhaps, to be expected, as regularly spaced posts



ILLUS 4 Drumrosach, Highland. Example of a round house showing both two detached pits (top, left) representing a porch structure and elongated pits representing pairs of pits (© Crown Copyright: RCAHMS)

would be essential to ensure the stability of the structure. In addition, most are circular in form rather than elliptical or oval and are unlikely to have diameters greater than around 15m (Wilson 2000, 95). Therefore both the morphology and context of cropmark pit-circles can be used to interpret a pit-circle as a later prehistoric round-house.

Context is also an important factor in the interpretation of ceremonial/ritual timber circles. These sites can occur in one of three contexts: on their own, in apparent association with other ritual or ceremonial sites or as components of a larger monument, usually a henge (Millican 2003). Of these, interpretation is easiest when the pit-circle appears to be associated with other ritual sites of similar date or the pit-circle lies within another monument such as a henge (illus 5). It is much more difficult to interpret isolated pit-circles. In some cases individual pit-circles

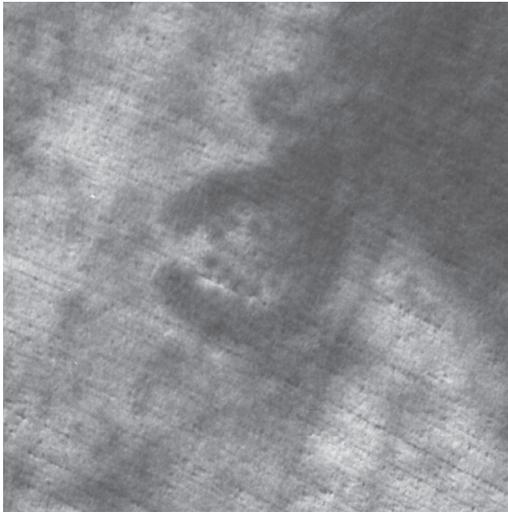
can be interpreted as timber circles if their morphology does not appear to indicate a round-house or if they were otherwise unusual in some manner. This though is not an entirely satisfactory manner of interpretation and it remains to be demonstrated if it is entirely correct.

Timber circles over which later barrows were raised can be interpreted as such if they are surrounded by a barrow ditch, which is usually continuous (illus 6), or they lie in apparent association with the cropmarks of barrows as part of a barrow cemetery. Very few of these sites though can be seen in the cropmark record of Scotland, probably because the remains of any overlying mound will continue to mask the presence of any underlying timber circles. Finally, there are some pit-circles which defy definite interpretation. Isolated pit-circles with no defining features remain almost impossible to interpret with any degree of confidence from

cropmark evidence alone. Although an educated guess can be made based upon the context and location of the site, any interpretation assigned to such sites should be treated with caution.

UPDATING THE DATASET

Previous research (Tolan 1988; Millican 2003) had identified a total of 26 cropmark Neolithic timber circles in Scotland. Following both a search of the database of the National



ILLUS 5 Easter Cadder, North Lanarkshire. Cropmark of a pit-circle lying within a henge monument (© Crown Copyright: RCAHMS)

Monuments Record of Scotland (NMRS) and a search through all the aerial photographs held by the NMRS, the number of Neolithic timber circles identified in Scotland (both cropmark and excavated) can now be increased to 81 (Table 1). The criteria outlined above were used to assess the cropmark sites, which have been interpreted with varying degrees of certainty. Many of these timber circles had been recorded simply as 'pit-circle' in the NMRS with no further

interpretation. A certain amount of variability in terms of the dimensions of these sites was obvious; the maximum diameter recorded was 75m while the smallest timber circle has a diameter of only around 3m. In terms of the maximum dimension of these sites, a hiatus was obvious in the record between the largest timber circle, at 75m in diameter, and the much larger later Neolithic palisaded enclosures which, although also roughly circular in form, usually have diameters of over 200m (Gibson 2002).

When all the Neolithic timber circles (both cropmark and excavated) are plotted on a map, we begin to gain a better understanding of the number and distribution of timber circles in Scotland (illus 7). Of the 81 sites interpreted as Neolithic timber circles, 65 are known as cropmarks; the remaining 16 were discovered through excavation. Eight sites are found within henge monuments (Balfarg, Cairnpapple, Coldrochie, Easter Cadder, Forteviot, Mains of Ballindarg, North Mains A and B and Shannas) and only seven are known to have been later replaced by stone uprights (Balfarg, Croft Moraig, Machrie Moor I and II, Moncrieffe, North Mains and Temple Wood). Just over half of the timber circles recorded are found in apparent association with sites of possibly similar date, either within henge monuments or lying close to or within a complex of sites including other monumental forms such as cursus monuments. The remainder have been recorded simply as isolated circles of pits.

INTERPRETING TIMBER CIRCLES

DATING

Timber circles in Britain appear to date to the later Neolithic and Early Bronze Age and according to Gibson (2005, 62) most sites can be dated to between *c* 2800 BC and 1000 BC, although some less reliable dates from timber circles could extend this range slightly in either direction. Only a small number of timber circles

TABLE 1
The Neolithic timber circles of Scotland

<i>Name</i>	<i>NMRS site</i>	<i>Grid reference</i>	<i>Council</i>	<i>Diam.</i>	<i>Notes</i>
Ardnagrask	NH54NW 36	NH 52565 49348	Highland	18m	Cropmark. Isolated pit-circle. May represent a roundhouse rather than timber circle.
Auchinteck	NN70SE 1	NN 7566 0170	Stirling	5.5m	Excavated. Destroyed in 1951. Six shallow pits lined with small flat stones.
Balfarg	NO20SE 5	NO 2816 0312	Fife	25m	Excavated. Circle of 16 posts. Suggested six further circles of closely spaced timbers which may have supported fencing.
Ballaggan	NH75SE	NH 79588 52874	Highland	6m	Cropmark. Isolated pit-circle.
Bennybeg	NN81NE 45	NN 86618 19062	Perth and Kinross	10m	Cropmark. Associated with cursus.
Berryley	NJ05NW 71	NJ 00201 56559	Moray	12m	Cropmark. Possible pit-circle. Associated with possible henge.
Berryley	NJ05NW 71	NJ 00230 56594	Moray	7m	Cropmark. Within possible henge. A few pits suggest that there may be a pit-circle within this henge.
Blackhill	NH74NW 25	NH 71534 48145	Highland	8m	Cropmark. May represent a round-house rather than timber circle.
Broich	NN82SE 69	NN 86642 20377	Perth and Kinross	10m	Cropmark. Associated with cursus monument.
Cairnpapple	NS97SE 16	NS 98719 71739	West Lothian	35m × 28m	Excavated. Setting of 24 timber uprights, within possibly later henge.
Calanish II	NB23SW 3	NB 2221 3261	Western Isles	20m	Excavated. Timber uprights found below Callanish II stone circle when cleared for peat in 1854.
Carsie Mains	NO14SE 88	NO 17759 41739	Perth and Kinross	12.5m	Cropmark and excavated. Circle of 15 postholes. Radiocarbon dated to 3350–2920 cal BC. Up to five postholes cut through filled tree pits.

