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Intermittent occupation and forced abandonment: excavation of an Iron Age promontory fort at Carghidown, Dumfries and Galloway

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ABSTRACT

Excavations at Carghidown demonstrate sporadic occupation of this promontory fort over a short period, during the late first millennium BC *or early first millennium* AD*. The analysis of lead beads from this settlement adds support to growing evidence for copper mining in this area of Galloway at the time and suggests that the inhabitants were of some status within the local social hierarchy. The excavation also demonstrates that the site was only formally enclosed during the latter stages of its occupation and that within a year or two of this act of enclosure the ramparts were violently thrown down, the repair and construction of buildings within the settlement was abruptly halted and occupation ceased.*

INTRODUCTION

Over two seasons of fieldwork, during the summers of 2003 and 2004, the author directed the archaeological excavation of Carghidown promontory fort in response to coastal erosion and with the aim of investigating the primary occupation of a later prehistoric settlement within a lowland landscape in Galloway.

Carghidown is located on the western coast of the Machars peninsula, a few miles SSW of Whithorn (NGR: NX 4356 3507; illus 1). It lies approximately 30m above sea level on a promontory of till overlying a precipitous, fractured greywacke cliff containing sea caves (Cressey & Toolis 1997, 118) and at the foot of steeply seaward-sloping pasture fields. Being quite starkly overlooked by the immediate hinterland it seems an inherently indefensible location for a fortified settlement (illus 2).

The site is defined by a linear earthen rampart across the neck of a small square promontory approximately 400sq m in size (illus 1). The rampart rises to a significantly higher level above the interior ground level in comparison to the exterior ground level. A gap of around 2.8m between the rampart terminus and the cliff edge at the south-east corner of the site appears to form the original entranceway. Two circular depressions, one roughly 12m and the other roughly 8.5m in diameter, are evident within the interior of the site, the larger one being immediately behind the rampart. A small open area lies between the two circular features, the north-eastern entranceway and the south-eastern cliff edge.

Carghidown is one of 50 promontory forts recorded along the Galloway coast. Surveys of later prehistoric settlements in Galloway, including many promontory forts, have been carried out since the late 19th century (Wilson

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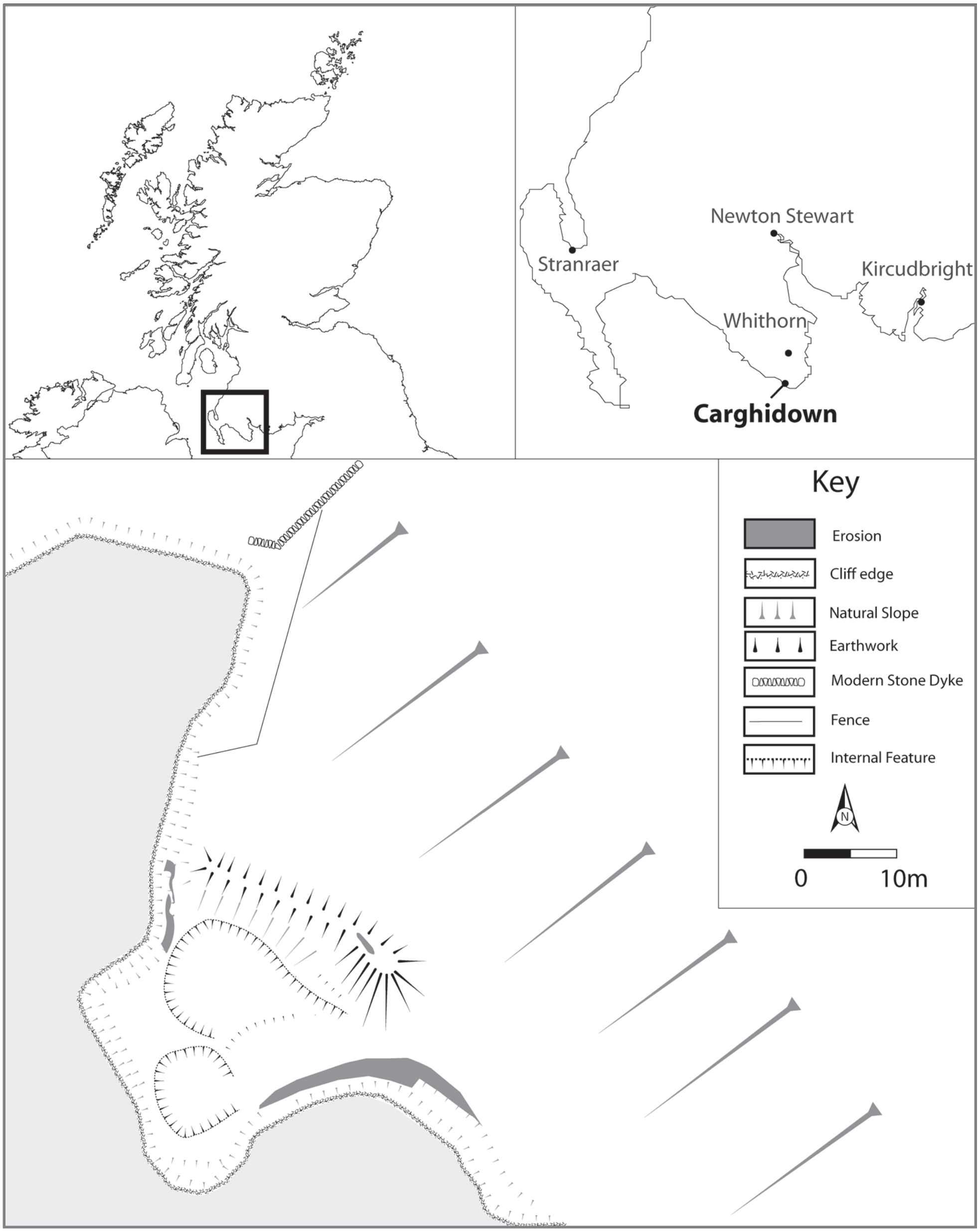


Illus 1 Site location plan

1885; Coles 1891; 1892; 1893; RCAHMS 1912; 1914; 1955; 1985; Feachem 1956). A survey of 16 of the Galloway promontory forts was carried out by the author between 1996 and 1997 and established that Carghidown was one of only five on Galloway's Solway Coast currently affected by ongoing coastal erosion (Toolis 2003, 70). The survey and subsequent monitoring during the pilot Shorewatch scheme demonstrated localized coastal erosion of both the north-western and south-eastern sides of the promontory, the soft till being gradually removed from the cliff edge by slope failure and constant weathering (Toolis 2003, 46–7). Since first described at the end of the 18th century (Davidson 1795, 287), Carghidown appeared to have been severely reduced by coastal erosion, with ongoing attrition (Toolis 2003, 47).

Of the five promontory forts identified during the survey as under threat, the impact of coastal erosion at three sites situated along the south-west coast of the Machars peninsula, Back Bay, Carghidown and Castle Feather, was of particular concern as each possessed comparatively rare, well-preserved remains of internal features, albeit secondary medieval features in the case of Back Bay and Castle Feather (Toolis 2003, 64, 70–1). Carghidown was identified as especially significant in preserving apparently undisturbed remains relating to the original prehistoric occupation of the site (Toolis 2003, 45–7, 64).

Previous excavation of coastal promontory or clifftop forts in Galloway has been limited to three sites. The excavation of McCulloch's Castle revealed artefactual evidence for occupation around the second century AD but no discernible structures within the heavily disturbed interior (Scott-Elliot 1964, 118–23). Cruggleton Castle, excavated in response to coastal erosion (Ewart 1985, 6), revealed that the earliest occupation of the site was represented by the partial remains of a roundhouse dated to the end of the first millennium BC or start of the first millennium AD (Ewart 1985, 12–14). A bronze bow brooch of the mid-first to mid-second century AD (Caldwell 1985, 64), albeit from a disturbed medieval context, provided further evidence of Iron Age occupation and led the excavator to suggest that the site was originally a promontory fort (Ewart 1985, 14), although no original ramparts were exposed. An exploratory excavation was carried out at the Mull of Galloway to investigate the

ILLUS 2 General view of Carghidown from north-west

two linear earthworks that cross the headland (Strachan 2000). This investigation revealed a set of closely spaced linear inner ramparts and a single linear outer rampart (Strachan 2000, 3–4) but no dating evidence. While comparisons have been drawn between the morphology of the closely spaced multivallate ramparts at the Mull of Galloway and Iron Age inland promontory forts in Ireland such as Knockdhu and Lurigethan (Strachan 2000, 30–1), it is difficult to make comparisons, in terms of scale and morphology, with other promontory forts on the Galloway Coast. Furthermore, while the evidence accumulated from McCulloch's Castle, Cruggleton Castle and the Mull of Galloway corresponds broadly with other promontory forts within the British Isles (Toolis 2003, 41), not one of these sites has yielded substantial evidence for the nature of the original occupation.

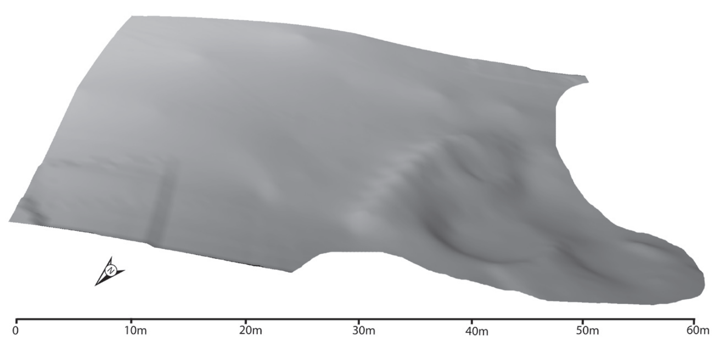
Contrary to previous observations (Feachem 1966, 76), the promontory forts of Galloway's coastline are not a homogenous settlement type distinct from the rest of the regional later prehistoric settlement pattern (Toolis 2003, 69). They do show, at least superficially, characteristics representative of enclosed settlements in Galloway. For instance, the use of building materials and the morphology of internal organization of promontory forts adhere to traits identified within inland settlements (Toolis 2003, 69). However, as others have observed, little is known about the majority of enclosed settlements within Galloway (Cowley 2000, 172), whether on the coast or inland. Even with the distinct concentration of promontory forts, crannogs and brochs, together with the perceived dominance of small, circular enclosed sites (Truckell 1984, 200), that apparently distinguishes the later prehistoric settlement pattern of Galloway from the lands east of the Nith and particularly south-east Scotland, there is a dearth of evidence (Armit & Ralston 1997, 187–8; Haselgrove et al 2001, 29; Banks 2002, 31), particularly from stratified contexts, to substantiate any kind of meaningful settlement pattern or associated underlying cultural identity.

