Proc Soc Antiq Scot 139 (2009), 105–122

Forest grazing and seaweed foddering: early Neolithic occupation at Maybole, South Ayrshire

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with contributions from Ann Clarke, Paul Duffy, Nyree Finlay, Jennifer Miller and Alison Sheridan

ABSTRACT

A group of Early Neolithic features, probably related to the cooking of food, was excavated by Glasgow University Archaeological Research Division (GUARD) near Maybole, South Ayrshire. Particularly significant was the wide range of finds that had been deposited within some of the features, including carbonised ovicaprid (probably goat), faecal pellets, a fragment of a Group VI Great Langdale stone axehead, burnt human bone, a fragmented cylindrical stone object, an assemblage of struck lithics (including pitchstone), and an assemblage of Carinated Bowl pottery. Several features also contained considerable amounts and varieties of carbonised botanical remains, providing a broader insight into the landscape where these features were found. Analysis of these remains suggests that there had been a short phase of occupation, radiocarbon dated to 3780–3650 cal BC.

INTRODUCTION

In June and July 2007, Glasgow University Archaeological Research Division (GUARD) undertook an archaeological watching brief during the stripping of topsoil and trenching for the insertion of a new gas pipeline to the south-east of Maybole, South Ayrshire (illus 1). During the course of the watching brief, a group of features, some of which contained Early Neolithic artefacts, was excavated (Becket 2007). This paper presents the results of the excavation and analysis, which was funded by Murphy Group Ltd. The full project archive will be deposited with the National Monuments Record of Scotland, and the finds allocated to a museum through the Treasure Trove process.

THE FEATURES

The features were located at NS: 3025 0902, to the south-east of Maybole, within a field used as pasture (illus 1). Shallow topsoil was stripped from the area using a mechanical excavator and hand cleaning of the surface revealed a discrete group of 12 features (illus 2 and 3). They had all been cut into moderately soft sand, showed no signs of the weathering of the cut, and, with one exception (in 003), contained single fills. All pit fills were homogenous in nature, comprising sand mixed with humanly derived organic material and artefacts distributed evenly throughout. Shallow topsoil coverage of the archaeology indicated the likely truncation of the site through ploughing. The features were distributed in a roughly linear arrangement and potentially continued outside

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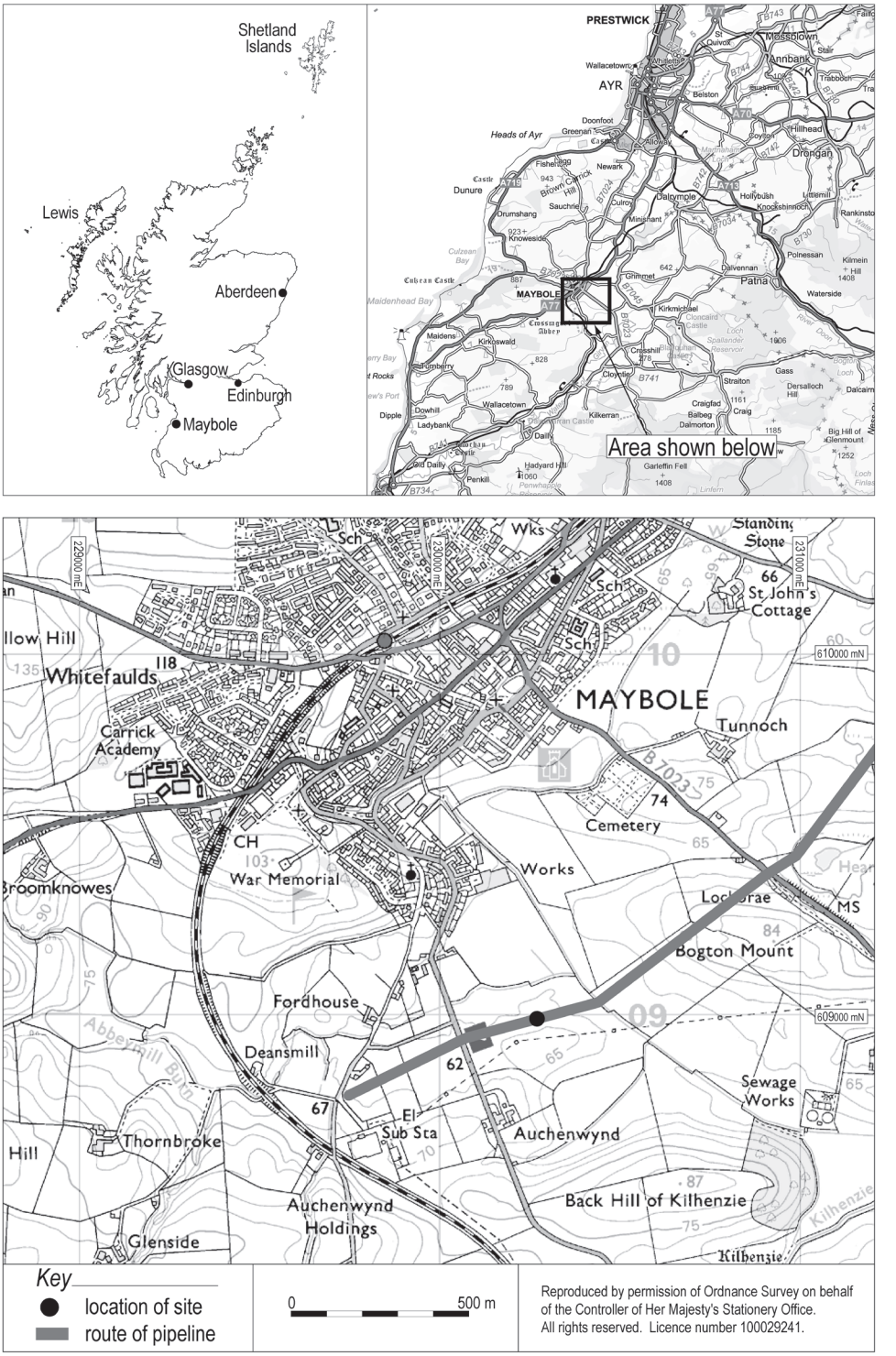