TABLE 1 (*cont*)

The Neolithic timber circles of Scotland

<i>Name</i>	<i>NMRS site</i>	<i>Grid reference</i>	<i>Council</i>	<i>Diam.</i>	<i>Notes</i>
Castle Menzies	NN84NW 115	NN 83475 49408	Perth and Kinross	7m	Cropmark.
Coldrochie	NO02NE 42	NO 07786 29249	Perth and Kinross	8m	Cropmark. Within possible henge.
Court Hill	NO03SE 53	NO 07818 33054	Perth and Kinross	6m	Cropmark. Possible pit-circle. Associated with possible pit-setting.
Croft Moraig	NN74NE 12	NN 7975 4726	Perth and Kinross	7m	Excavated. Irregular horseshoe shaped timber setting open to SW.
Damside	NO54NE 18	NO 57785 49411	Angus	8.5m × 7m	Cropmark. May represent a round-house rather than timber circle.
Dargill	NN82SE 66	NN 85906 20041	Perth and Kinross	8m × 7m	Cropmark. Oval in shape rather than truly circular. Associated with stone circle, possible timber circle and possible pit-setting.
Dargill	NN82SE 66	NN 85988 20061	Perth and Kinross	40m	Cropmark. Associated with stone circle, possible timber circle and possible pit-setting.
Dunragit	NX15NE 69.01	NX 15253 57226	Dumfries and Galloway	9m	Cropmark. Associated with later Neolithic palisaded enclosure.
Dunragit	NX15NW 76	NX 14794 57449	Dumfries and Galloway	19m	Cropmark. Associated with later Neolithic palisaded enclosure.
Easter Cadder	NS67SW 27	NS 64251 73426	North Lanarkshire	4m × 3m	Cropmark. Within henge.
Eastfield	NT03NW 90	NT 03008 35256	South Lanarkshire	5m	Cropmark.
Eckford Mill	NT72NW 70	NT 71560 26914	Borders	5m	Cropmark. Within barrow.
Eweford	NT67NE 129	NT 6671 7738	East Lothian	20m	Excavated. Defined by 70 pits and postholes. Overall structure appears to have been constructed in short segments.

TABLE 1 (*cont*)
The Neolithic timber circles of Scotland

<i>Name</i>	<i>NMRS site</i>	<i>Grid reference</i>	<i>Council</i>	<i>Diam.</i>	<i>Notes</i>
Eweford 1	NT67NE 151	NT 66700 77579	East Lothian	c 9m	Cropmark. Associated with possible pit-circle.
Eweford 2	NT67NE 151	NT 66710 77527	East Lothian	5m	Cropmark. Possible pit-circle. May just be scattering of pits. Associated with pit-circle.
Forteviot	NO01NE 28	NO 05348 17066	Perth and Kinross	9m × 5m	Cropmark. Possible pit-circle within henge. Oval rather than truly circular. Associated with palisaded enclosure, henges etc.
Forteviot	NO01NE 28	NO 05280 16907	Perth and Kinross	11m	Cropmark. Pit-circle surrounding henge. Associated with palisaded enclosure, henges etc.
Forteviot	NO01NE 33	NO 05264 16935	Perth and Kinross	40m	Cropmark. Ring of pits surrounding henge. Associated with palisaded enclosure, henges etc.
Gallow Hill	NX19NE 56	NX 19502 99954	South Ayrshire	4.5m × 5.5	Cropmark. Associated with pit-setting.
Gateside	NO10NE 37	NO 18766 09441	Fife	10m	Cropmark. Associated with barrows.
Green of Invermay	NO01NW 29	NO 05018 16041	Perth and Kinross	8m	Cropmark.
Holm	NX98SE 86	NX 95968 80340	Dumfries and Galloway	?	Excavated. Arc of small pits found on excavation. Preceded by a ring-ditch and replaced by a ring-ditch.
Inchtuthil	NO13NW 39	NO 12414 39342	Perth and Kinross	5m	Cropmark. Associated with pit-circle.
Inchtuthil	NO13NW 35	NO 12349 39367	Perth and Kinross	14m	Cropmark. Associated with pit-circle.
Inverdunning House	NO01NW 60	NO 02514 16055	Perth and Kinross	8.5m	Cropmark. May represent a round-house rather than timber circle.
Inverdunning House	NO01NW 60	NO 02430 16034	Perth and Kinross	6m	Cropmark. May represent a round-house rather than timber circle.

TABLE 1 (*cont*)

The Neolithic timber circles of Scotland

<i>Name</i>	<i>NMRS site</i>	<i>Grid reference</i>	<i>Council</i>	<i>Diam.</i>	<i>Notes</i>
Kinalty	NO35SE 32	NO 35640 51223	Angus	28m	Cropmark. Oval in shape. Associated with cursus.
Kinalty	NO35SE 32	NO 35613 51163	Angus	10m × 8m	Cropmark. Oval rather than truly circular. Associated with cursus.
Kincladie	NO01NW 145	NO 02149 15374	Perth and Kinross	4.5m × 3.5m	Cropmark. Oval rather than truly circular. Associated with pit-circles.
Kincladie	NO01NW 145	NO 02150 15364	Perth and Kinross	4.5m × 3m	Cropmark. Oval rather than truly circular. Associated with pit-circles.
Kincladie	NO01NW 145	NO 02196 15444	Perth and Kinross	7m × 4m	Cropmark. Oval rather than truly circular. Associated with pit-circles.
Lauder Barns	NT54NW 12	NT 54515 46202	Borders	75m × 61m	Cropmark. Faceted appearance of circuit as though constructed in straight sections. Smaller pit-defined enclosure within.
Leadketty	NO01NW 21	NO 02118 16073	Perth and Kinross	c 8m	Cropmark. Associated with enclosure and palisaded enclosure.
Leuchars	NO42SW 8	NO 44360 21576	Fife	14m × 11m	Cropmark.
Little Lochans	NX05NE	NX 07414 57353	Dumfries and Galloway	10m	Cropmark. May represent a round-house rather than timber circle.
Lochbrow	NY08NE 34	NY 09549 89385	Dumfries and Galloway	27m × 17m	Cropmark. Oval rather than truly circular. Associated with cursus.
Lochbrow	NY08NE 36	NY 09428 89154	Dumfries and Galloway	48m	Cropmark. Associated with cursus.
Lon Mor	NM82NE 61	NM 8535 2835	Argyll and Bute	?	Excavated.
Lower Slackbuie	NH64SE 37	NH 6704 4245	Highland	c 8m	Cropmark. May represent a round-house rather than timber circle.

TABLE 1 (*cont*)
The Neolithic timber circles of Scotland

<i>Name</i>	<i>NMRS site</i>	<i>Grid reference</i>	<i>Council</i>	<i>Diam.</i>	<i>Notes</i>
Machrie Moor I	NR93SW 1.04	NR 9119 3239	North Ayrshire	19.5	Excavated. Associated with timber circle. Replaced by stone circle.
Machrie Moor II	NR93SW 1.05	NR 9121 3241	North Ayrshire	12.9m – 14.7m	Excavated. Associated with timber circle. Replaced by stone circle.
Mains of Ballindarg	NO35SE 34	NO 39886 50990	Angus	c 11m	Cropmark. Within henge.
Meikle Geddes	NH85SE 50	NH 87120 52008	Highland	7m	Cropmark. Isolated pit-circle.
Meldon Bridge	NT24SW 46	NT 2057 4029	Borders	2.5m	Excavated. Small circle of 11 irregularly spaced pits. Surrounded larger pit containing cremation. Possible entrance to NNE. Within later Neolithic palisaded enclosure.
Meldon Bridge	NT24SW 46	NT 2057 4029	Borders	9m	Excavated. Arc of pits representing small circle of truncated pits set around a central post. Within later Neolithic palisaded enclosure.
Middlefield	NJ06SW 52	NJ 03185 59978	Moray	7m	Cropmark.
Millhaugh	NO01SW	NO 01200 14092	Perth and Kinross	10m	Cropmark. Associated with possible pit-enclosure.
Millhills	NN81NE 59	NN 88648 19754	Perth and Kinross	5m	Cropmark. Associated with pit-settings.
Moncrieffe	NO11NW 11	NO 1328 1933	Perth and Kinross	6.5m	Excavated. Lies within henge.
Morendy Wood	NO42SW 52	NO 42215 24673	Fife	c 33m	Cropmark. Possible pit-circle. Only one side of what may be a large pit-circle recorded.
North Mains A	NN91NW 18	NN 9285 1625	Perth and Kinross	27m	Excavated. Uneven timber circle within later henge.