The apparently undisturbed remains relating to the prehistoric occupation of Carghidown was therefore of special potential significance, as complex stratified deposits within any kind of later prehistoric settlement in Galloway are rare and, of the few modern excavations of later prehistoric sites in the region, most have tackled only cropmarks or plough-truncated sites (Haggarty & Haggarty 1983; Johnston 1994; Banks 2000; Gregory 2001; Cook 2006; MacGregor forthcoming). The excavation of Carghidown, therefore, sought to retrieve evidence that could be compared with information from the wider later prehistoric settlement distribution in Galloway.

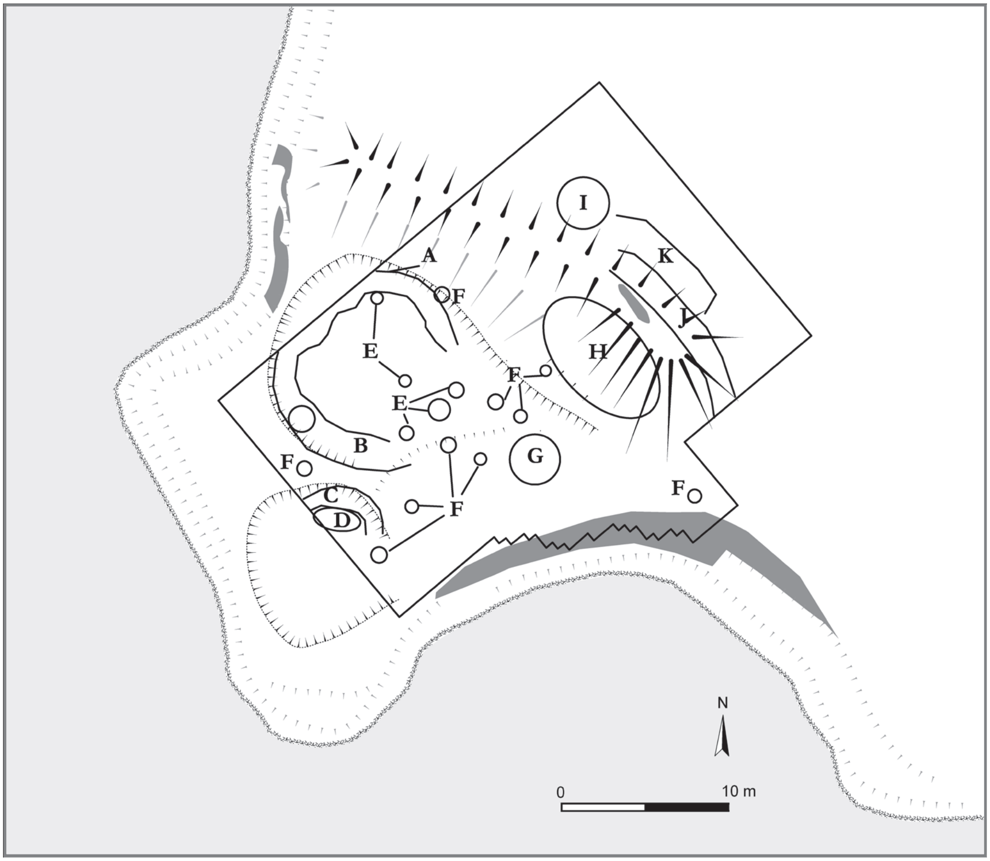
THE SURVEYS

Tessa Poller, Alan Hunter Blair and Ronan Toolis

A contour survey was carried out using EDM surveying equipment in order to record in 3D the apparent surface features immediately prior to disturbance of the ground by evaluation



Illus 3 Contour survey



Illus 4 Geophysics survey

trenches during the first season in 2003 (illus 3). This contour survey confirmed the results of the site survey carried out by the author in 1996 (Toolis 2003, 46; illus 1), clearly revealing two circular hollow features within the promontory fort. The contour survey also demonstrated the steep gradient of the exterior land as it dropped towards Carghidown and the marked declivity between the rampart that defined the site and the interior of the promontory fort itself. The coastal edge of the promontory fort was surveyed again during the second season in 2004 and confirmed ongoing coastal erosion of both north-west and south-east sides of the neck of the promontory.

A geophysics survey was also undertaken immediately prior to the excavation in 2003 (Poller forthcoming; illus 4). Gradiometry was carried out using an FM 36 fluxgate gradiometer. Readings were taken every 0.5m within 20m by 10m grids. A total area of 600sq m was surveyed. The survey covered much of the internal area and extended beyond the rampart of the promontory fort. For both practical and safety reasons a distance of at least 2m was maintained from the cliff edge of the promontory. Each feature identified in the results of the survey has been given a letter and in the text this letter identifier, noted within parenthesis, follows the description of the feature.

The outlines of both circular hollows were each defined by a different magnetic character. The interior of the larger circular hollow was indicated by a slightly lower magnetic response than its exterior (A). This lower magnetic signature corresponded to an area of stones uncovered during excavation. Just inside, following the curve of its edge, there was a very diffuse band of even lower magnetic signature (1–3m wide; B). This may be the faint trace of a collapsed wall. No other evidence for a wall or ditch was identified.

By contrast, the outline of the smaller circular hollow appeared as a dark, high magnetic band, in all probability defining a ditch or a wall made out of a different material from the surrounding geology (C). This high magnetic band, approximately 1m wide and 5m long, was located on the north side of the hollow. Just inside this band was an area of low magnetism (D), perhaps an indication of stone foundations. These features appear to follow the curve of the hollow further to the south-west, outwith the area surveyed.

Although no other large distinct internal features were identified in either hollow, there were a few small (0.5m in diameter) scattered points of high and low magnetism within the larger hollow, which were thought to be traces of post-holes (E). However, excavation during the 2003 season revealed that the low magnetic anomalies correlated with areas where the bedrock was nearer the surface (see below). One high magnetic anomaly was targeted by excavation, but did not correspond to a specific feature. Similar small circular (<0.5m diameter) high magnetic readings were dotted around the survey area (F). Several formed a line that extended from the smaller hollow. Although these 'dots' may be geological anomalies, some of them may be archaeological features such as post-holes. Another of these circular features, located on the same alignment as the rampart, fell within the 2003 trench. However, no archaeological feature was found on this spot (see below).

A circular anomaly that produced a very low magnetic reading, approximately 5m in diameter, was identified halfway between the entranceway and the circular hollows (G). It was first thought that this might have been a pit. However, upon excavation it was shown not to correspond to anything archaeological. Therefore, it seemed most likely that npn-conformation within the geology had a big effect on the gradiometric readings.

Taking the effect of the bedrock into account, the area of low magnetism on the downward slope (H) at the rear of the rampart can also be interpreted as geological. The smaller features in this area had a higher magnetic reading and were slightly larger than the high magnetic 'dots', which could possibly be archaeological.

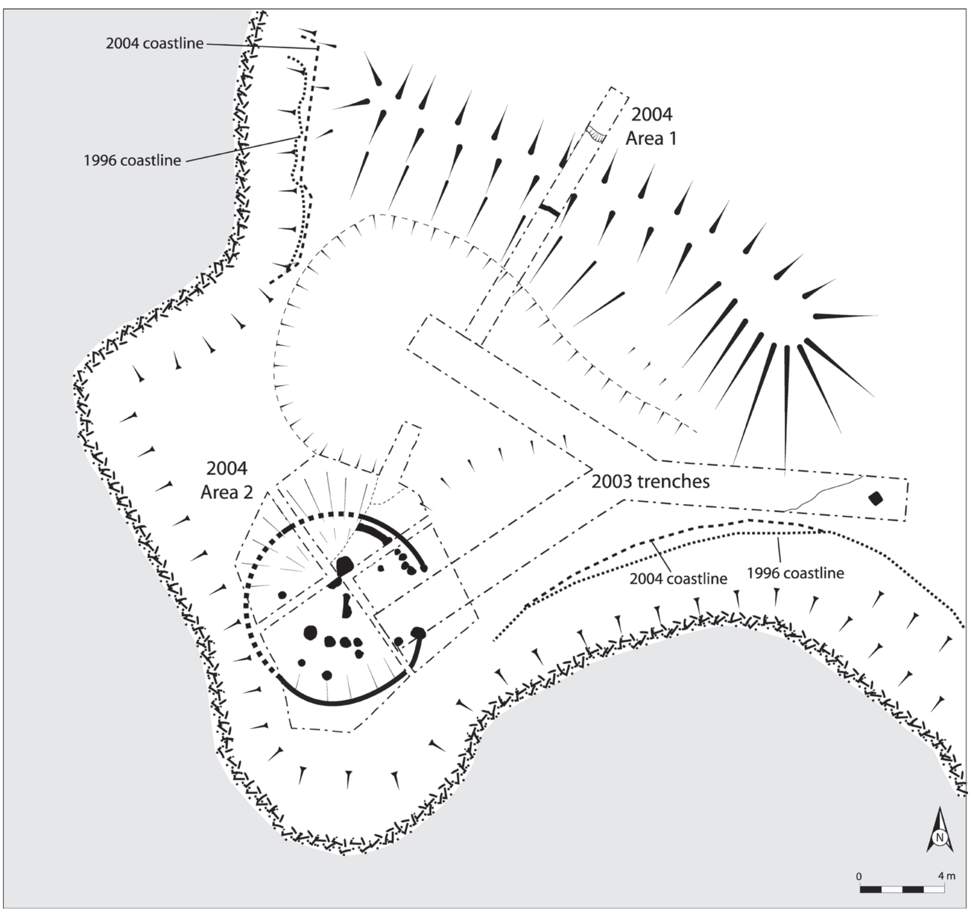
There was another area of contrastive high and low magnetism 5m to the north-east of feature (H), located outside the rampart (I). An area of high magnetism was flanked by a low magnetic anomaly producing a dipole approximately 5m by 4m. This anomaly indicated an area of high burning or an object that was highly ferrous. The latter interpretation was demonstrated by the 2004 excavation (see below).