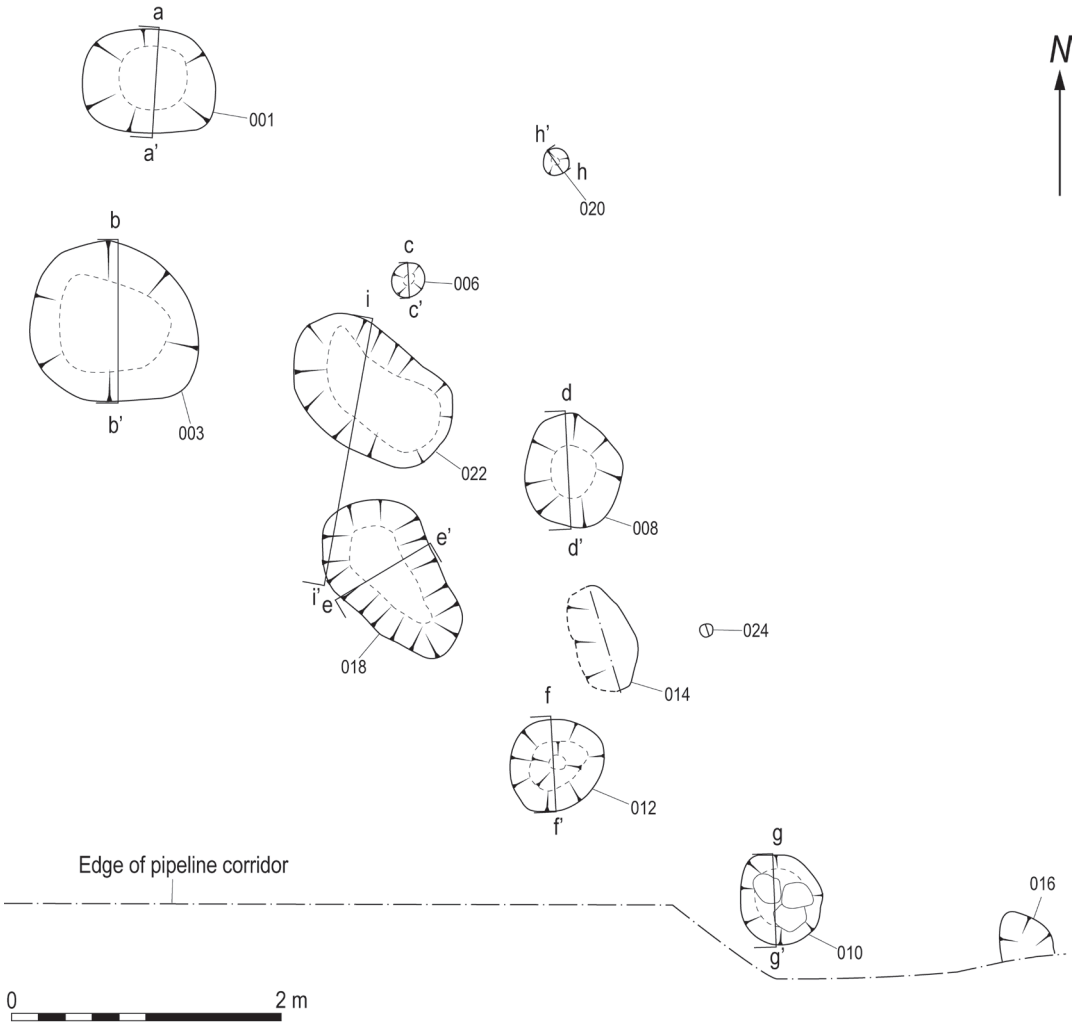
Illus 1 Location plan

the area of the pipeline corridor to the south-east and north-west.

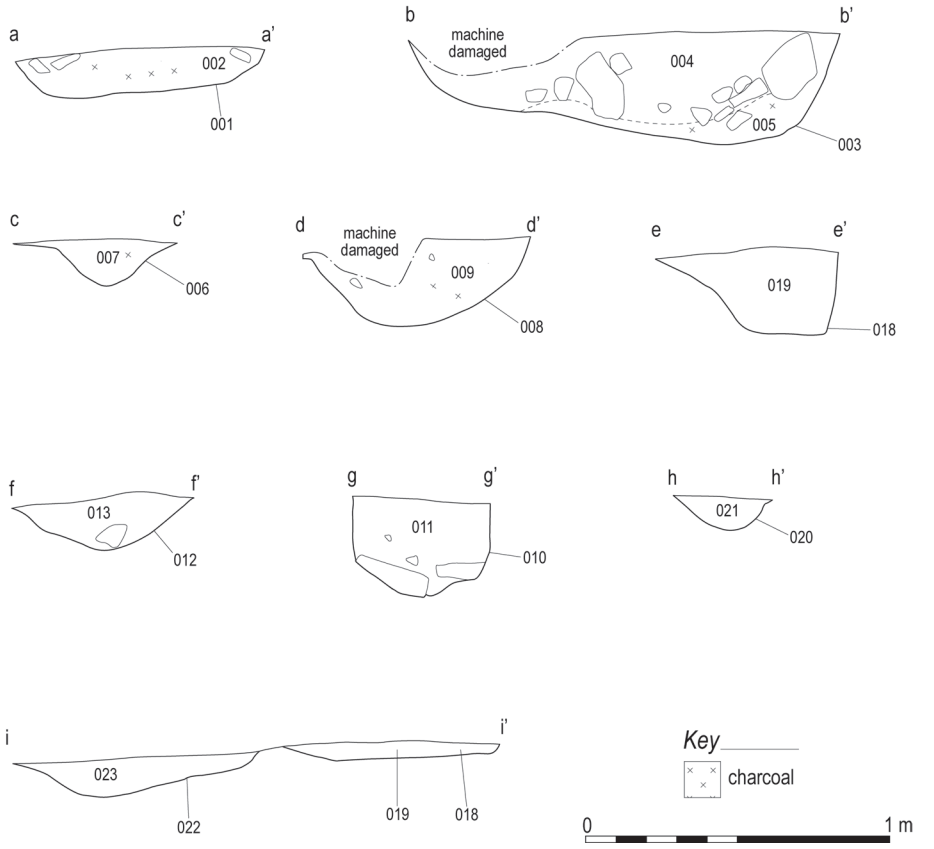
FEATURE DESCRIPTIONS

Pit 010

Pit 010 was circular in plan, 0.7m in diameter and 0.3m deep. Its base had been lined with two flat stones with one square stone laid on top. The pit was filled with dark brown sand (011) that contained carbonised plant remains (see Miller below), including: oak (*Quercus*); alder (*Alnus*) and hazel (*Corylus*) charcoal; grains of naked barley (*Hordeum vulgare* var *nudum*) and emmer wheat (*Triticum dicoccum*); crab apple (*Malus* cf *sylvestris*) and apple seeds (*Malus* sp.); fragments of apple core; and hazel nutshell (*Corylus avellana*). A sample of burnt hazel nutshell was radiocarbon dated to 3780–3650 cal BC (SUERC-18866). This deposit (011) also contained one intact burnt faecal pellet and several fragmentary pellets, probably from



ILLUS 2 Post-excavation plan of site



ILLUS 3 Section drawings

a goat, together with fragments of burnt bone (9.8g) identifiable as human, including diagnostic elements (4.8g) (see Duffy below). There was also a single piece of fire-cracked stone (SF 27). Lithic and ceramic artefacts were present throughout the fill. The former, of flint, Arran pitchstone and siltstone, comprised 30 struck pieces (blades, flakes and chunks: see Finlay below). The latter comprised sherds – some of them heavily burnt – from around nine pots, of both carinated and uncarinated forms (Pots 4, 5, 10, 11, 14 and 22–5: illus 8 and 9). Two pieces of probable potter's clay and a further piece of non-pot clay (all from among SF 38: illus 10) were also present (see Sheridan below).