TABLE 1 (*cont*)

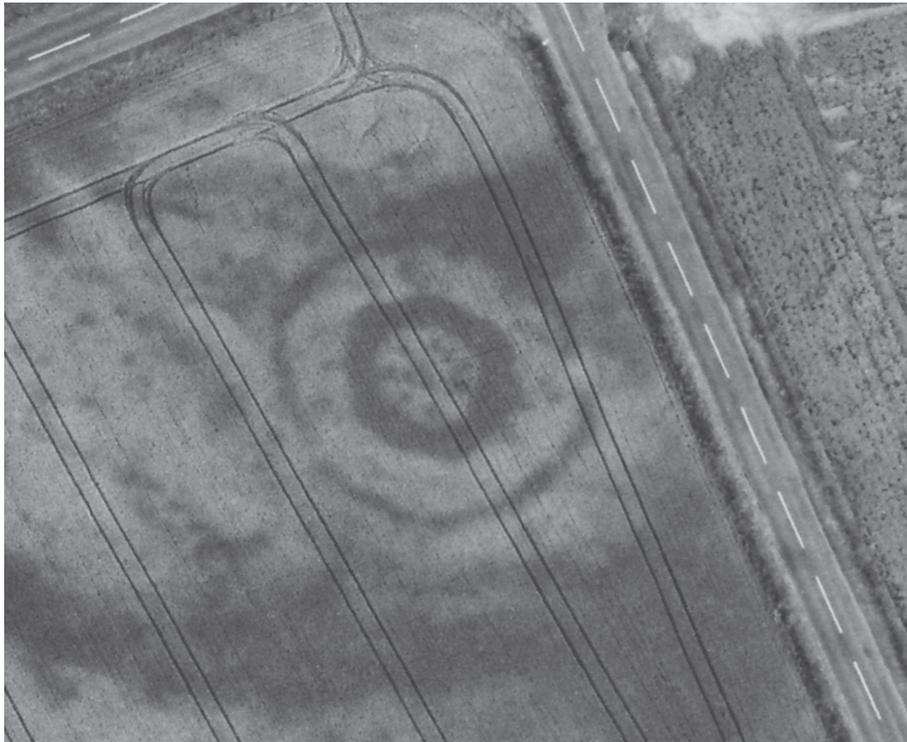
The Neolithic timber circles of Scotland

<i>Name</i>	<i>NMRS site</i>	<i>Grid reference</i>	<i>Council</i>	<i>Diam.</i>	<i>Notes</i>
North Mains B	NN91NW 18	NN 9285 1625	Perth and Kinross	22.5m × 18.5m	Excavated. Within henge. Not concentric with ditch and bank. May pre-date henge and timber circle A.
Northallerton Cottage	NO14SE 102	NO 16492 43903	Perth and Kinross	10m	Cropmark. Associated with possible pit-enclosure.
Pitmuies	NO54NE 67	NO 56835 49733	Angus	10m	Cropmark.
Raigmore	NH64NE 154	NH 68935 45289	Highland	7m	Cropmark. Associated with possible pit-circle.
Raigmore	NH64NE 154	NH 68917 45311	Highland	5m	Cropmark. Possible pit-circle. Associated with pit-circle.
Rossie Priory	NO23SE 31	NO 28168 30337	Perth and Kinross	11m × 8m	Cropmark. Possible pit-circle. Oval rather than truly circular.
Scoonie	NO30SE 111	NO 38416 01993	Fife	12m	Cropmark.
Selvie Wood	NO24NE 39	NO 28054 48350	Angus	12m	Cropmark.
Shannas	NJ94SE 34	NJ 9959 4378	Aberdeenshire	?	Cropmark. Within henge. Pits or postholes recorded by Aberdeenshire Archaeology Service in centre of henge.
Skateraw	NT77NW 21	NT 72905 75408	East Lothian	7m	Cropmark. Lies close to cluster of barrows and scatter of cropmarks which may relate to cists.
Soulseat Loch	NX15NW 97	NX 10631 58227	Dumfries and Galloway	38m	Cropmark. Possible barrow immediately adjacent to the SW.
Temple Wood	NR89W 6	NR 8263 9782	Argyll and Bute	9m	Excavated. Replaced by stone circle.
The Welton	NO14SE 98	NO 19780 43759	Perth and Kinross	7m	Cropmark.
The Welton	NO14SE 76	NO 18860 44066	Perth and Kinross	11.5m	Cropmark.

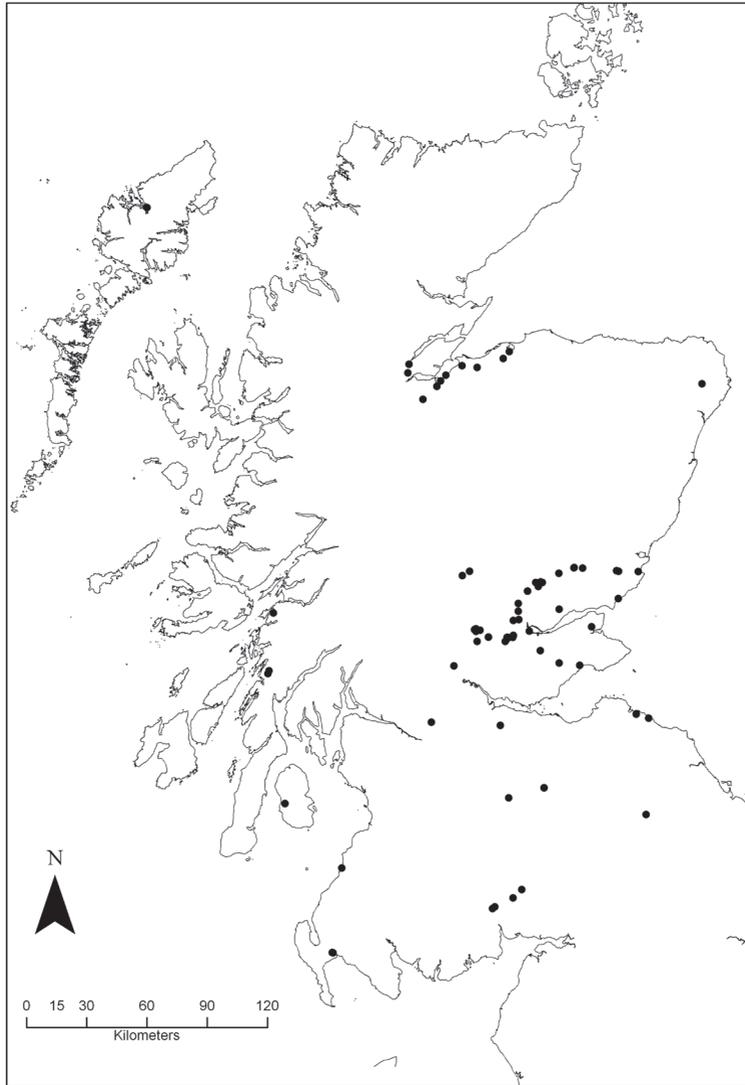
TABLE 1 (*cont*)

The Neolithic timber circles of Scotland

<i>Name</i>	<i>NMRS site</i>	<i>Grid reference</i>	<i>Council</i>	<i>Diam.</i>	<i>Notes</i>
Torr Wood	NH63NW 61	NH 60181 35961	Highland	6m	Cropmark. Isolated pit-circle.
Trailflat	NY08NW	NY 05098 84888	Dumfries and Galloway	6m	Cropmark. Associated with barrows and cursus.
Upper Largie	NR89NW 43	NR 8319 9933	Argyll and Bute	47m	Excavated. Associated with cursus.
Westerton	NN81SE 15	NN 87115 14027	Perth and Kinross	6m	Cropmark.