The rampart itself did not appear clearly on the gradiometry results. However, immediately to the north-east (outside) of the rampart there was a linear anomaly that paralleled the line of the rampart for approximately 10m. This anomaly was characterized by a band of lower magnetism (J), approximately 2m wide, flanked on the north side by an area of higher magnetism (K) and which indicated the traces of an external ditch. Feature (I) abutted the end of the higher magnetic band and therefore indicated perhaps a feature located within the rampart.

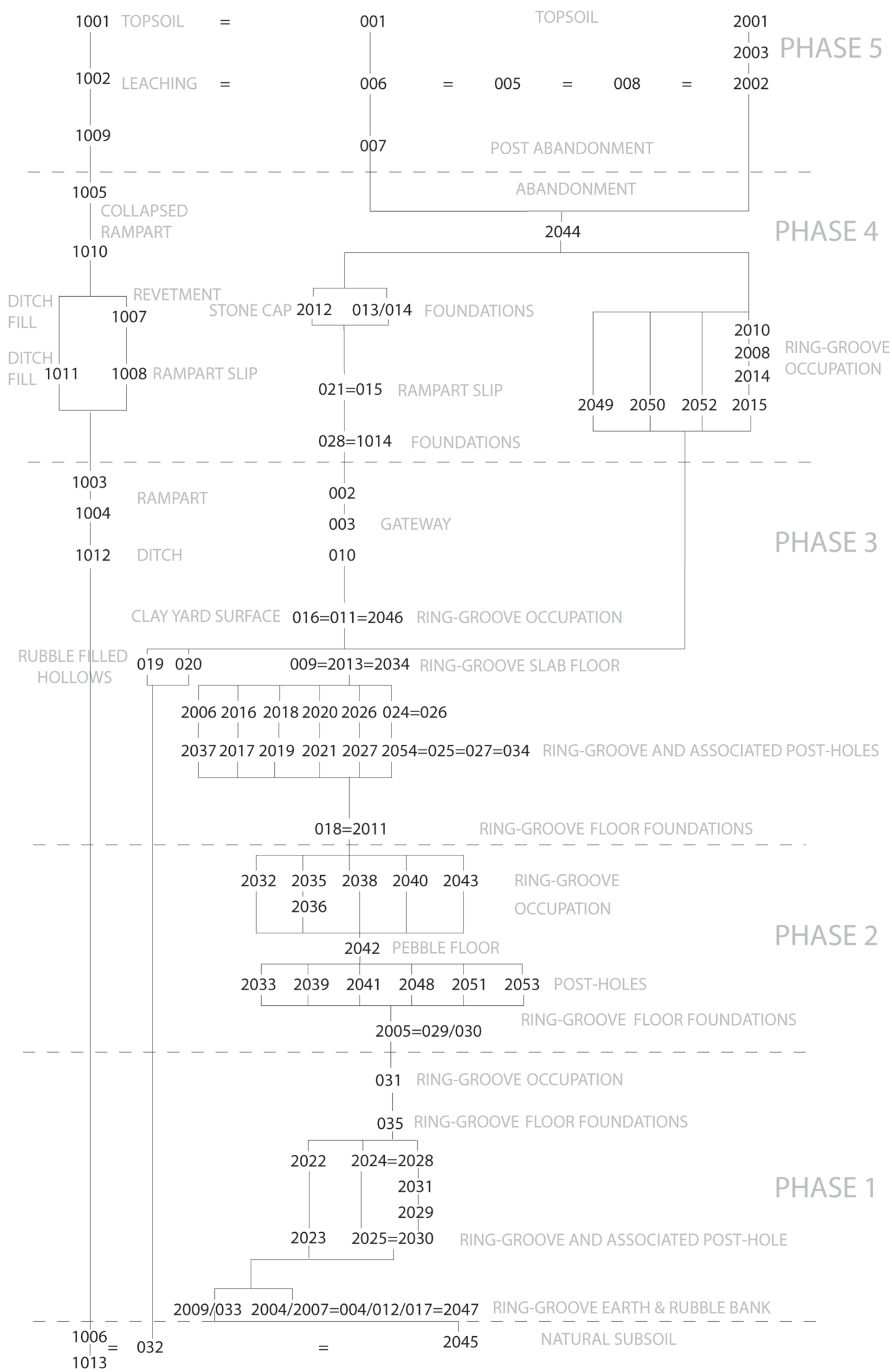
In sum, the results of the gradiometry survey show that the construction, or at least the preserved state, of the two hollows was different. The interior of the larger hollow failed to produce any clear features, such as a hearth. However, there were a few possible indications of post-holes outwith the circular hollows. Although the rampart was a prominent feature topographically, unsurprisingly its magnetic response was not dissimilar to the underlying geology. However, there were likely traces of an external ditch, within which there was a ferrous deposit.

THE EXCAVATIONS

The excavations examined a variety of features within trenches covering 190sq m (illus 5). The strategy was to examine each of the constituent parts that defined the site: the rampart; the larger circular hollow immediately behind the rampart; the smaller circular hollow at the southern corner of the site; the open space between the two circular hollows; and the entrance space. The first season in 2003 was planned as an evaluation, to identify which parts of the site were worth targeting for excavation. To achieve this, two trenches were excavated, close to the southern area of the promontory most at risk from coastal erosion. These trenches revealed the archaeological potential of the circular hollows, the open space and the entrance space. Only one area, the smaller circular hollow at the southern corner of the site, was shown to have a significant depth of potentially complex archaeological deposits. That these deposits were within what appeared to be the interior of a roundhouse was particularly valuable as these deposits could thus provide evidence relating to the occupation of the site.



Illus 5 Excavation plan



Illus 6 Harris matrix of Carghidown excavations

During the second season of fieldwork in 2004, the main target of the excavation was therefore the smaller circular hollow (Area 2). Another trench (Area 1) extended from the northern edge of the 2003 trench within the larger circular hollow, up over the rampart and across into the external ditch at the point where the ferrous anomaly had been noted during the geophysics survey.

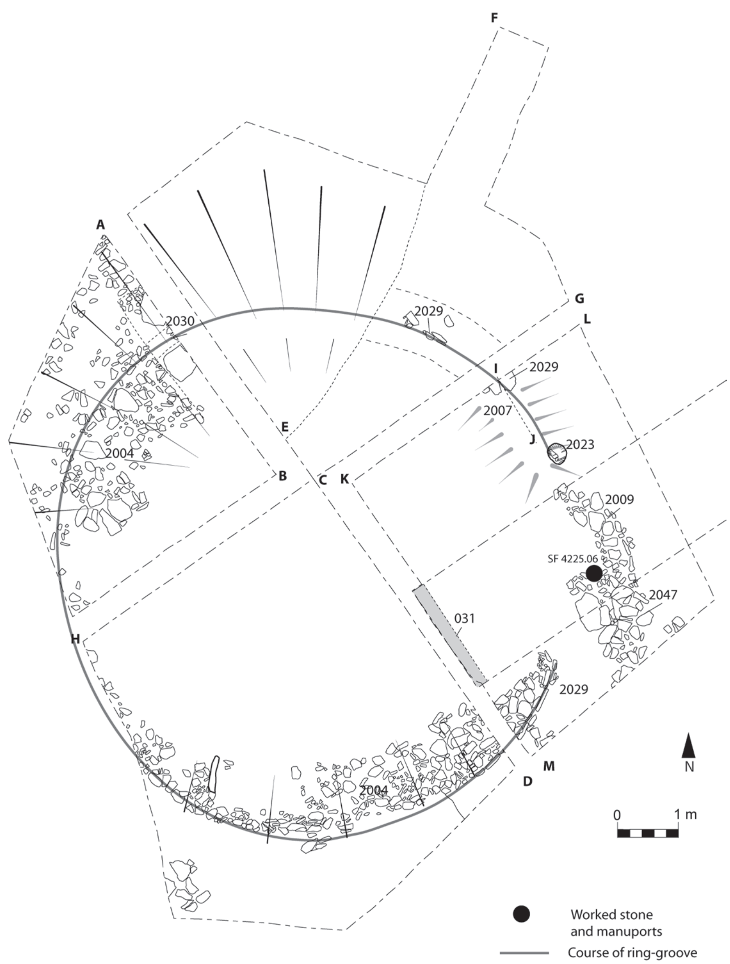
The underlying natural subsoil predominantly comprised very compact orange/grey brown silty sand, gravel and fractured bedrock. Natural subsoil was encountered at varying depths across the site.