Pit 018

A large sub-oval pit (018), 1.35m long, 0.8m wide and 0.36m surviving depth, contained dark orange-brown sand (019). The fill included a varied assemblage of carbonised remains that included further faecal pellet fragments, grains of naked barley and emmer/spelt wheat (*Triticum dicoccum/spelta*), apple seeds, alder, hazel, oak, willow (*Salix*) charcoal, a carbonised birch (*Betula*) twig, hazel nutshell and fragments of brown seaweed (*Fucus* sp.). Carbonised seeds of greater plantain (*Plantago major*), ribwort plantain (*Plantago* cf *lanceolata*) and sheep's sorrel (*Rumex acetosella*) were also found, along with fragments of burnt bone (0.6g – possibly human). A sample of faecal pellet fragments

was radiocarbon dated to 3780–3650 cal bc (SUERC-18865). Lithic and ceramic artefacts were also present, with the coarse stone artefacts including a pecked cobble (SF 29.1: illus 6), a flake from a Great Langdale stone axehead (SF 16) and fragments of a cylindrical stone object (SF 31: illus 7) (see Clarke below). A total of 14 lithics were also found in 019, including: three pitchstone flakes (SF 4, 15 and 17: illus 4); a good quality quartz flake (SF 23: illus 4); a flint scraper (SF 18: illus 5) and perfunctory flint scraper (SF 30.4); a flint heat spall (SF 46.1); and flint chunks and flakes. The pottery comprised small parts of five vessels (Pots 1, 6, 13, 16 and 20: illus 8). All of these had probably been carinated bowls, including a very large bowl (Pot 1). One pair of conjoining sherds (from Pot 13) had been scorched.

Pit 022

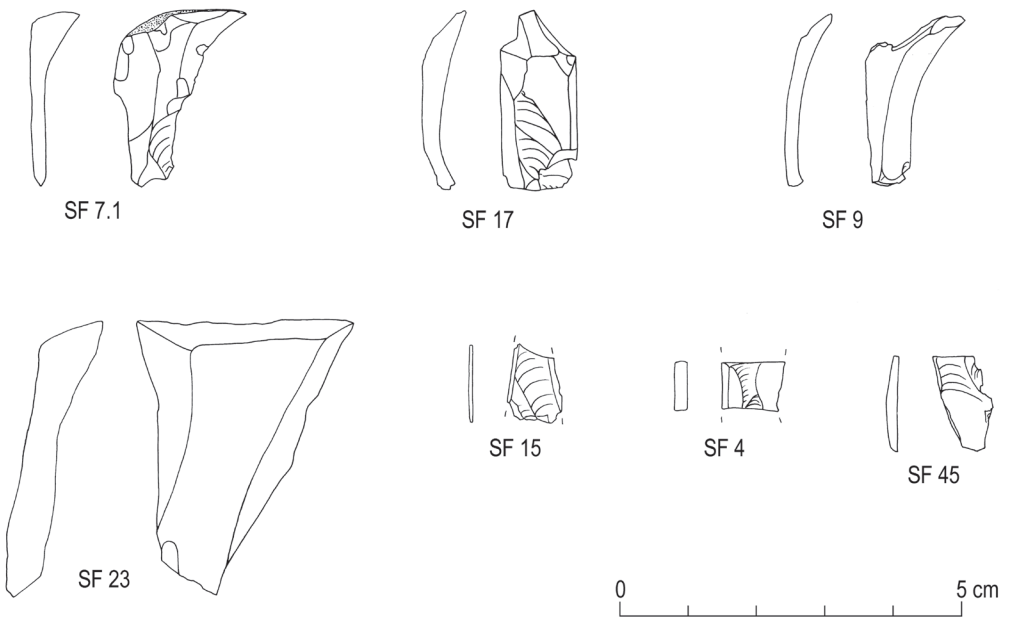
Located beside pit 018 was another pit (022), which had a similar appearance in plan, measuring 1.32m × 0.92m, although it was shallower at only 0.12m deep. The pit contained dark orange-brown sand (023), very similar in appearance to 019. Pit 022 contained a further faecal pellet fragment (0.01g), alder and oak charcoal, two carbonised grains of six-row barley (*Hordeum vulgare sl*) and carbonised hazel nutshell. The pottery from this pit included sherds from Pot 1 (illus 8), along with sherds from two other carinated bowls (Pots 2: illus 8, and 21); there were no obvious signs of burning on these sherds.

Pits 008 and 012

Two pits, (008) and (012), were of similar size and shape to 010. These pits contained dark brown sand fills, (009) and (013), and both contained oak charcoal and carbonised hazel nutshell. Carbonised cereal grains were deposited in 009, two of barley, four of wheat. Cereal grains were also deposited in 013 but could not be identified. A small amount of hazel charcoal also came from 013 as well as 02.g of burnt, possibly human, bone fragments. A single pitchstone blade had been deposited within each feature (SF 45 in 009 and SF 9 in 013: illus 4),

Table 1
Lithic assemblage by context and raw material

Context					*Artefact category*	*Raw material type*		
009	*011*	*013*	*016*	*019*		*Flint*	*Pstone*	*Other*
			1		Core	1		
	3				Chunks (burnt)	3		
1	1	1			Blade	0	2	1
	8		1	6	Flake	11	2	1
	10(2)			2(1)	Flakes <10mm (complete)	11	1	
	8			3	Chunks (<10mm)	11		
				1	Heat spall	1		
				1	Scraper	1		
				1	Perfunctory scraper	1		
1	30	1	2	14	Total	40	5	2



ILLUS 4 Small lithics (SF 4, 7.1, 9, 15, 17, 23 and 45)

as well as sherds from carinated bowls, with four pots (Pots 7–9 and 15: illus 8) being represented in pit 008 and one (Pot 3: illus 8 – a large bowl, similar to Pots 1 and 2) in pit 012. Pot 3 was heavily burnt and the fact that most of the pieces in Pit 008 were spalls could indicate that they derive from burnt pots.

Deposit 016

A deposit of mottled sand (016), possibly lying in a natural hollow, measuring 0.4m by 0.4m, was also identified. This deposit was only partially excavated as it extended under the southern baulk. It contained a flint flake (SF 10.1) and a core (SF 10.2: illus 5) as well as a neck sherd of a carinated bowl (Pot 17: illus 8). This sherd showed no obvious signs of burning.