ILLUS 6 Eckford Mill, Borders. This pit-circle lies within the later ditches of a barrow and would have been covered by a barrow mound, which has now been ploughed away (© Crown Copyright: RCAHMS)



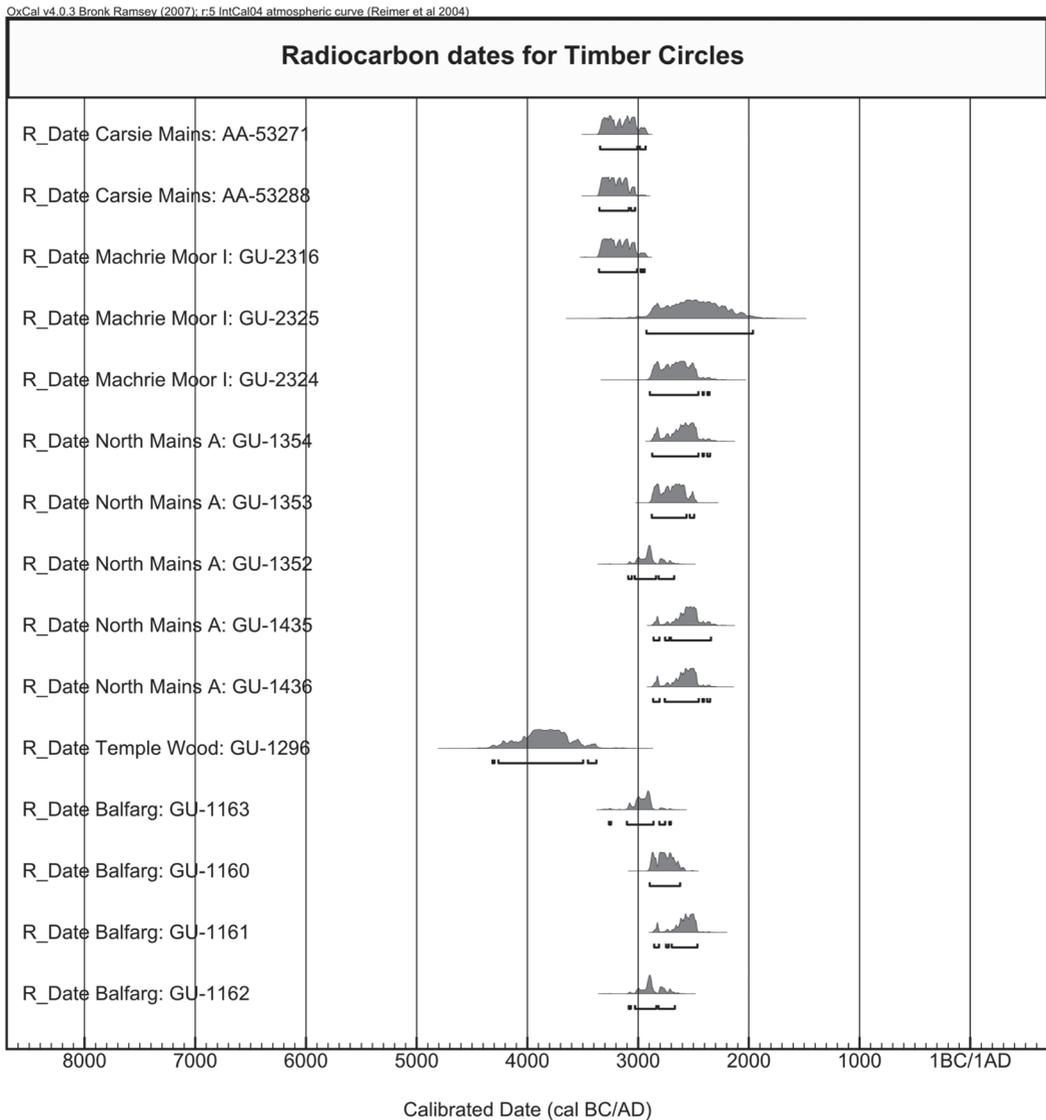
ILLUS 7 The distribution of all the timber circles (cropmark and excavated) recorded across Scotland

in Scotland have been securely dated (illus 8). However, all of these appear to fall within the earlier range of dates suggested by Gibson (the date provided for Temple Wood seems anomalous and may be from old wood or residual material, so could be several centuries too early (Scott 1991, 93) and should be treated with caution) and some

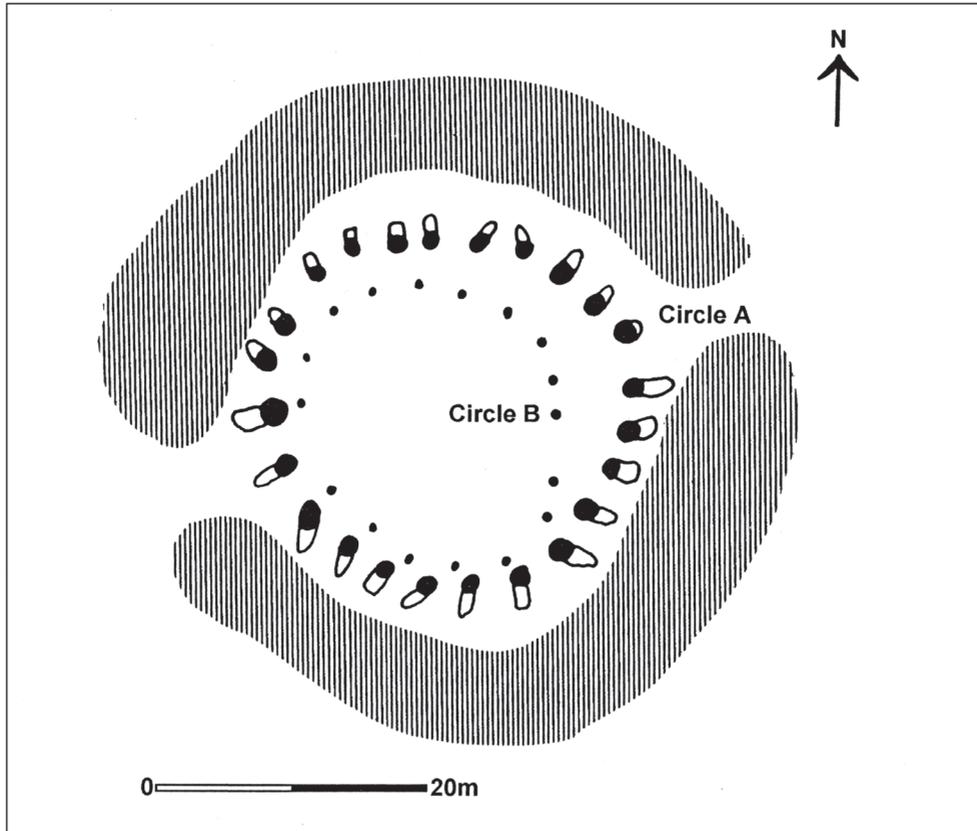
dates, such as Carsie Mains which produced a radiocarbon date of 3350–2920 cal BC (AA-53271) (Brophy & Barclay 2004, 8), indicate an even earlier origin than that suggested by Gibson. In general free-standing circles, such as Carsie Mains and Machrie Moor, have tended to produce earlier dates than those within henges.