PHASE 1 RING-GROOVE

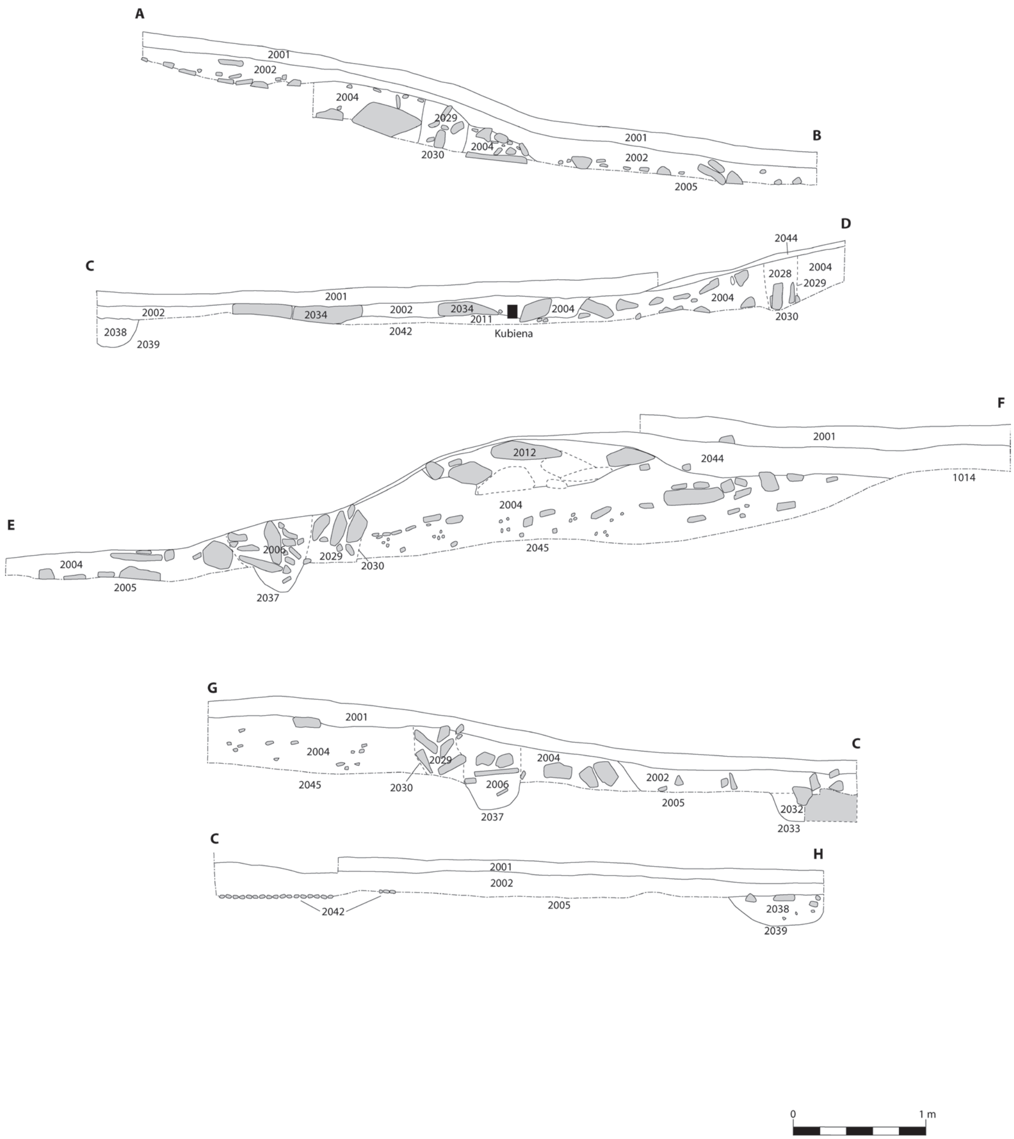
The earliest demonstrable stratigraphic feature (illus 6) overlying the natural subsoil (context 2045) was the curvilinear earth and rubble bank (context 2004/2007) at the southern corner of Carghidown, which defined a circular space (illus 7). This 0.35–0.45m high bank comprised a very compact light greyish brown silty sand matrix enclosing angular greywacke stone rubble. An outer face of greywacke stones (context 2047) defined its south-east side immediately south of a gap in the bank. Only one artefact, a circular water-worn cobble (SF 4425.06), was recovered from the base of the east quarter of the bank, close to the stone surface (context 2009/033) that appeared to define a gap in the earth and rubble bank. Relatively substantial amounts of charcoal were also recovered from the matrix of the bank.

The top of the earth and rubble bank (context 2004/2007) was cut by a circular ring-groove (context 2025/2030) trench that defined a space *c* 9m in diameter. The ring-groove itself was largely filled on its south, west and north sides by vertical greywacke packing stones (context 2029) that defined spaces around 0.08m wide, set at least 0.33m deep into the earth and rubble bank (illus 8 & 9). A single post-hole (context 2023) that cut through the enclosing bank (context 2004/2007) appeared to form the terminus of the ring-groove trench at the north side of the eastern gap in the earth and rubble bank. A deposit of clay (context 2031) was recovered from the interior face of the packing stones (context 2029) filling the south part of the ring-groove. The silty sand (context 2024/2028) filling the ring-groove contained charcoal fragments.

The margin of the internal space defined by the ring-groove was obscured by collapse from the surrounding earth and rubble bank (context 2004/2007). Excavation revealed that the true inner edge of the bank defined an interior space *c* 6.4m in diameter. Abutting this inner edge, and only revealed



Illus 7 Phase 1 plan of ring-groove



Illus 8 Baulk sections through ring-groove

in a sondage at the eastern end of the 2003 evaluation trench, was a compact, mottled light brown silty clay layer (context 035), the foundation for a 0.12m deep overlying layer of compact, mid-greyish brown sandy silt (context 031) with frequent inclusions of small stones and gravel, representing a probable floor surface. The remainder of this layer and any demonstrable relationships with post-holes were not exposed during the limited duration of the excavation.

PHASE 2 RING-GROOVE

The second phase of activity within the ring-groove was represented by a silty sand foundation layer (context 2005/029/030), for another floor surface (context 2042; illus 10), which overlay the earliest floor surface (context 031). This foundation layer (context 2005/029/030) was cut by a number of post-holes (2039, 2041, 2048, 2051 & 2053). Many of

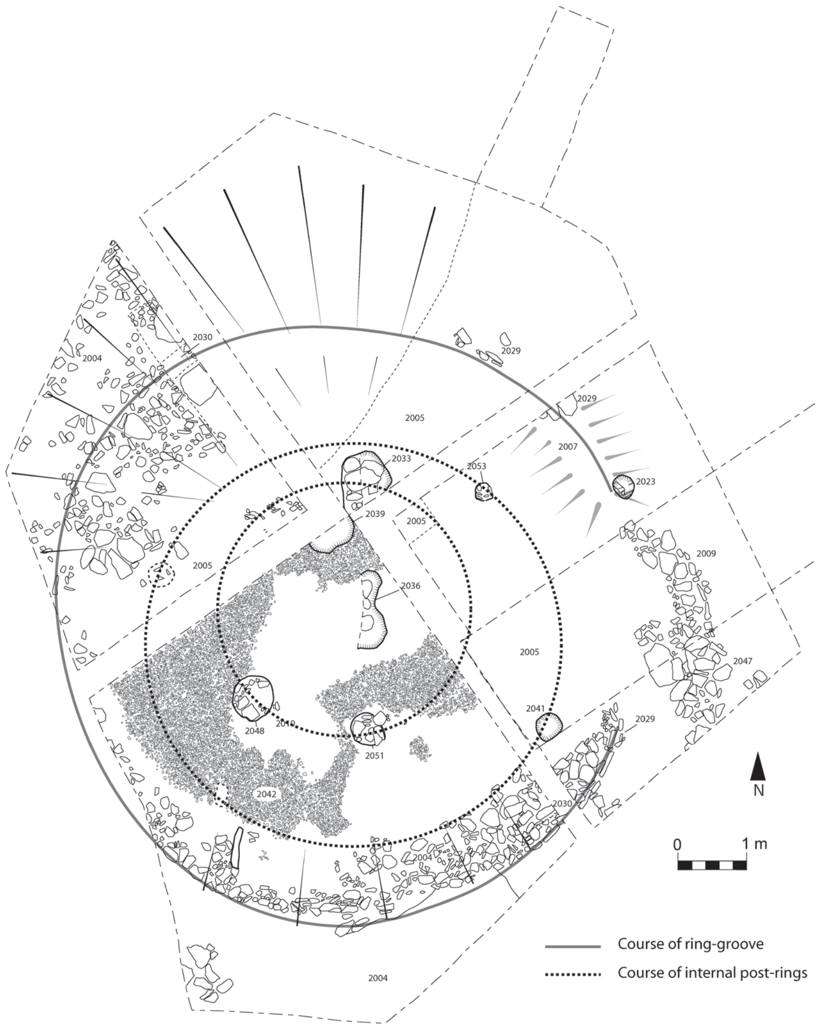
Illus 9 Baulk sections through ring-groove

the post-holes contained charcoal flecks and packing stones that defined the diameters of the posts. Post-holes 2048 and 2051, and possibly Post-hole 2039, appeared to form part of an inner post-ring, 3.8m in diameter, composed of posts between 0.20m and 0.25m in diameter. Post-holes 2041 and 2053 and another couple of unexcavated post-holes within the west part of the ring-groove appeared to form part of a 6.1m diameter post-ring set close to the inner edge of the bank (context 2004/2007), composed of posts around 0.12m in diameter. Abutting the packing stones of the post-holes was the floor surface (context 2042), composed of a very compact rounded pebble surface 0.03m deep within a matrix of compact greyish brown silty sand, occupying predominantly the southern quarter of the ring-groove interior. A possible 'figure of eight'-shaped pit (context 2036) from the fill (context 2035) of which a heat-fractured stone was recovered cut this floor surface (illus 11). Another large pit or post-hole (2033) filled with compact, mid-brown silty sand (context 2032) with frequent inclusions of large angular and rounded stones, including a possible post-pad, cut the floor surface to the north of the central area of the ring-groove. The floor surface (context 2042) abutted the inner edge of earth and rubble bank (context 2004) and was overlain by a very thin layer of compact dark brown silty sand with occasional inclusions of grit (context 2043).

PHASE 3 RING-GROOVE, OPEN SPACE, ENTRANCE, RAMPART & DITCH

The third phase of activity within the ring-groove structure was represented by a fragmented bedrock and gravel foundation base (context 018/2011) for another floor surface, which overlay the pebble floor (context 2042) and its associated occupation features over much of the ring-groove interior (illus 12). This third floor surface was composed of large, flat greywacke slabs 0.06m thick (context 009/2013/2034) and abutted the inner edge of earth and rubble bank (context 2007/2004).