Fire spot 014

An area of burning (014) was located between pits 008, 012 and 010. This comprised scorched sand, measuring 0.85m by 0.4m, with small hazel charcoal and nutshell inclusions. This was beside a small circular feature (024), 0.04m

TABLE 2
Radiocarbon Dates

Laboratory Code	*Sample*	*Years BP*	*1 Sigma*	*2 Sigma*	$\delta^{13}C$
SUERC-18865 (GU-16715)	Ovicaprid Faeces fragments from pit (019)	4940 ± 30	3760–3660 BC	3780–3650 BC	–26.9‰
SUERC-18866 (GU-16716)	Hazelnut Shell *Corylus avellana* from pit (011)	4930 ± 30	3750–3655 BC	3780–3650 BC	–25.8‰

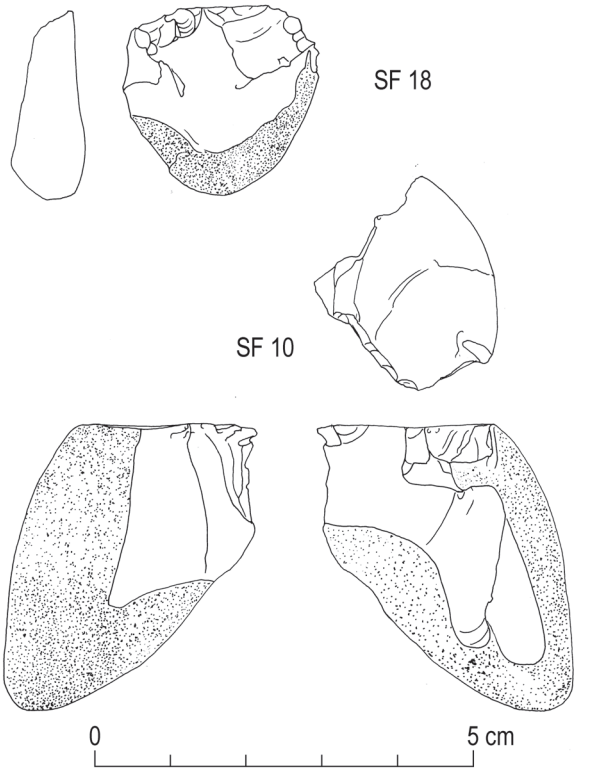
deep and 0.08m in diameter with a dark brown fill (025).

Large pits 001 and 003

Two large pits, (001 and 003), contained dark orange-brown fills rich in charcoal and fire-cracked stones. Both pits were of similar shape in plan, with the larger of the two (003) measuring 1.25m × 1.2m and 0.33m deep, and the smaller (001) 1m × 0.8m and 0.15m deep. The fills within 003 also contained hazel and alder charcoal, while 001 included hazel and willow. Perhaps significantly, the only ceramic finds were tiny fragments of similar fabric to the rest of the assemblage but not attributable to specific pots. One fragment, weighing less than 0.1g, was found in fill 005 of pit 003 (SF 36), and ten fragments, weighing 1.7g, came from fill 002 in pit 001 (SF 41). The presence of fire-cracked stones and charcoal in both pits may suggest that the fills had undergone similar processes prior to and during deposition.

Other features

Two smaller features (006 and 020) were both 0.14m deep with diameters of 0.25m and 0.2m respectively, and had been filled with mid-yellow brown sand (007 and 021). These fills contained hazel and oak charcoal (and 021 contained a fragment of willow charcoal), although the volume of such material was much less than that found in the larger pits. The larger feature (006) also contained a small fragment of hazel nutshell. These features may have been stake-holes.



ILLUS 5 Small lithics (SF 18 and 10.2)

ARCHAEOBOTANICAL

Jennifer Miller

The botanical remains from Maybole indicate the presence of open canopy broadleaf woodland. Hazel (*Corylus*) and especially oak (*Quercus*) charcoal were abundant and in large fragments, with significant numbers of alder (*Alnus*) and willow (*Salix*) fragments also recorded regularly. Birch (*Betula*) was represented by a single twig, however, it is likely that birch was used primarily for purposes that do not leave archaeological traces. Several pit fills contained large volumes of charcoal but only included a few indeterminate cereals and scant nutshell fragments that most probably relate to domestic background scatter. Those pits contained charcoal which, based upon charcoal diameter and species, potentially derived from structural elements, perhaps hazel and willow wattle panelling and oak and alder structural uprights.

Other pits contained domestic hearth waste, with a significant number of food plant remains recorded. Many of the cereals recovered were in poor condition, as is often the case for grain processed over an open fire. This food plant assemblage strongly suggests a domestic occupation site within the Early Neolithic period and has strong similarities to the assemblages from the Neolithic structures at Claish Farm (Miller & Ramsay 2002) and Balbridie (Fairweather & Ralston 1993). The abundance of both hazel charcoal and nutshell implies that hazel shrubs were sufficiently prolific for some to be cut for use in construction or fuel with others left to provide nuts.

SEAWEED

There were many reasons for burning seaweed in antiquity, including as supplementary fuel, but also during cereal parching or production of ash. In the Northern Isles, seaweed was used for foddering (Fenton 1978) and this role cannot be ruled out either, especially given the association with ovicaprid dung in this fill.

THE FAECAL PELLETS

One complete and several broken faecal pellets of ovicaprid origin, probably goat (*Capra* sp.), were recorded. Identification of the best preserved pellets as probably belonging to a goat rather than roe deer (*Capreolus capreolus*) faeces is based upon size and shape, following the characteristics set out by Bang and Dahlstrom (1972). Faecal material of this age is extremely rare in the archaeological record. Waterlogged goat pellets have been recovered from the Neolithic Swiss Lake Villages (Rasmussen 1993; Robinson & Rasmussen 1989) and the Early Iron Age Oakbank Crannog (Miller 2002) but carbonised remains of this age are unknown to the author from Scotland, making this find especially noteworthy.

LITHICS

Nyree Finlay

The small assemblage, comprising struck flint, pitchstone, and single pieces of siltstone and quartz, is interesting given the contextual associations, and suggests a discrete series of knapping and depositional events. Some of the assemblage comprises burnt fragments, and it is possible that many other pieces were also exposed to heat (Finlayson 1990).

There is little evidence for the intensive reduction of the flint so it appears that pieces were produced for a specific task and then deposited. There is some suggestion of particular selection preferences or idiosyncratic knapping by the same individual. One of the regular flint flakes (SF 7.1: 011) and one of the pitchstone blades (SF 9: 013) are very similar in form: both are overshot and curve to the right (illus 4).

The evidence for modification is limited to one distal end scraper and a couple of other pieces, all of which are quite simply fashioned. The quantity of removals and the spurs present on the scraper suggests a low level of ability or quite expedient use (Weedman 2002). The skill level demonstrated by the flint core and primary flakes matches this.