Therefore, it is possible to suggest that Scotland's timber circles as a whole are predominately a later Neolithic phenomenon, that timber circles around which later henge monuments were constructed tend to be built later than the purely free-standing sites and an origin earlier in the Neolithic can be suggested for some of these

free-standing timber circles. It remains to be seen if these suggestions can be confirmed elsewhere. Nevertheless, a recent radiocarbon date obtained for the henge and timber circles at North Mains and reassessment of the sequence at this site (Barclay 2005, 86; Gibson 2005, 46) does add weight to the suggestion of an earlier origin for



ILLUS 8 Radiocarbon dates from timber circles in Scotland



ILLUS 9 North Mains timber circles and henge (from Gibson 2005, 44)

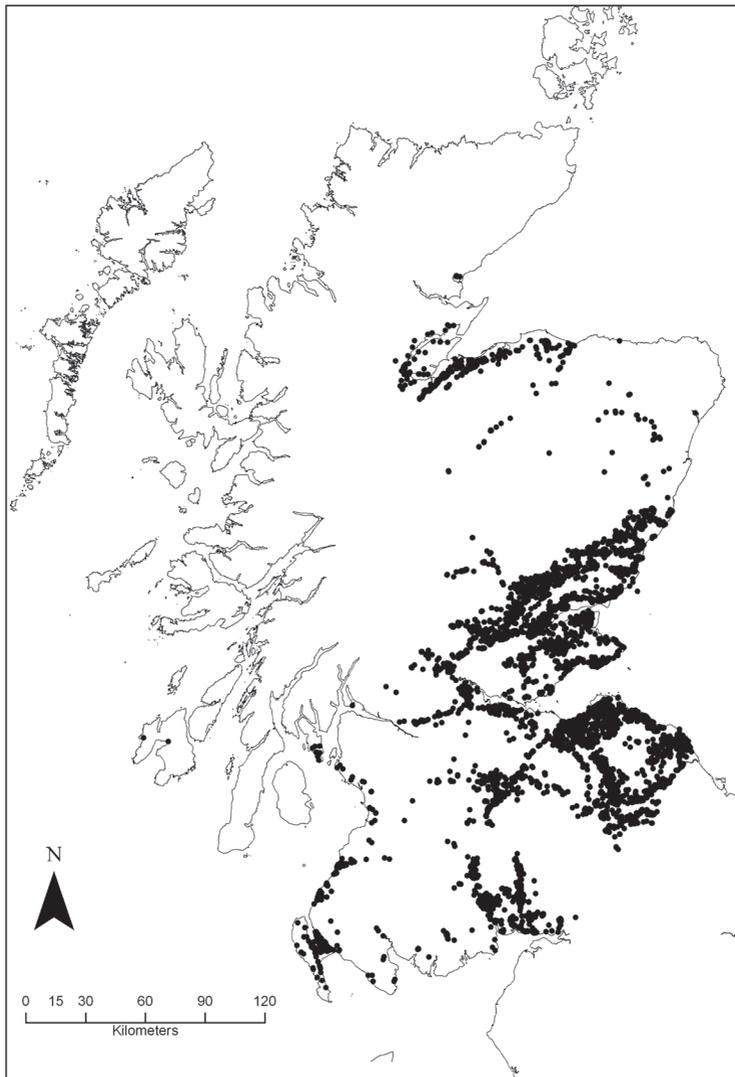
some timber circles. At North Mains, two timber circles were found within the henge monument (illus 9). The excavator (Barclay 1983) originally interpreted the larger timber ring (A) to be part of the henge monument and the smaller ring (B) as post dating the henge. However, a recently obtained radiocarbon date of 2200–1910 cal BC (GrA-24007) (Barclay 2005, 86, 88) indicates that the henge bank was constructed several centuries after timber ring A, meaning that this timber circle appears to have originally existed as a free-standing circle. Timber circle B, which is oval in shape and does not appear to relate to any of the later phases of the monumental complex (Gibson 2005, 46), may be even earlier than this.

However, the recent suggestion by Bradley and Sheridan (2005) that the timber circle at Croft Moraig may have been constructed within an earlier stone circle during the Middle or Late Bronze Age may change this picture somewhat. If we accept the new sequence, this indicates that some timber circles could be secondary developments to stone circles, rather than being the primary constructions at these sites, and may date as late as the Bronze Age. This could certainly be the case at other sites and it would be wrong to assume that all timber circles date to exactly the same period or follow the same sequence. Certainly the timber circle excavated within the recumbent stone circle at Strichen in Aberdeenshire has been assigned a Late

Bronze Age or Early Iron Age date (Phillips et al 2006) and some timber circles in England have produced similarly late dates (Gibson 2005, ch 3). However, the example at Strichen seems unlikely to be typical of timber circles as a whole because of its association with a recumbent stone circle, a monumental form unique to Aberdeenshire (Barclay 2004, 39;

2005, 85), and the very different expression of monumentality during prehistory in the north-east of Scotland in general.

Returning to the timber circle at Croft Moraig, the nature of this site remains unclear. In particular, there is some ambiguity as to whether the timber circle is actually a circle or a horseshoe setting (Piggott & Simpson 1971;



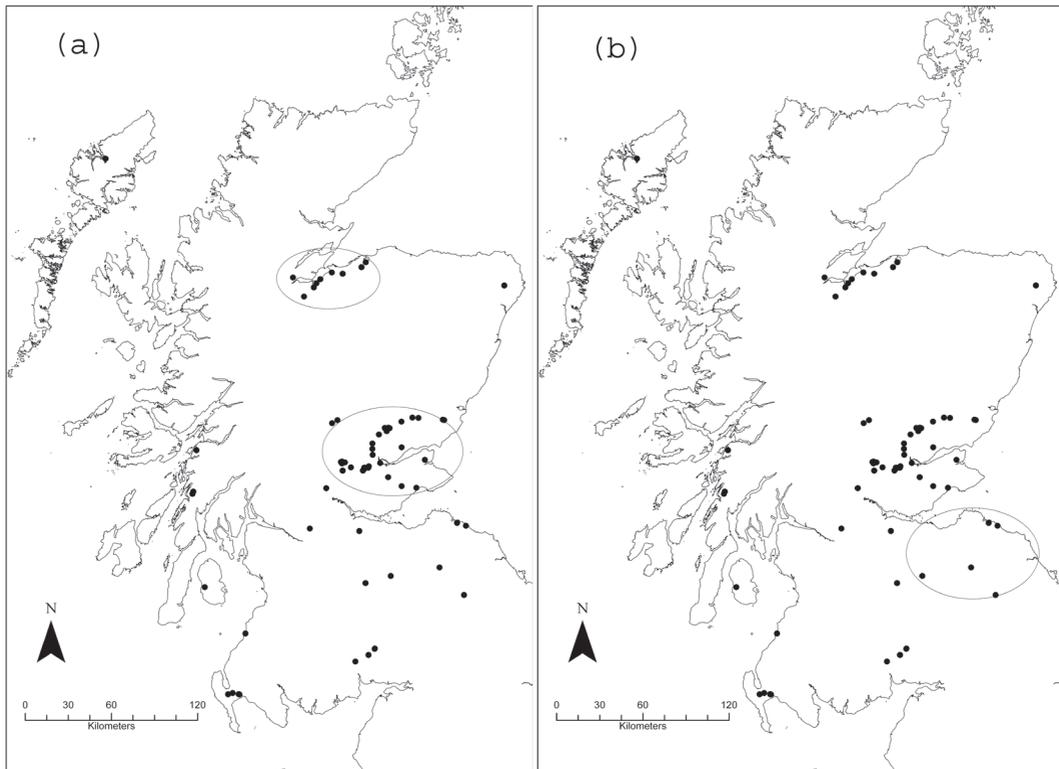
ILLUS 10 The distribution of cropmarks across Scotland