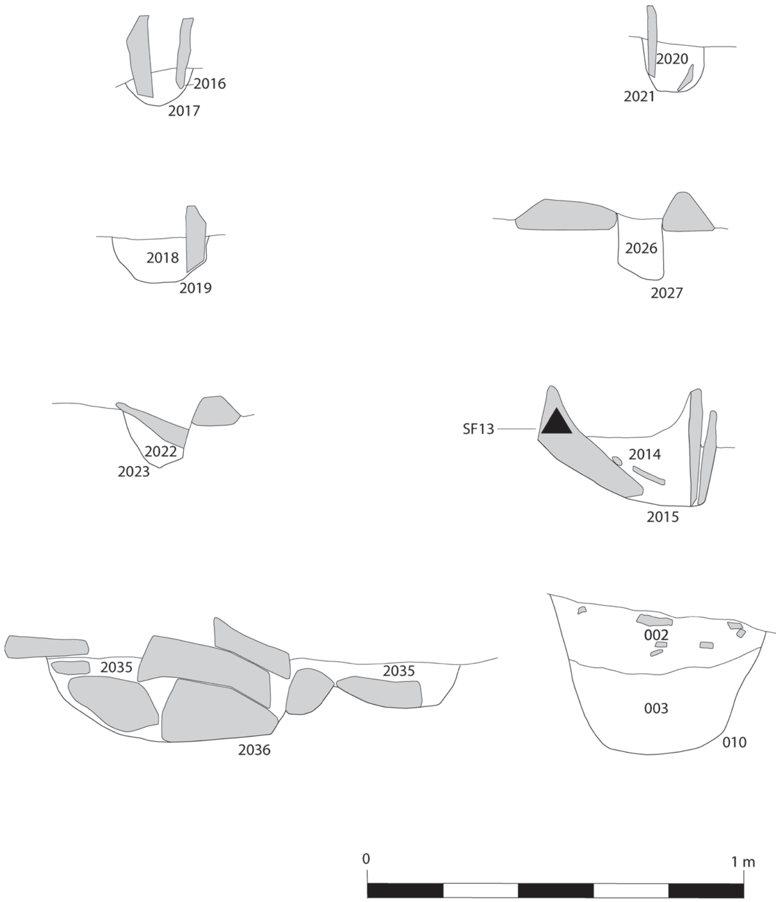
It is possible that this third phase was associated with the partial replacement of the north side of ring-groove (context 2025/2030) by another trench (context 2037; illus 8, 9 & 12), though with no great alteration to the overall diameter. This ring-groove (context 2037) truncated the inner edge of the previous ring-groove on its north side, and cut through the bank into underlying natural subsoil (context 2045) in the northern quarter. Though thin greywacke packing stones were recorded within this ring-groove, they appeared disturbed and it was not possible to define any specific stone-edged slot within the ring-groove trench that might indicate the width of the posts or planks set into it. The north-eastern course of the ring-groove appeared to develop into a series of post-holes (2017/2019/2021/2027), defining posts perhaps 0.06–0.10m in diameter (illus 11), before it reached the north limit of the paved gap (context 2009/033) at the eastern side of the structure. Another large post-hole (2054), containing large, angular vertically set greywacke packing stones that defined a 0.20m diameter post, but which perhaps replaced post-holes from previous phases (contexts 025, 027 & 034), formed the south-east terminal of the ring-groove (context 2006), which continued in use unaltered around the southern quarter. The individual post-holes within the course of this ring-groove were filled with silty sand (contexts 024/026/2016/2018/2020/2026) containing no charcoal.



Illus 10 Phase 2 plan of ring-groove

Overlying the stone paved surface (context 2009) that defined the eastern gap in the ring-groove and the eastern edge of the paved floor (contexts 009/2013/2034) belonging to this third phase of activity, was a clean clay surface (contexts 016/011/2046) that appeared to cover the entirety of the open space to the north-east of and outwith the ring-groove (illus 12 & 13). No features were apparent on the surface of this silty clay (context 011), which excavation demonstrated covered discrete pockets of rubble (contexts 019 & 020) that filled hollows in the underlying bedrock (context 032). The only artefacts to be recorded from the clay layer (context 011), immediately east of the stone paved surface (context 2009/033), were three lead beads (SF 3921.19.1–3) found together within the matrix of this layer.

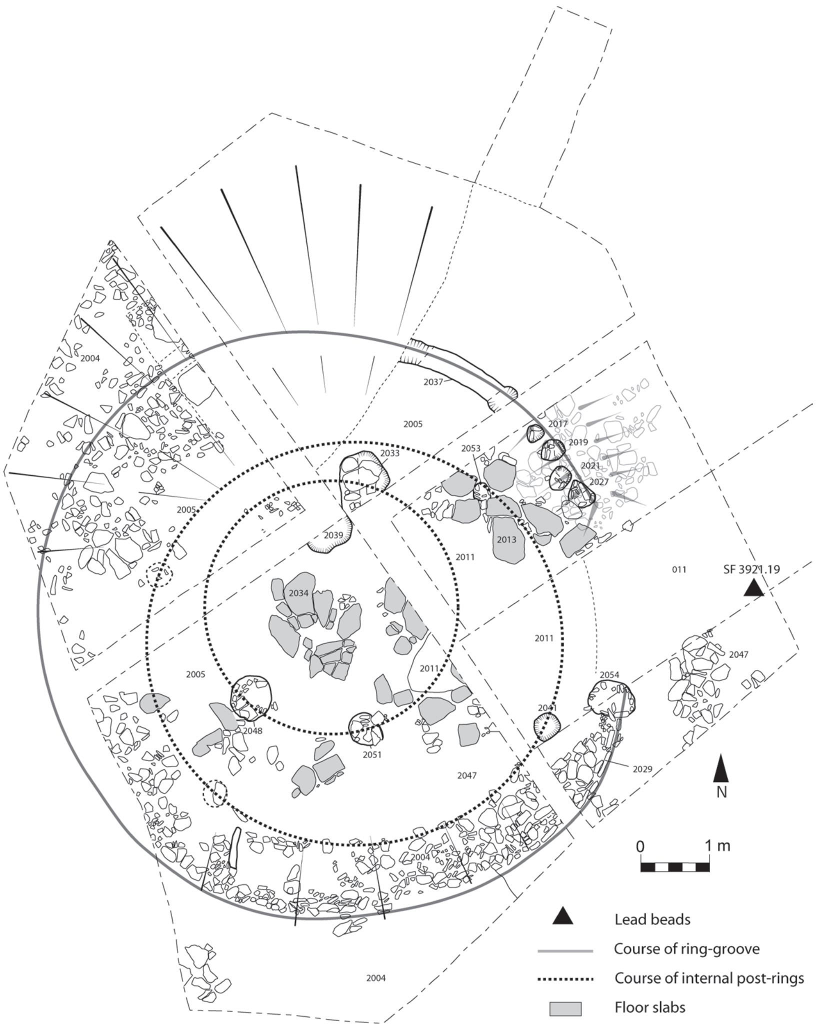
A silty clay layer (context 011/016) extended across the open space north-east of the ring-groove, apparently as far as the rampart and up to the entranceway to the site. Excavation of the entranceway revealed that this silty clay layer (context 016) was cut by a large square post-hole (context 010) (illus 13). This post-hole was filled with silty clay (contexts 002



Illus 11 Pit and post-hole sections

& 003), the secondary fill (context 002) yielding two fragments of fuel ash slag.

The rampart was composed of an earth bank (context 1004) of compact, moderately/poorly sorted, dark greyish brown sandy silt with moderate inclusions of small angular stones (illus 13 & 14). This appeared to be very similar to the natural subsoil (context 1013) but with less frequent inclusions of stones. This earthen dump rampart was up to 0.60m high above the original ground surface (context 1006) and 3m broad at its base (illus 14 & 15). No palisade trench or posts were apparent either within or under the bank. A thin, rubble spread (context 1003) was apparent running over the top of the inner (south-western) side of the rampart, similar to the rubble spread (context 1005) on the outer (north-eastern) face of the rampart that continued into the ditch that immediately fronted the rampart. A spread of rubble on the inner side of the rampart (context 1008) had apparently slipped some distance down the natural slope before the remaining deposit was consolidated by a drystone revetment (context 1007) that directly overlay it. This drystone revetment (context 1007) was the only structural feature apparent on the rampart and was two courses wide and two courses high. It comprised a base of large flat angular greywacke blocks topped by a rough course of smaller angular stones. The external ditch (context 1012) had a near vertical inner (south-western) side (illus 14) and a square cut profile. It measured 1.5m deep from the base of the rampart and had a flat base 1.75m wide. The base of the outer side of the ditch was just apparent at the northern edge of



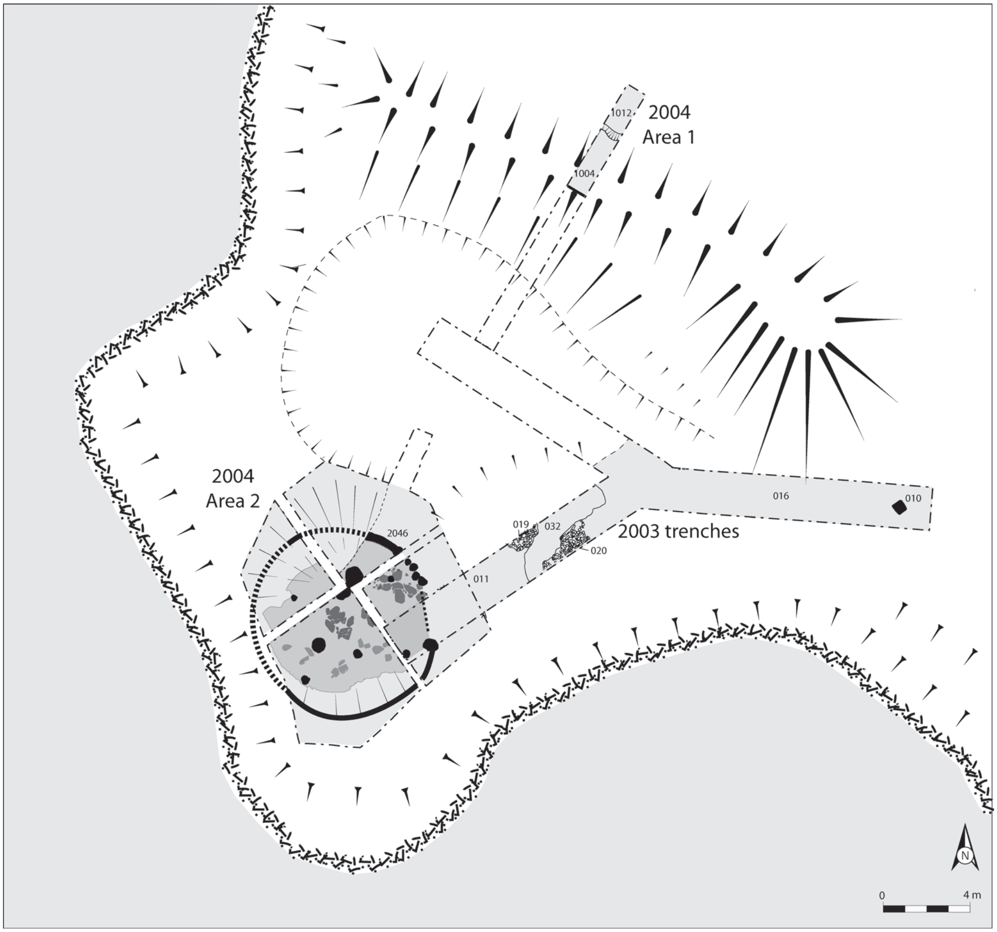
Illus 12 Phase 3 plan of ring-groove

the excavation trench. By extrapolation, assuming another near vertical side on its north-eastern side, the ditch appeared to be 3m wide at the top.