All pieces of the pitchstone are fine quality aphryic material – a few have tiny phenocryst inclusions present and four are dark green in colour, the fifth being light green and either devitrified or burnt. The presence of blades and small flakes of Arran pitchstone mirrors the patterns found at a number of contemporaneous sites where deposition in pits is a characteristic feature (Williams-Thorpe & Thorpe 1984; Warren 2007; Ballin 2009). The use of pebble pitchstone is also a feature of earlier Neolithic assemblages on Arran and at other sites on the mainland west coast and islands (Finlay nd; Donnelly & Finlay nd; Ballin 2009). The abraded platform surface on two pieces at Maybole suggests a probable pebble secondary source and indirectly links features 009 and 019. The pitchstone assemblage displays more skilful or careful reduction than seen in the flint and may reflect the parsimonious use of this non-local material as well as the desire to control and create straight cutting edges. Alternatively, it may be a product of different depositional events for the lithic artefacts within the assemblage, as there is some spatial differentiation between these elements and a contrast can be made between the pitchstone pieces, and the scrapers and primary flakes.

Understanding of Early Neolithic lithic traditions in this part of Scotland is limited by the character of the assemblages recovered, the level of reporting and a lack of synthesis. The presence of burnt flint debitage and pitchstone has been noted in association with Early Neolithic pottery at other sites such as Kirkburn, near Lockerbie, Dumfries & Galloway (Cormack 1963) and South Mound, Houston, Renfrewshire (Stables 1996).

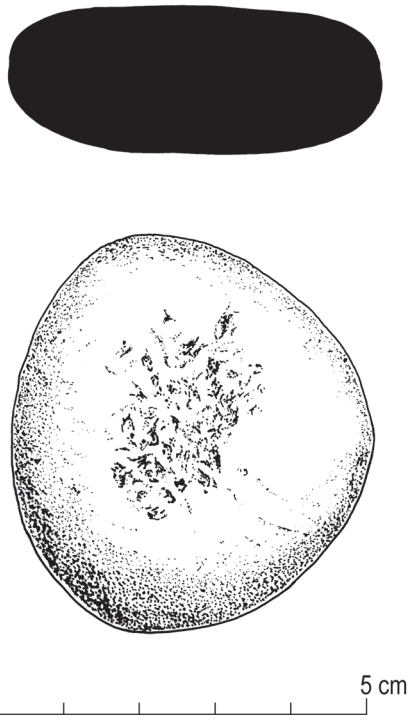
COARSE STONE

Ann Clarke

Four stone artefacts were all deposited within the same pit (019): two cobble tools, a shaped stone and a flake from a polished stone axehead.

The cobble tools are simple forms; the small facially pecked cobble (SF 29.1: illus 6) has a circular spread of pecking on either face and could have been used as a small anvil, as a hammer for a chisel/point, or even to crack open things such as shells or nuts. This cobble tool is similar to tools from the Late Mesolithic site at Sand on Skye (Clarke 2007a). The other cobble tool (SF 29.2) had no obvious damage from use but instead bore black discolouration on one face possibly left from a substance being rubbed or worked.

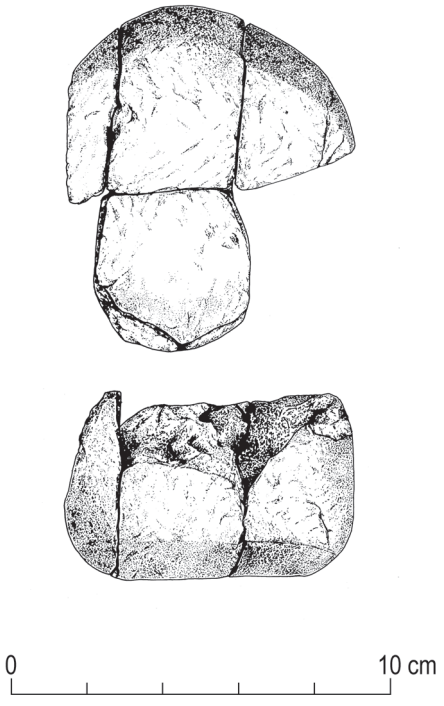
The shaped stone (SF 31: illus 7) had been cracked, probably by fire. The surviving pieces suggest that a rounded granite cobble was pecked and/or ground around the perimeter to form a possible cylindrical shape.



ILLUS 6 Facially pecked cobble (SF 29.1)

The axehead flake (SF 16) is of Group VI rock from Great Langdale (Alison Sheridan pers comm). It is a thin inner flake with a tiny fraction of the polished face surviving. The flake is unlikely to have been detached through use since there is so little left of the original polished face, so it is probably from a deliberately broken axehead. Other examples, dated to the early 4th millennium BC, have been found at Carzield, Dumfriesshire and Galloway (Maynard 1993), Biggar (Ballin & Ward 2008, 19) and Eweford, East Lothian (Sheridan 2007).

Significant deposits of artefacts are common in Early Neolithic pits and most usually comprise pottery and flaked lithics, with an emphasis on blades and objects of pitchstone (Clarke 2007b). The pit at Carzield contained pitchstone blades as well as a fragment of a polished axehead (Maynard 1993). Objects of coarse stone are less common in such contexts and the shaped stone (SF 31: illus 7) is of interest because there are no immediate parallels from the Early Neolithic period for this unusual form. The occurrence of the facially pecked cobble (SF 29.1: illus 6) is interesting as it is similar in form to Late Mesolithic examples



ILLUS 7 Broken stone object (SF 31)