Barclay 2000), which would distinguish it from other timber circles. Finally, no other sites in Scotland have produced similarly late dates. Therefore, while the possibility of a later date must be borne in mind, current evidence seems to point to timber circles in Scotland being a predominantly Later Neolithic phenomenon.

DISTRIBUTION

The number of timber circles which have been recorded in Scotland clearly demonstrates that these sites have a place in any understanding of Neolithic Scotland. Their widespread distribution (illus 7) suggests that they had a role to play across most of the country. A glance at the distribution map shows that they

are not evenly distributed across the country; detailed examination of this distribution may provide some insight into regional traditions of construction. As most of these timber circles have been recorded as cropmarks, the distribution of these sites is largely governed by factors affecting the formation of cropmarks in general and the inherent bias of this form of evidence. Cropmarks tend to form in the relatively dry, cereal-producing areas, which lie to the east and south in Scotland (Hanson & Macinnes 1991) (illus 10). As a result, timber circles are recorded predominately in these areas, while the non-cropmark-producing lands to the west and north are likely to be under-represented in the record. The small scattering of excavated timber circles in the less intensively flown west



ILLUS 11 Patterns in distribution. (a) Concentrations in Perth and Kinross and Invernesshire and (b) absence in East Lothian and the Borders

of the country, such as at Temple Wood and Upper Largie in Kilmartin and Machrie Moor respectively, hints at a wider distribution of timber circles that cannot be seen through the available cropmark evidence. Nevertheless, some interesting patterns can be drawn from the available distribution map.

The greatest concentration of timber circles has been recorded in Perth and Kinross, with a smaller concentration around the Inverness area (illus 11a). This is perhaps not wholly surprising, considering the concentration of cropmarks recorded in these areas. However, this Perthshire concentration appears relatively restricted and does not extend as far north as might otherwise be suggested by the general distribution of cropmarks in this area. This absence continues into Aberdeenshire and, although this may be because fewer cropmarks have been recorded in Aberdeenshire in general, it may also be another reflection of Aberdeenshire's very distinct Neolithic, seen in the almost total exclusion of henge monuments from this area (Barclay 2004, 39; 2005, 85).

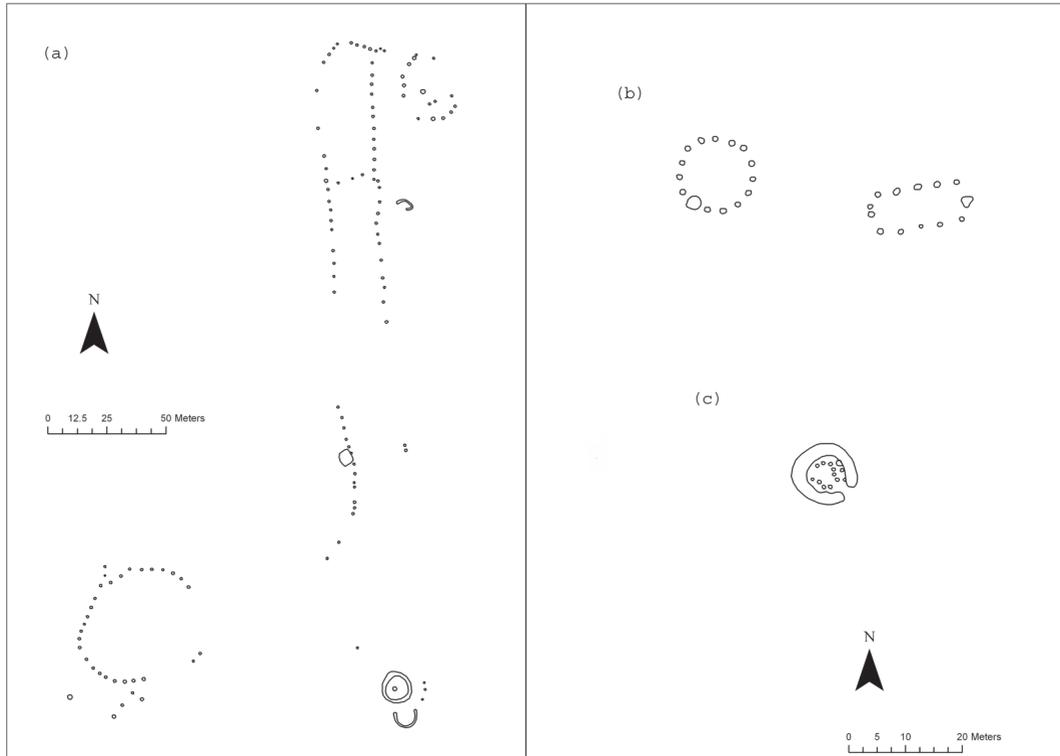
In contrast, the number of sites recorded in East Lothian and the Borders (illus 11b) seems very slight in comparison with that recorded in Perth and Kinross and considering the large number of cropmarks recorded in these areas. Indeed, timber circles appear to be largely absent from East Lothian and the Borders. This is particularly surprising if one considers that East Lothian is probably the most intensively recorded region of Scotland due to its extensive arable cultivation and its proximity to RCAHMS Edinburgh base (Hanson 2005, 76; Cowley & Dickson 2007, 47). As a result, one would expect that any timber circles in this area would have been recorded by now. This suggests that there is a very real absence of Neolithic timber circles in the south-east of the country.

There are clearly additional factors affecting the distribution of timber circles. Quite why timber circles are absent in some areas whilst concentrated in others is difficult to determine, but it may suggest that their construction was

more important in some areas than in others. It is possible that the functions performed by timber circles in the Perthshire area were performed by another form of monument in areas where timber circles appear to be absent. Whatever the reason, the distribution map appears to reflect, to some extent, distinct regional traditions of construction. Indeed, the distribution of timber circles corresponds with the known eastern tradition of other types of timber monuments built during the Neolithic period, such as timber halls and pit-defined cursus monuments (Barclay & Maxwell 1998; Barclay et al. 2002; Brophy 2006). Therefore, timber circles may be one part of a distinct tradition of building timber monuments in the east of Scotland, a tradition which was not followed to the same extent elsewhere.