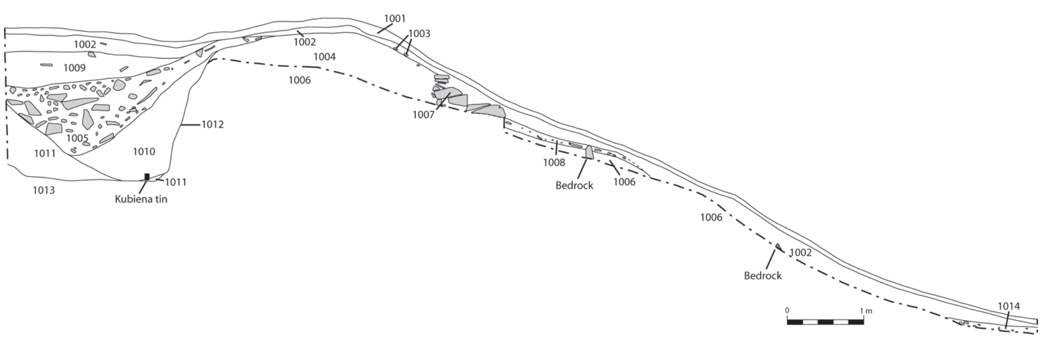
PHASE 4 RING-GROOVE, SECONDARY PLATFORM, RAMPART & DITCH

The stone slabs of the third floor surface within the ring-groove at the southern corner of the site had evidently been partially broken up to form the packing stones of post-holes belonging to a subsequent, fourth, phase of occupation (illus 16).

Post-holes (context 2015) and (context 2049) formed part of an inner post-ring on the same course as previously used around the centre of the ring-groove while Post-holes 2050 and 2052 were added to the post-ring around the interior edge of the earth and rubble bank (context 2004). The packing stones of Post-hole 2015 not only re-used slabs from the paved floor (contexts 009/2013/2034) but a saddle-quern composed of mica schist (SF 4225.13), that defined a 0.30m square post, subsequently filled with soft, very dark greyish brown sandy silt (context 2010) with charcoal inclusions. The packing stones of



Illus 13 Phase 3 plan of Carghidown



Illus 14 North-facing section of rampart and ditch

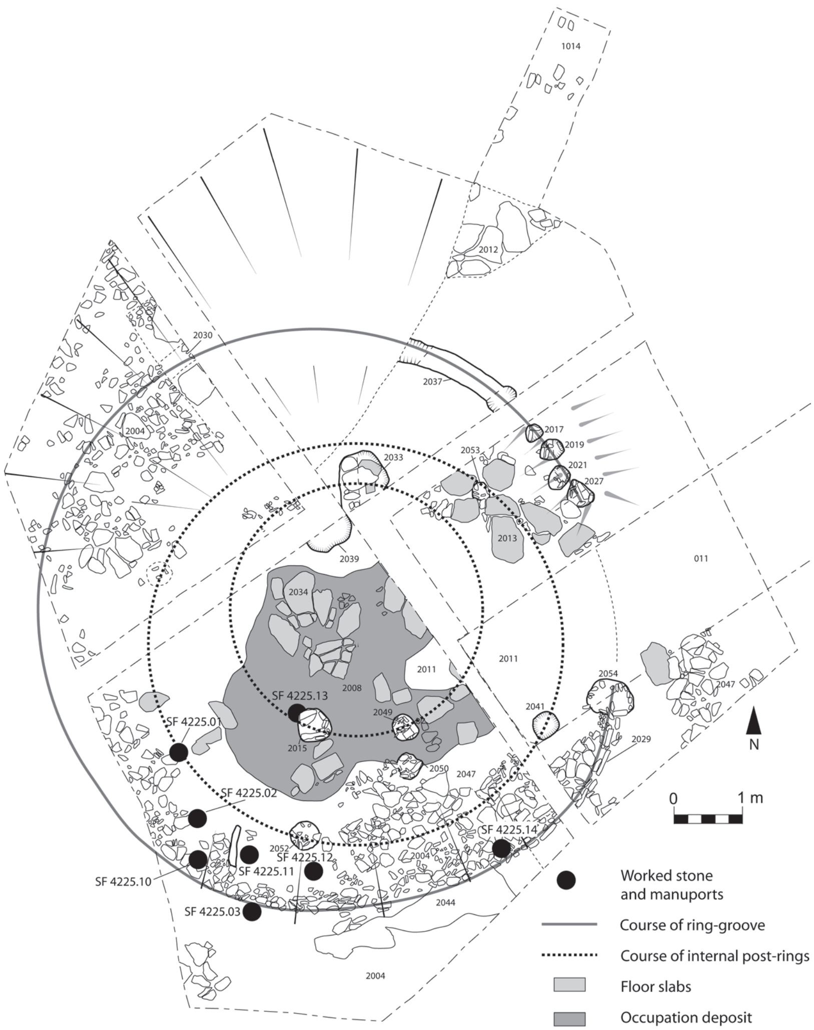
Illus 15 South-facing section of rampart

Post-hole 2049 of the inner post-ring defined a square post *c* 0.20m. The posts defined by the packing stones of Post-holes 2050 and 2052 were also of similar dimensions. There was no floor surface associated with these post-holes, however, as the vertical packing stones protruded 0.09m above the previous paved floor surface (contexts 009/2013/2034). Overlying the southern quadrant of the interior was a compact, dark greyish brown sandy silt layer (context 2008), 0.03m deep, with frequent inclusions of charcoal. A thin and partial spread of collapsed rubble from the earth and rubble bank (context 2004/2007) overlay this deposit and was itself sealed by a thick layer of leached subsoil (context 2002). Chipped stone artefacts comprising pounders, rubbers and a chiselled stone (SF nos 4225.01, .02, .03, .10, .11, .12 & .14) were recovered from the surface of the inner face of the southern part of the earth and rubble bank (context 2004). While these artefacts could derive from the earlier occupation phases, this could not be demonstrated and so these artefacts are attributed to the last phase of occupation identified.

The southern edge of the larger circular hollow, to the north of the ring-groove, was defined by a stone cap (context 2012) of extremely large flat greywacke stones and beach boulders excavated into the crown of the ring-groove earth and rubble bank (illus 16 & 17). Much of the *c* 10.5m diameter base of this hollow comprised a rubble spread (context 028/1014) of angular greywacke stones over 0.22m deep (illus 17). The rubble spread (context 028) was overlain by an intermittent silty clay deposit (context 013/014), similar in composition to context 011 but separated stratigraphically by Deposit 015, which appeared to represent slippage from the rampart and underlay the clay deposit (context 013/014) and overlay the silty clay layer (context 011). A layer of bedrock fragments (context 2044) capped the north-east and south sides of the earth and rubble bank enclosing the southern ring-groove. This material, which appeared to respect the primary and secondary ring-groove trenches (contexts 2030 & 2037), extended north across the rubble spread (context 028/1014) of angular greywacke stones that filled the larger northern circular hollow (illus 8, E–F).

A thin rubble spread was apparent on the inner (southern) side (context 1008) of the rampart (illus 14), where it had apparently slipped some distance down the natural slope before being consolidated by the drystone revetment (context 1007). Further deposits of slippage from the rampart overlaid the clay layer (context 011/016) covering the open zone and entranceway (illus 17). These deposits (contexts 015 & 021) comprised a layer of friable orangey brown sandy gravel mixed with small–medium angular stones.

The ditch outside the rampart was filled with a greyish brown primary silty sand deposit (context 1011), similar to the natural subsoil and apparently derived mainly from the outer side of the ditch, and a secondary deposit of greyish brown silty sand (context 1010) derived from the rampart above the inner side of the ditch and sealed by large unmortared greywacke stones (context 1003/1005), aligned either flat across or angled diagonally across the entirety of the ditch (illus 18) and again derived from above the rampart on the inner side of the ditch (illus 14). No finds were recovered from either the underlying ditch-fill deposits or the matrix of the rampart.