POTTERY

Alison Sheridan

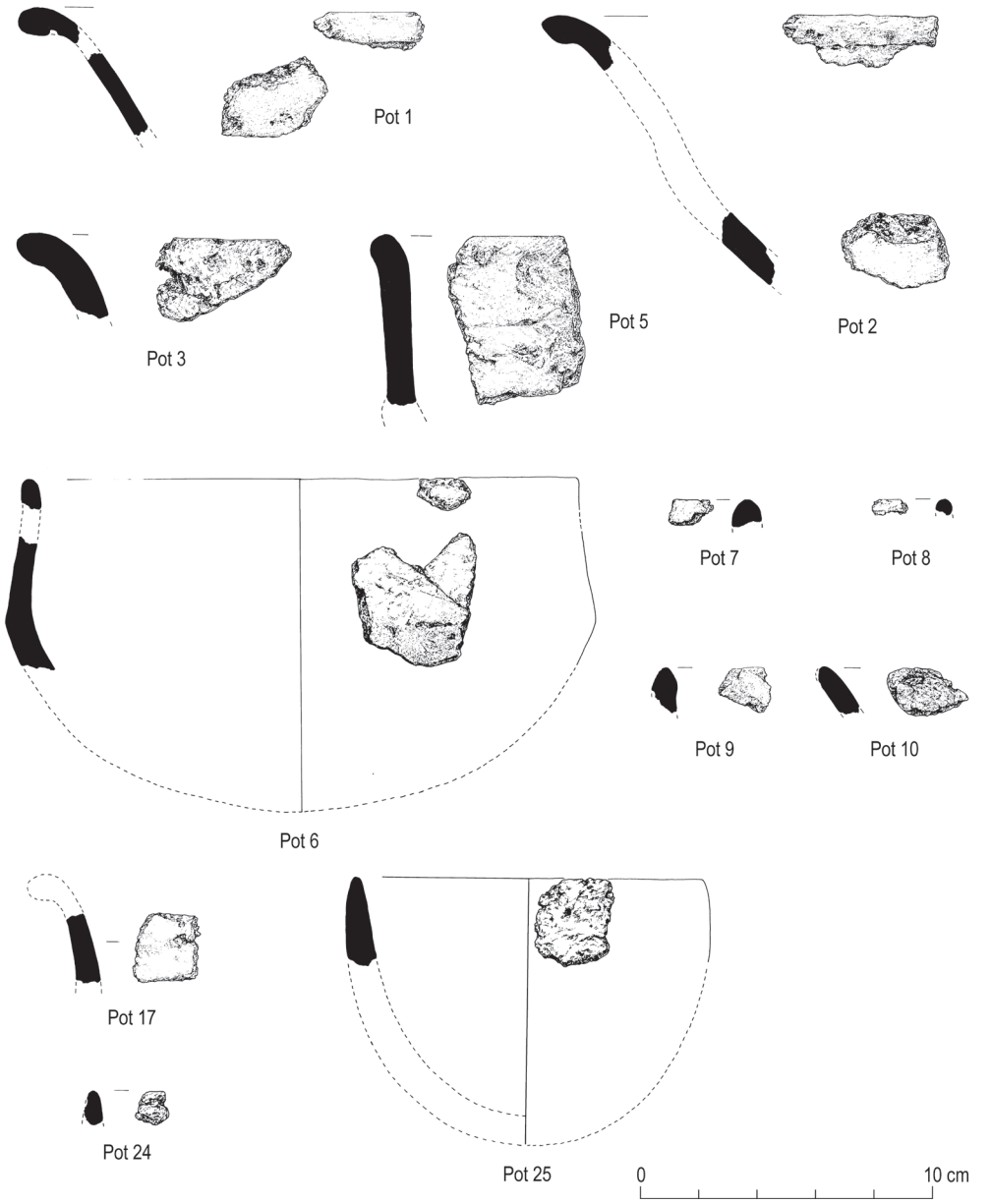
The ceramic assemblage comprises around 130 sherds and numerous fragments representing a minimum of 25 vessels, together with two or three possible lumps of burnt potter's clay; the overall weight of the assemblage reached just under 0.5kg. The assemblage belongs to the Early Neolithic Carinated Bowl tradition. Full details of each pot are available in the archive.

The sherds and fragments are distributed unevenly with most, by number and weight, coming from the fills of pits 010, 008, 018 and 022. Sherds from the same pot (Pot 1, various SF numbers) were found in the fills of two adjacent pits 018 and 022. The two pits that contained large quantities of fire-cracked stone (001 and 003) had only minute fragments of pottery in their fill – just one fragment, <0.1g in weight, from 003 and ten fragments (1.7g) from 001.

The sherds are generally small, with the largest (SF 26, Pot 5) measuring 57mm × 44mm × 11mm, and no more than 5% of any individual pot is represented. Some are abraded, and a significant minority – from pits 008, 010 and 012 – show signs of post-firing scorching or burning. Some (eg Pot 23, part of SF 38) are heavily burnt, oxidised to a pale orange or grey colour and their fabric is significantly softened by heat damage. The burnt sherds are the most heavily abraded.

The vessels are all round-based, and most are likely to have been carinated bowls – including at least three very large examples (Pots 1–3: illus 8), which may well have been shallow bowls with flaring necks whose estimated rim

diameters are in the region of 360–80mm. Rims (illus 8 and 9) are mostly simple, rounded and upright or gently everted; those on Pots 1 and 2 are heavier, oval, and markedly everted. (The Pot 3 rim is similarly everted but less oval.) Necks are straight or minimally curving, and



ILLUS 8 Pottery (Pots 1, 2, 3, 5, 6, 7, 8, 9, 10, 17, 24 and 25)

mostly upright or gently everted; carinations are very gentle; and bellies would have varied from shallow to deep. Wall thickness is generally thin, varying from 5mm (SF 38: Pot 11) to *c* 12mm (SF 21: Pot 2). Surface finish varies from slightly uneven to very smooth and slip-like; the interior and exterior of Pots 1 and 11 have been burnished to a low sheen. The techniques used to achieve the differing degrees of smoothness include rubbing with a pebble or organic spatula (as attested, eg SF 21: Pot 21, where facets are visible on the interior. Burnishing facets are also visible on Pots 1 and 11); wiping with a bunch of grass (as attested by a grass impression on the exterior of SF 5: Pot 18); and wet smoothing using an organic pad at the leather-hard stage.

At least one, and possibly three, uncarinated vessels are represented in the assemblage. Pot 25 (from among SF 38 and SF 6, in pit 010: illus 8) has a gently pointed, inward-sloping rim and, with an estimated rim diameter of *c* 100mm, is likely to have been a cup. The minute, simply-rounded rimsherd in Pot 24 (again from SF 38) could conceivably also have come from a small uncarinated vessel, but it is too small to allow its rim diameter to be estimated (illus 8). Pot 4 (from among SF 6, once more from pit 010) is the bottom part of the belly of a fairly small vessel, but it is equally likely to have come from a small carinated bowl as from an uncarinated pot.

A consistent range of lithic inclusions is present in the pots, and these seem to derive almost exclusively from a speckled crystalline igneous rock, featuring a white mineral (quartzite or feldspar), gold-coloured mica platelets and a black mineral that had been deliberately crushed and added as a filler to help prevent cracking. These granitic inclusions occur in the pottery both as speckled fragments and as the component minerals, generally in fragments no larger than 6mm across, and at low densities (up to 7% of the body by volume). Other lithic inclusions include dull, sub-angular gravel-sized particles that may have been present naturally in the clay, and a few angular fragments of clear quartz. While the solid geology of the Maybole area is dominated by sandstones, conglomerates and lavas, it is possible that the crystalline rock comes from local granitic erratics; consultation with a geologist would be necessary to confirm this. It certainly seems that a deliberate decision was made to target a distinctive speckled crystalline rock. A similar-looking rock was noted in one of the sherds from a site excavated nearby, and indeed the deliberate selection of this kind of rock has been noted from many assemblages of Carinated Bowl pottery in Scotland.