CONTEXT

Many of the timber circles recorded in Scotland appear to have existed in association with other monuments, often comprising other timber forms including pit-defined cursus monuments, timber halls or later Neolithic palisaded enclosures. This adds weight to the observation that timber circles may be part of a timber building tradition in eastern lowland Scotland. However, timber circles are not associated only with timber monuments; other associations include non-timber monumental forms such as henges or earthwork cursus monuments. Just over half of the timber circles recorded in Scotland lie in apparent association with other broadly contemporary monuments (though definite associations or contemporaneity can be hard to prove from cropmarks alone). Examples include the pit-circles lying close to the cursus at Lochbrow in Dumfries and Galloway, the timber circle excavated alongside a timber structure at Carsie Mains or the pit-circle recorded within the small henge at Easter Cadder, North Lanarkshire (illus 12). Often the associated monuments take the form of other pit-circles or timber circles and in a small



ILLUS 12 Examples of timber circles lying in apparent association with other broadly contemporary monuments. (a) Two pit-circles recorded next to the cursus at Lochbrow, Dumfries (b) Timber circle adjacent to Neolithic timber hall at Carsie Mains, Perth and Kinross (c) Pit-circle within the henge at Easter Cadder, North Lanarkshire

number of cases, such as at Broich in Perth and Kinross and Lochbrow, timber circles appear to be closely associated with cursus monuments. In the case of the Broich cursus, the pit-circle sits in an entrance gap on the western side of the cursus. From this evidence, it appears that many timber circles seem to have functioned as part of a larger complex of sites. Whether these complexes grew around existing timber circles or the timber circles were secondary developments added to existing sites is difficult to determine.

However, Gibson (2005, 57) does suggest that, where timber circles exist as part of a larger complex or ritual landscape, the majority appear to be the primary component and certainly,

where timber circles have been excavated within henge monuments, they have often been proven to pre-date the later henge (Gibson 2005, 46). A similar sequence of events can be seen at sites where timber circles were later replaced by stone. It is possible then that many of the timber circles recorded on aerial photographs similarly formed the primary component of larger complexes, though it would be unwise to assume the same sequence at each site. However, as mentioned above, proximity of cropmark sites does not necessarily mean that the sites in question were actually associated with each other. Nevertheless, all timber circles identified as part of a monumental complex are associated with sites which are broadly contemporary and

usually dated very broadly to the Neolithic period. It therefore seems reasonable to assume that there was some relationship between the associated sites or to the place in which they were constructed. Certainly the fact that some locations saw the repeated construction of monumental forms indicates that these were significant places.

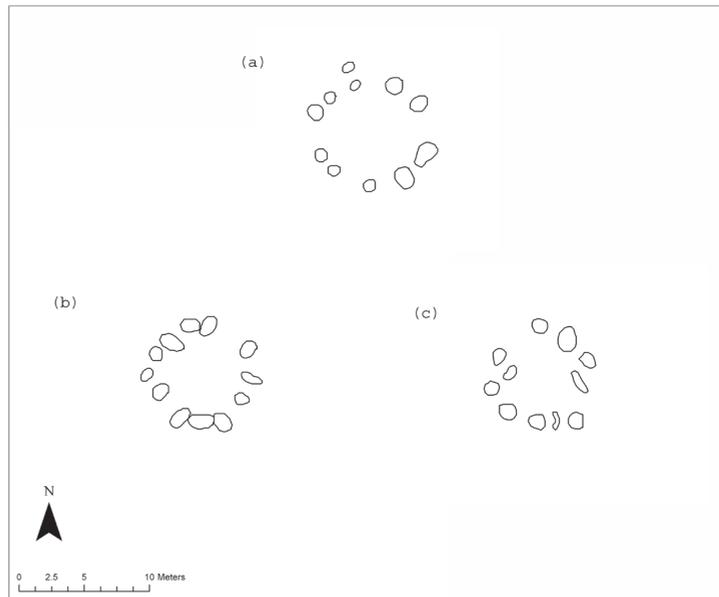
It is impossible to determine from cropmark evidence alone whether earlier sites were still visible when later sites were constructed. However, timber structures would only stand unrepaired for a finite length of time and there is ample evidence that many timber monumental forms constructed during the earlier part of the Neolithic were burnt down (Noble 2006, 45; Thomas 2007, 264). Therefore, any earlier structures may have decayed or been destroyed by the time any later structures were constructed. If this was the case, it would have been the place and the memory of earlier activity that was significant rather than the physical presence of earlier structures. What would have been important were the events identified with specific places (Thomas 2007, 261), the memories of these helping to sustain the importance of that place.

The rest of the timber circles in Scotland, just under half of those recorded, appear to have existed on their own with no apparent associations. Many of these sites have proven difficult to interpret. Nevertheless, on current evidence it is possible to suggest that they probably date to the Neolithic period and demonstrate that timber circles could exist and function as free-standing structures and as monuments in

their own right. Examples include Westerton, Perth and Kinross, and Torr Wood and Meikle Geddes, Highland Region (illus 13). It may be that these sites represent timber circles which, for one reason or another, did not 'develop' into larger monumental complexes as at other sites.

PURPOSE AND RECONSTRUCTION

The purpose of these timber circles is far from clear. Some form of ritual or ceremonial function, often relatively undefined, is usually suggested (Tolan 1988; Millican 2003; Gibson 2005). Both the context of many timber circles (in apparent



ILLUS 13 Examples of isolated timber circles. (a) Meikle Geddes (b) Torr Wood, Highland Region (c) Westerton, Perth and Kinross

association with other ritual monuments, within henges or replaced by later stone circles) and evidence from excavation (Gibson 2005) appear to add weight to this hypothesis. Timber circles are part of a larger tradition of circular monuments constructed in the Later Neolithic and Early Bronze Age and Bradley (1998, 109)



ILLUS 14 Reconstruction of a timber circle at Archaeolink, Aberdeenshire with painted timbers
(Photo: K. Brophy)

has suggested that the use of a circle in the construction of monuments may reflect a shared cosmology; a general perception of space which extends outwards from the person and upwards into the sky. This may suggest a broad connection of shared beliefs behind the varied circular monuments of the later Neolithic and Early Bronze Age. Nevertheless, the diversity evident in size, chronology, specific morphology and, from the limited excavation evidence, method of construction, indicates that it is unlikely that all performed the same function and it would be dangerous to seek a single unified function for such a diverse range of sites.

That these sites have been accepted as merely adjuncts to henges or earlier equivalents of stone circles has meant that assessment of their function has not been considered necessary. Yet