Illus 16 Phase 4 plan of ring-groove

PHASE 5 POST-ABANDONMENT

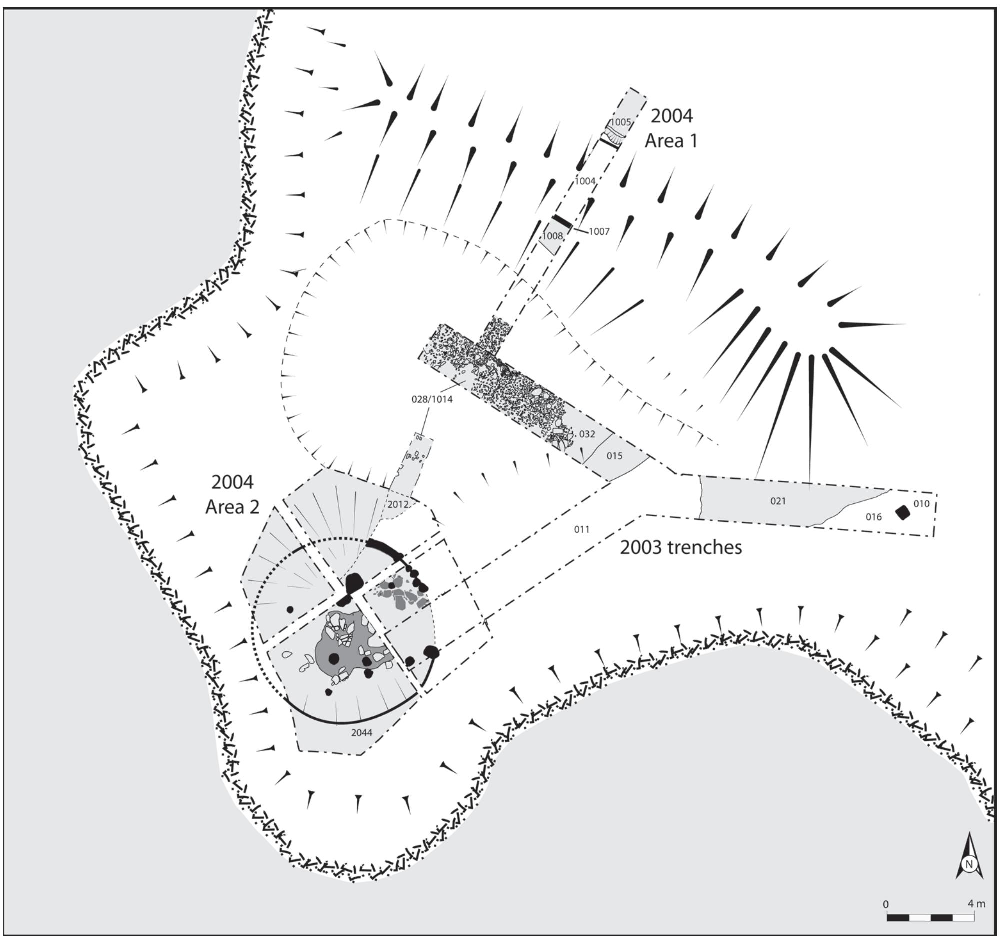
A deposit of angular stone rubble (context 007) mixed with a leached soil layer (context 006) containing a sherd of modern white china pottery, overlay the thin clay deposit (context 013/014) in the larger northern circular hollow.

The uppermost fill (context 1009) of the external ditch comprised a sandy clay layer (illus 14), which was sealed by a layer of leached subsoil (context 1002), containing worked stone and a concentration of modern iron nail fragments, the source of the anomaly identified during the geophysics survey (see above). This layer of leached, buried subsoil (context 1002/006/005/008/2002) overlay the entire site and underlay the turf and topsoil, which comprised soft dark brown humic silt with frequent bioturbation and a moderate amount of modern detritus, comprising iron nails, coal, glass, white china pottery, a button and a bullet case.

LEAD BEADS

Fraser Hunter

Three lead beads (SF 3921.19.1–3) were recovered together from the clay surface (context 011). The beads were well-sealed in this layer, and were found together just beyond the ring-groove wall, outside the entrance (illus 12). All are broadly similar, being barrel-shaped, slightly irregular in form, with a swollen centre and slightly narrowed



Illus 17 Phase 4 plan of Carghidown

ends (illus 19). They are hammered from rolled sheet around 1.5mm thick. Their form suggests they are beads rather than weights. One end of the most intact example (SF 3921.19.3) is blocked by a small separate piece of lead. Detailed descriptions are given below. There is little visible sign of surviving metallic lead, with the vast majority converted to powdery white corrosion products, probably cerussite (lead carbonate). Overlying this in places (most extensively on SF 3921.19.2) is a friable layer of darker corrosion. Surface XRF analysis indicated the beads were pure lead rather than an alloy such as pewter; no detectable trace of silver was noted.

CATALOGUE OF LEAD BEADS

SF 3921.19.1 The edges of the rolled sheet (T 1.5mm) are overlapped round *c* 25% of the circumference, ensuring they would not spring open. One end of the bead is intact, the other slightly damaged. Perforation D 4mm; L 17.5mm; D 9.5–10mm. Mass 5.53g.

SF 3921.19.2 The edges overlap around a quarter to a third of the circumference; part of the outer edge has been lost, and the ends are slightly damaged. Perforation D 4mm; sheet T 1.5mm; L 18.5mm; D 10.5–11mm. Mass 6.00g.

SF 3921.19.3 Slightly larger than the others, and intact apart from minor damage, with the edges overlapping around half the circumference. One (narrower) end is blocked by corrosion, while the other is blocked by a separate piece of lead within it. This is firmly set, and appears to be deliberately placed there. Perforation D 3.5–4.5mm; sheet T 1mm; L 21mm; D 9–10mm. Mass 4.49g.

LASER ABLATION PB ISOTOPE ANALYSIS OF THE LEAD BEADS

Vanessa Pashley, Jane Evans and Matt Horstwood

The three lead beads from Carghidown, and three control samples, one from Scotland and two from the Isle of Man, were received as a small project to undertake a laser ablation provenance study on the beads. The aim of the study was to assess, from the lead composition of the beads, whether the lead used in their production bore more similarity to Scottish or Isle of Man lead sources. The control samples comprised two fragments of Iron Age/Early Medieval lead slag from Cass ny Hawin (IOMMM Accession Number 1960-0028) and a sample of processed lead of positive provenance from the Leadhills in Southern Scotland.

Analysis of the Isle of Man sample and the Carghidown beads took place using a New Wave Research 266nm Nd:YAG laser ablation system attached to a VG Axiom MC-ICP-MS (multicollector inductively coupled plasma mass spectrometer). Samples were placed, in turn, into the laser sample chamber, and a small area of each was pre-ablated to remove any loose surface debris. Data were then acquired using the following laser sampling conditions: 75um spot, 4Hz, power range = 19–23%. A 10ppb solution of thallium was co-aspirated during each ablation to allow for the correction of instrument induced mass bias. For each analysis, 40 ratios were collected at three-second integrations. Each sample was analysed at least in triplicate.

The precision and accuracy of the method were assessed through repeat analysis of the matrix-matched NBS 981 ablation standard (NBS 981 wire), using the same laser sampling and acquisition procedures. The average values obtained for each of the measured NBS 981 ratios were then compared to the known value for this standard (Thirlwall 2002). All sample data were subsequently normalized according to the relative daily deviation of the measured standard value from the true. Normalization to an international standard in this way effectively cancels out the effects of slight daily variations in instrumental accuracy, and allows the direct comparison of the data.

The Leadhills sample was too large to be put into the laser sample chamber intact. It was therefore analysed in solution mode using the following procedure. A small section of the sample surface was cleaned by repeated applications of Teflon distilled 2% HNO_3. A *c* 0.05ml aliquot of the 2% HNO_3 was then placed on the cleaned area and left for five minutes. This aliquot was then pipetted off into a sample vial, diluted with further 2% HNO_3, doped with thallium and analysed by aspirating through a 50μl/min PFA nebulizer tip into a Cetac Aridus de-solvating nebulizer, attached to the MC-ICP-MS. The sample was analysed in duplicate, with each analysis comprising 75 ratios collected at five-second integrations. A 100ppb solution of NBS 981 (doped with 10ppb Tl), acted as the standard against which the sample data produced was normalized.

The result data are plotted on $^{206}Pb/^{204}Pb$ vs $^{207}Pb/^{204}Pb$ (illus 20) and also $^{207}Pb/^{206}Pb$ vs $^{208}Pb/^{206}Pb$

ILLUS 18 North-facing section of ditch

(illus 21). The most radiogenic samples were from the Isle of Man slag samples with the highest $^{206}Pb/^{204}Pb$ and $^{207}Pb/^{204}Pb$ ratios (illus 20). The least radiogenic was the sample from Leadhills and the three beads from Carghidown plotted between the control samples, but closer to the Scottish sample. The same pattern was repeated in the plot of $^{207}Pb/^{206}Pb$ vs $^{208}Pb/^{206}Pb$ (illus 21).

The results suggest that the beads have a closer affiliation to the Scottish Leadhills source of lead than the Isle of Man. However, this conclusion should be set in the context that there is considerable overlap in the fields of geological data (Parnell & Swainbank 1984; Haggerty et al 1996) from British ore fields and a firmer conclusion could be made only if better datasets were available for archaeological specimens. Unfortunately, such data are not currently available.

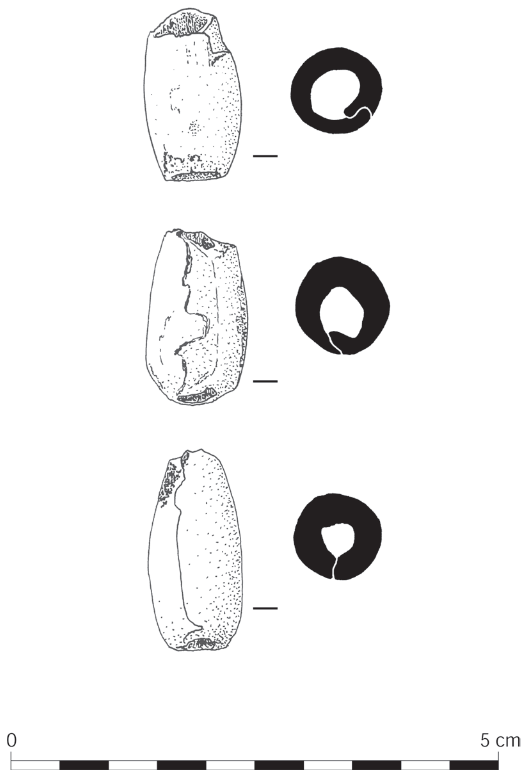
DISCUSSION OF THE LEAD BEADS

Fraser Hunter

The Carghidown beads are highly unusual in both material and form for the pre-Roman Iron Age (radiocarbon dates (see Duffy below) indicate a date in the period *c* 360 BC–AD 60). This discussion will first review Iron Age lead use and consider parallels for Carghidown before assessing the role of lead in early metallurgy in Scotland. The evidence for early mining in Galloway will then be examined. Finally, potential reasons for the beads' deposition will be discussed.