The presence of two lumps of burnt potter's clay in pit 010 (among SF 38: illus 10), identifiable from their irregular form, suggests that the pottery had been made locally. One of these contains tiny mica platelets, as seen in the pottery finds. Along with these, from the same context, is a small, thin, oddly-shaped 'squidge' of red burnt clay around 10mm long. This seems to have originally been partly wrapped around a piece of straw or a twig that had burnt out, and it also has a linear depression on the other side. It resembles daub in miniature, and it may be that this had been a piece of potter's clay that had accidentally become stuck to a piece of straw (or indeed to a basket).

DISCUSSION OF THE POTTERY

The nature, disposition and condition of the pottery suggests that it had been a single-phase domestic assemblage, with parts of numerous pots ending up in pits either as rubbish or as placed deposits, depending on how one chooses to interpret the evidence. The fact that several of the sherds have traces of burnt-on organic residues suggests that some of the pots had been used for cooking. The heat damage observed on several of the sherds could be due to either repeated use on a hearth, or to subsequent burning if the pits in which they had been deposited had later had fires lit in them.

Stylistically, the assemblage clearly belongs to the Early Neolithic Carinated Bowl (henceforth 'CB') tradition, and to the early, 'traditional

CB' part of that tradition. It is comparable with assemblages of similar pottery elsewhere in its predominance of carinated forms and in its range of vessel shapes, sizes, finishes and fabric: the relatively thick-walled and coarse-looking Pot 5, for instance, can be paralleled among traditional CB assemblages such as Biggar Common (Sheridan 1997) and Claish (Sheridan 2002), where such pots occur as a minority element in an otherwise fineware assemblage. This stylistic attribution is borne out by the early 4th millennium radiocarbon dates obtained from contexts 011 and 019. The association of this pottery with a fragment of a Great Langdale (Group VI) stone axehead accords with evidence from elsewhere, such as at Carzield, Dumfries and Galloway (Sheridan 1993), where a Group VI axehead fragment was found with traditional CB pottery. It offers a useful piece of evidence to demonstrate that the network of Early Neolithic contacts, over which axeheads and other objects, ideas and people travelled, had been established between two to four centuries after the initial appearance of the 'CB Neolithic' (see Sheridan 2007 for an extended discussion of the 'CB Neolithic').

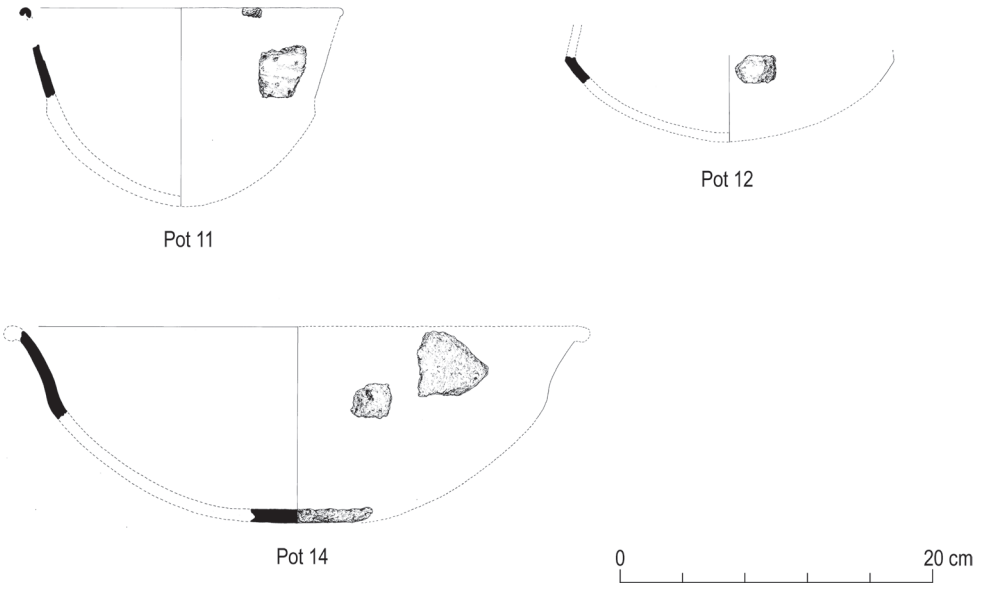
BURNT BONE

Paul Duffy

Three features produced small assemblages of burnt bone: pits 011, 013 and 019.

From pit 010, 9.8g of cremated human bone was recovered. Identified elements included fragments of left ulna and carpal (*hamate*) and an unsided metacarpal head. Small quantities of unidentified longbone (2.7g) were also recorded.

Further unidentifiable burnt bone fragments were recovered from contexts 013 and 019. Variable weathering of the fragments was noted within each small assemblage. Similar deposits of cremated bone have been identified from several sites across Scotland, although interpretation varies (eg Pollard 1997).



ILLUS 9 Pottery (Pots 11, 12 and 14)

RADIOCARBON DATING

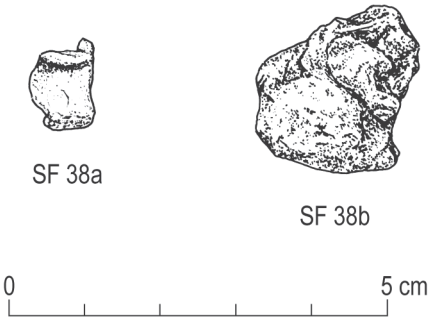
Fragments of carbonised ovicaprid faeces from pit 019 and hazel nutshell from pit 011 were submitted to the Scottish Universities Environmental Research Centre (SUERC) for AMS radiocarbon dating. Both samples produced essentially identical two-sigma date ranges of between 3780–3650 cal BC, placing the activity at Maybole in the Early Neolithic period.

DISCUSSION

THE FEATURES

It seems likely that the features excavated at Maybole are all broadly contemporary and were in use for a short period during the Early Neolithic. This view is supported by several links between features through the artefactual assemblage, similarities in morphology and fill type, and the radiocarbon dates obtained, as well as the uncluttered layout of the site where no two features inter-cut. The lack of weathering seen in the base of the features suggests a relatively short phase of activity occurring on the site; perhaps spanning over a number of days, weeks or a few seasons. The evidence suggests that a broad range of activities was taking place at the site, including production of pottery, knapping of lithics, and potentially the tending of livestock (or at least collection of dung for fuel) and cereal processing. People cooked at the site, possibly roasting hazelnuts and using grains, perhaps in some of the pots in which traces of burnt residues were found. The fire-cracked stone in two of the pits may also relate to cooking practices. The stones, having been heated in a fire, could have been used to boil water or may have been deposited in the pits for dry roasting. The presence of pottery fragments within the fills suggests earthenware vessels may have been used during such a process.