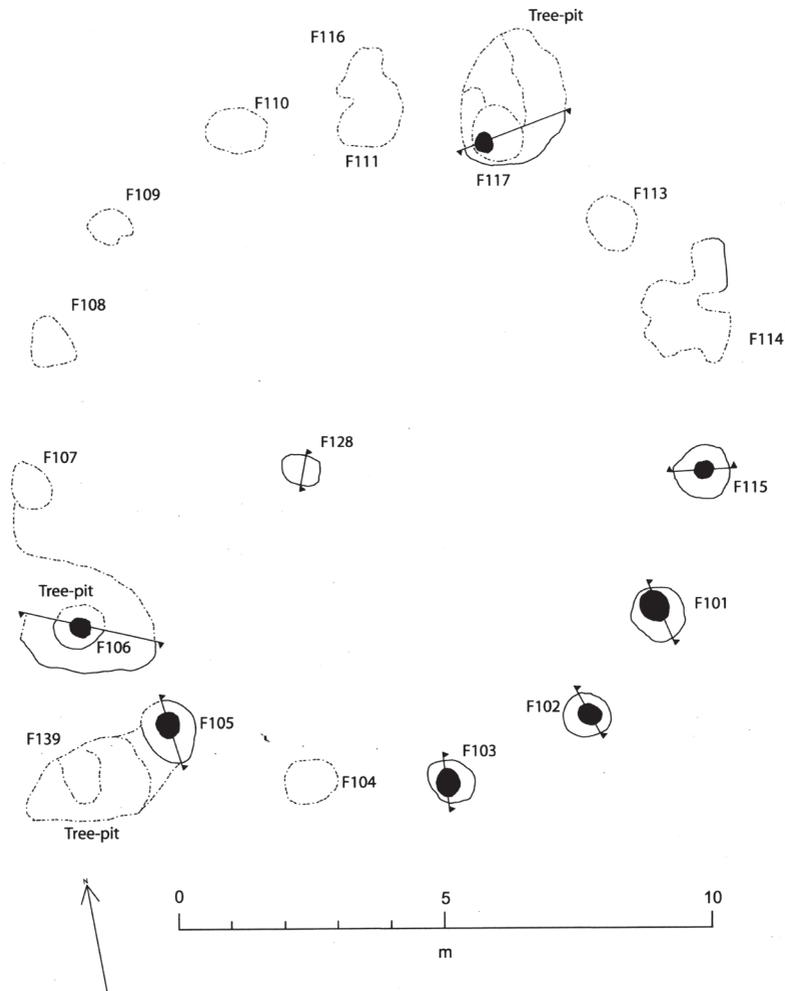
the possible functions of stone circles are also little understood, while the debate surrounding henge monuments continues (Barclay 2005). However, if we accept that timber circles should be viewed in their own right rather than as components of other monuments, then other understandings must be sought. The lack of material culture at most excavated timber circles and the structured nature at the few sites at which quantities of material culture is found suggests that these sites were not used for any kind of domestic purpose as we understand it. Neither is there any evidence of any association with mortuary activities. However, few other clues are provided as to what these sites were actually used for.

Nevertheless, all timber circles define an area of space, marking a distinction between the

area within from that without and suggesting a concern with demarcating an area and perhaps controlling access to the interior of the monument. The manner in which the internal area was enclosed, whether simply by spaced posts or by a continuous barrier or fence, will have affected both the functioning and experience of the internal space. Cropmarks alone can give us no clues to this, so we are reliant upon evidence from

excavations to give us some insight, though even here the fact that timber circles were constructed from timber means that the available evidence is very slight.

At their simplest, timber circles consist of substantial wooden uprights, arranged in a circular form with no obvious fencing or barriers between the timbers. The timber circle at Carsie Mains for example (Brophy & Barclay



ILLUS 15 Excavation plan of Carsie Mains timber circle showing postholes cut through infilled tree pits. (from Brophy & Barclay 2004, 9)

2004) appears to have been constructed in this way. No evidence remains for what these timbers may have looked like above ground, but in his reconstruction of the timber circle excavated at Sarn-y-bryn-caled, Powys Gibson (1992) suggested that lintels may have formed an integral part of the final form of this timber circle as the circularity of the monument, so obvious from the ground plan, was not obvious above ground until lintels were added. However, the timbers may not have been the simple, straight, unadorned uprights often depicted in reconstruction drawings and it is possible that the timbers were carved or painted in some way (illus 14). Indeed, timbers may have been left unworked, perhaps with branches and foliage remaining and certainly the fact that up to five postholes of the timber circle at Carsie Mains (Brophy & Barclay 2004, 20) appear to have been dug through infilled tree pits (illus 15) suggests a close connection between woodland and the construction of the timber circle. The excavation of the waterlogged timber circle at Holme-next-the-sea in Norfolk (Brennand & Taylor 2003), with its inverted oak tree at the centre of the monument, serves to demonstrate just how much is missing from the picture when dealing only with the remaining postholes and indicates that we must consider a range of possible configurations when attempting to reconstruct any of these sites.

However we choose to reconstruct these posts, where timber circles consisted of spaced posts the boundary of the circle would have been permeable with no obvious obstruction to either physical or visual access. This does not mean that the boundaries presented no barrier, as symbolic barriers can be just as strong as physical ones (Barclay 2005, 92). Nevertheless, timber circles formed simply by spaced timbers would permit those outside to see what was taking place inside the circle, whether or not they were able to physically access the interior. Similarly, those inside the circle would have been able to see out, suggesting that the context and setting of these circles may have been of importance to whatever

took place within. The relatively small interior space of many timber circles indicates that an individual circle could only contain a small number of people and so it seems likely that only certain members of society were allowed to enter the interior of the circle. Others would have been excluded, though still able to view whatever was taking place inside.

On the other hand, the existence of screens or barriers between the uprights has been suggested by the presence of carbonized planking at North Mains (Barclay 1983) and by the small, closely spaced timbers of the subsidiary timber circles at Balfarg (Mercer 1981, 159). Wattle and daub is another possible screening material. This suggests that these timber circles consisted of a continuous barrier which would have had the effect of completely enclosing the interior and physically excluding those within from those without. A similar reconstruction could be envisaged at other timber circles, suggesting a real desire to control access to these timber circles and to exclude certain portions of society from what took place within (Gibson 2005, 117). Such a monument would have been able to physically direct access to one or more entrances and suggests a much greater concern with control, exclusion and secrecy. It indicates that certain portions of society were entirely excluded from the interior of the circle and that whatever took place in these sites was entirely contained within the space defined by the boundary. The later construction of a henge around some timber circles may have further emphasized this process of enclosure and exclusion.

When dealing with cropmark timber circles, it is impossible to know exactly how they were constructed (whether as a continuous barrier, individual posts or some combination of the two). Even excavated sites provide little evidence for their original forms. Therefore, the way in which timber circles should be reconstructed remains very unclear. Considering the variations in chronology, form and dimension, it is highly unlikely that all timber circles were constructed in the same way.

CONCLUSIONS

The number of timber circles now recorded in Scotland clearly testifies to the fact that they played an important part in the monumental repertoire of Scotland's Neolithic. Only a relatively small number of the 81 examples interpreted as dating to the Later Neolithic period have been excavated, giving us limited insights into their use, construction and function. The small number of timber circles in Scotland which have been reliably dated suggests that they are predominantly a later Neolithic phenomenon, and there are hints of an even earlier origin. A review of the cropmark and excavated evidence indicates that they formed part of the tradition of timber monument building in the east of the Scotland – though the few known from the west hints at a wider distribution than currently known – and that a large proportion of timber circles functioned as part of larger monumental complexes. It is difficult to determine quite what this function was. Considering the variations in location, chronology, dimension and morphology, it is very unlikely that all timber circles performed the same function. However we choose to reconstruct these sites and whatever function they performed, all were monumental in form and would have required a substantial investment of time and resources to build, testifying to the importance of these timber circles to the people who constructed them.

Finally, the use of the generic term 'pit-circle', with all its associated meanings, when referring to the cropmark record of timber circles continues to add to the difficulty of studying these sites as a whole. It has meant that the cropmarks of these sites have often remained unrecognized within the record and also tends to perpetuate the perception that the cropmark record is separate from the excavated record, something that has clearly been shown not to be the case. Therefore, perhaps it is time to move away from using the term when referring to the cropmark record of timber circles and move toward considering these sites as indicative of timber circles. By moving

beyond pit-circles, it becomes possible to study the timber circles of Scotland as a whole rather than dividing them rather artificially into those known through excavation and those recorded by aerial photography. By so doing, we are in a much better position to investigate these sites as a whole and to integrate timber circles into wider understandings of Scotland's Neolithic.

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