There is a growing body of evidence that indicates that pit digging and deposition was a significant practice in the Early Neolithic of Scotland (eg Alexander 1997; Atkinson 2002; Maynard 1993). There has been some debate over how Early Neolithic pit deposition can be interpreted, with two broad perspectives frequently taken: viewing deposits either as meaningfully structured (ritual) deposits, or merely dumps of domestic rubbish (Pollard 2001; Garrow 2007). However, there is increasing recognition that there was not necessarily such a marked distinction in how practices were undertaken in the past (eg Brück 1999; Bradley 2005; Thomas 2004). The reasons for deposition would thus be understood in relation to a different set of cultural categories. For example, in the case of Maybole, the presence of burnt human bone in association with deposits of broken artefacts raises some interesting questions about the way in which different categories must be considered in relation to wider practices of fragmentation, transformation and deposition (Fowler 2003). In this respect, it is important to consider how the different characteristics of the features' fills at Maybole indicate a range of activities taking place at the site and in the wider landscape during the period of occupation.



ILLUS 10 Potter's clay from Pit 010

A WIDER LANDSCAPE

The deposits at Maybole provide evidence for a range of activities taking place in the vicinity of the site, and hint at the broad character of the wider landscape, which Miller (above) characterises as

open canopy broadleaf woodland. The palaeo-environmental evidence shows that there was some exploitation of wild plants and cereal cultivation, perhaps in fields close to the site but with ready access to woodland, suggesting a patchwork of forest grazing, fields and gardens (cf Bogucki 1987; Bogaard 2005). Evidence of seaweed also shows that people were exploiting resources on the coast, the closest coastline being some 4km to the north-west. While people may have gathered goat dung, perhaps during foraging trips, the presence of carbonised goat faeces implies that people were in close proximity to the animals (cf Bakels 1996, 444), and other livestock may also have been kept. It is unclear whether the dung had been deliberately used as a fuel, was derived from a midden, or was incorporated into the pit deposits for other reasons.

It is also possible that seaweed was being collected by people and brought inland to provide fodder for goats, although this is uncertain. There is evidence, however, that seaweed was used as fodder in Neolithic Orkney where none other was available (Balasse et al 2006). If the seaweed at Maybole represents fodder, it may have been used during winter when other foodstuffs were in short supply – a proportion of the goats perhaps being overwintered in the area of occupation. A period of occupation in autumn or winter is supported by evidence for consumption of apples and hazel nuts.

The suggestion people were living in close proximity with animals such as goats might be anticipated in the Early Neolithic – there is certainly evidence from other parts of Europe that this was the case (eg Halstead 2006). In contrast, the previous *Linearbandkeramik* tradition of central Europe appears to be dominated by cattle, as does the Early Neolithic of Britain (at least in southern England) but the evidence largely comes from ceremonial sites (eg Thomas 2007; Oswald et al 2001; Whittle 2003; Ray & Thomas 2003). Consequently, a number of biases (also including bone robustness) may lead to cattle being over-represented. It is probable, however, with evidence for regional variation in the Scottish Early Neolithic, that there was a variety of different balances to subsistence strategies: some groups perhaps relying more on cattle and others specialising in goat or sheep. The evidence for goats at Maybole raises some interesting possibilities about herding strategies which may have been practised at this time in south-west Scotland.

The balance of different subsistence strategies may have resulted in different degrees of mobility and rhythms of practices relating to the habits of the predominant livestock (Whittle 1997; 2003). Whittle speculates, in relation to southern England, that herding strategies with cattle may have been further ranging, while goats and sheep were perhaps in closer proximity to settlements. Indeed Bogaard (2005, 187) suggests caprines are readily integrated with cultivation, goats being more closely associated with browsing woody vegetation, as opposed to sheep, which graze arable ground. Furthermore, Mackenzie (1980, 66–7) notes that modern populations of goats are comparatively difficult to herd in contrast to, for example, sheep, which tend to flock. These observations would suggest that the proximity and rhythms of engagement between different domestic species and human populations was quite variable. If there was a preference for goats at Maybole, they would have been in relatively close proximity to the settlement, perhaps ranging from the dwellings themselves into the margins of nearby woodland. It is important to stress that the inter-relationships between people and animals at this time was not simply an economic one but was probably a fundamental part of peoples' belief systems (Jones 1998; Pollard 2006).

Considering the range and rhythms of mobility that different livestock require reminds us that people were not necessarily confined to cultivating small plots of 'infield' in close proximity to their occupation. In this respect, the presence of seaweed is again important as it shows that people were actively exploiting another niche in the wider landscape: the coastal

zone. Not only would they have access to a wider range of resources but here they were probably able to see the location where the pitchstone of Arran, deposited in pit 019, was derived from (Williams-Thorpe & Thorpe 1984; Ballin 2009). At this location they were also on the edge of a seascape, which brought them into wider sets of relationships across the Irish Sea (Sheridan 2004; 2007), and through which the Group VI Great Langdale axehead may have derived.

It is notable that burnt human bone was deposited in at least one of the pits. The bone may have derived from a pyre (or pyres) burnt close to the occupation or could have been brought from deposits created at ceremonial sites where such activities may have taken place. In this respect it is notable that the closest long cairn to the occupation is at Dippen, Arran (Henshall 1972), 19km to the north-west. There are further notable concentrations of contemporary Clyde-style cairns elsewhere on Arran, and a Bargrennan-style cairn 26km to the south of Maybole, which may be contemporary. There is significant evidence from Maybole to suggest that, even during what appears to be a relatively modest phase of occupation, people were embedded in a series of practices that extended far into the wider landscape.

CONCLUSION

The excavation and post-excavation analysis of a small group of pits and hearth at Maybole has provided important insights into aspects of the nature of occupation during the first half of the fourth millennium BC in south-west Scotland. The pits and the possible hearth suggest that there was occupation at this site, probably for a short time between 3780 and 3650 cal BC. There is evidence to suggest a wide range of activities took place, which ultimately resulted in the deposition of food waste, potter's clay, broken pottery, struck lithics, an axehead fragment, goats dung and burnt human bone in pits. The mixed range of materials reminds us that the practices that took place were not understood within trends that are immediately familiar to us.

Carbonised goat pellets of such an early date from a British site are a significant find in their own right and within the context of Early Neolithic life in south-west Scotland they are of particular importance. The Maybole pits (albeit on a small scale) provide an opportunity to examine the inter-relationships of human, animal and the environment in which they existed at a crucial point in the development of a new way of life.

ACKNOWLEDGEMENTS

GUARD wishes to thank Murphy Group and Scottish Gas Networks for help and assistance during the course of the project. Maureen Kilpatrick assisted in the excavation of the site. Illustrations were produced by Gillian McSwan and Caitlin Evans, and artefact illustration was provided by Jill Sievewright.

Ann Clarke is very grateful to Dr Alison Sheridan, National Museums Scotland for confirming the Group VI source for the axehead flake and for general axehead discussion.

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