Lead objects are extremely unusual in the Iron Age; Table 1 lists the evidence known to the writer. There are dating difficulties, as most are old finds from poorly dated sites; thus some may be later intrusions, while dates gravitate to the Roman Iron Age because this is the most archaeologically visible period. However, apart from Carghidown, there are only two other securely pre-Roman instances of lead objects, from Howe (Orkney) and Laws, Monifieth (Angus). Otherwise it seems its use in any quantity arises from contact with the Romans, who made abundant use of lead: the lead-rich Iron Age sites (notably Traprain Law, East Lothian; Fairy Knowe and Leckie, Stirlingshire) all had extensive Roman contacts (MacKie 1982, 71; Hunter 1998a).

Other uses of lead should also be considered: as an additive to copper alloys to ease casting, as a crucial component of solder and as a handy form of fixing. Lead was used to secure iron objects, such as the fastening rods of massive terrets (eg Leeds 1933, 123) or the knife blade in an antler handle from Kilpheder wheelhouse, South Uist (Lethbridge 1952, 185); here too the evidence is apparently Roman-period or later. The use of solder has been little-studied, but Scottish examples again seem to be of Roman Iron Age date (eg the Deskford carnyx and the Lamberton cups; MacGregor 1976, nos 293, 295; Hunter 2001, 78). In any event solder, a specialist product which required access to tin, may not have been made locally. As for lead in castings, although leaded bronzes were common in the Late Bronze Age, they did not apparently play a major role in Iron Age metalworking. Dungworth's (1996, 402–3) synthetic study indicated that lead was a rare addition to northern British alloys; other work provides further examples, although generally from around the Roman period (eg Tate et al no date). Overall it seems that lead, while not unknown, saw little use until the Roman Iron Age, contacts with



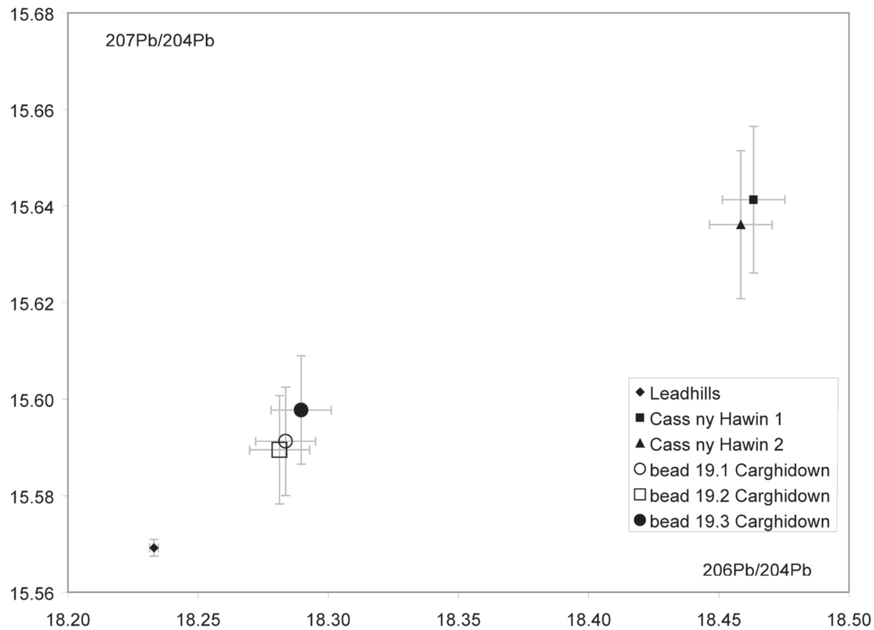
Illus 19 Lead beads; from top SF 3921.19.1, SF 3921.19.2 & SF 3921.19.3

Rome being the main source of material (though the caveat about dating bias should be borne in mind). Carghidown is thus a rare exception to the general pattern.

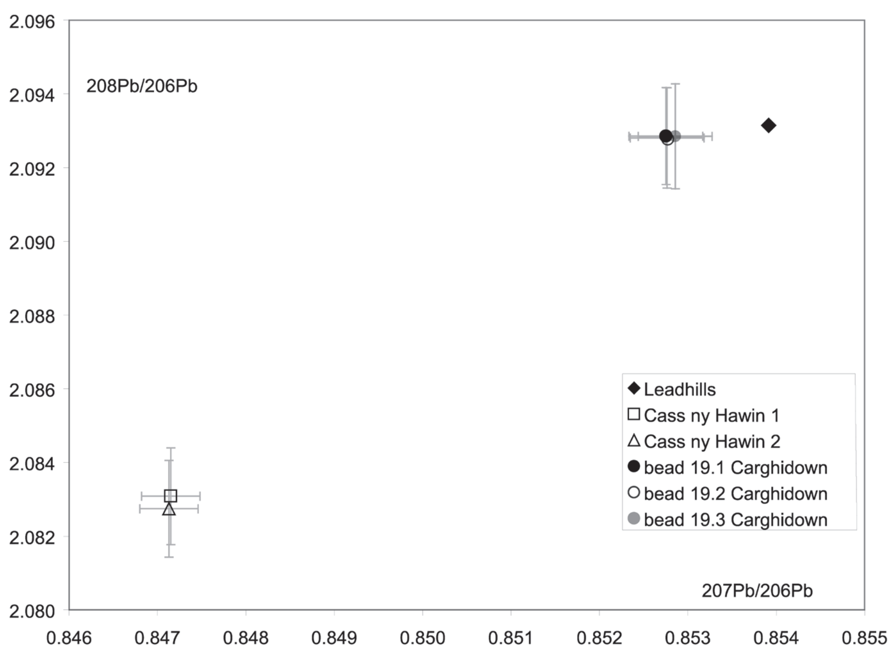
Lead was little used in ornaments. There are only two other examples of beads, from Lochspouts (Ayrshire) and Traprain (East Lothian). Neither are similar in form: they are annular D-sectioned rings, the high degree of finish suggesting they were beads rather than whorls (Munro 1882, 312; Curle & Cree 1921, fig 24 no 25). The range of lead objects is strongly functional, making use of the material's weight and malleability for weights and whorls. There are also a large number of enigmatic items, and plenty of manufacturing debris in the form of ingots, rods and offcuts. Morphological parallels for the Carghidown beads remain elusive. The form is not readily paralleled in the Iron Age, where beads (typically of glass or cannel coal and related substances) were generally discoidal or globular, and metal beads are all but unknown apart from the distinctive elements of torcs (MacGregor 1976, nos 198, 202, 204–5). Thus, in both material and form, the Carghidown beads are extremely unusual. However, they would be easy to make, and are likely to represent a local experiment with this unusual material.

Turning to the source of the lead, the isotope analysis report (Pashley, Evans & Horstwood above) hints at the Southern Uplands. This is supported by comparison to a wider range of published data (Rohl & Needham 1998, plot 16); the Carghidown results plot within the Southern Uplands field (albeit near the edge). Admittedly patchy evidence confirms the early use of Scottish lead ores: the isotopic analysis of Early Bronze Age lead beads from West Water Reservoir, Peeblesshire, and of a Roman ingot from Strageath, Perthshire, indicate use of Southern Uplands sources (Frere et al 1989, reinterpreted in Hunter 1998a; Hunter & Davis 1994; Rohl & Needham 1998, 111), while antiquarian records suggest prehistoric mining at Leadhills and Wanlockhead (Wilson & Flett 1921, 1).

Specific evidence for use of Galloway ores is less clear. Although there are extensive metal-rich deposits associated with the Cairnsmore granite intrusions at the head of Wigtown Bay (Wilson & Flett 1921, fig 6), there is as yet no evidence for their early use, although this is unsurprising given the general neglect of early mining studies in Scotland. Lead is known in a number of historic mines in the area, and in at least one instance (East Blackcraig), lead and copper co-occur (Wilson & Flett 1921, 48–51, 128–9). This is significant, as one potential context for the intermittent exploitation of lead would be when it was encountered and smelted experimentally in the course of copper mining. Here it is worth turning to a source much more local to Carghidown: the copper mine at Tonderghie, on the coast barely 600m south-east of the site. Wilson & Flett (1921, 128–9) recorded copper ores here, but Macleod (1986, 225) and Davidson (1795, 284) noted both copper and lead, and the latter is confirmed by local information: John Scouler of Tonderghie recalls that his father, the local minister, said the mine was reopened for lead during the Great War. This is highly suggestive, and the Carghidown beads are best seen as the results of local experimentation with the available mineral resources. There are indeed strong hints of early exploitation at Tonderghie, with tantalizing references to ingots (Davidson 1795, 285–6, 288); indeed a plano-convex bronze ingot is



Illus 20 $^{206}Pb/^{204}Pb$ vs $^{207}Pb/^{204}Pb$ plot of the data obtained for the control samples and Carghidown SF 3921/19 beads plotted as the average ± %2σ error for each sample



Illus 21 $^{207}Pb/^{206}Pb$ vs $^{208}Pb/^{206}Pb$ plot of the data obtained for the control samples and Carghidown SF 3921/19 beads plotted as the average ± %2σ error for each sample

TABLE 1
Lead objects d objects in the Iron Age. Unstratified and antiquarian finds from known Iron Age sites are included, except where clearly later (e.g. Dun Bharabhat, Lewis, where the small lead weight (Harding & Dixon 2000, 29) is from a post-occupation context and may well be a relatively recent fishing weight). A lead weight from the broch of Cinn Trolla, Sutherland appears to be associated with a later burial (Joass 1890, 100). Codes in the form NMS xxx are registration numbers in the collections of the National Museums of Scotland.

Site	*County*	*No of objects*	*Object range*	*Date*	*Reference*
W Grange of Conan	Angus	2	Weights/whorls	RIA	Jervise 1862, 497; NMS HD 44–
Carlungie I	Angus	10	Rod with fine perforated ends; strip fragments with turned ends, perhaps mounts	RIA	Wainwright 1963, 141, pl XXXV; NMS HD 1754–
Dalladies	Angus	1	Long rod with tapered ends	RIA	Watkins 1980, 157
Hurly Hawkin	Angus	3	Cup-shaped weight or mount; weight; mount?	RIA?	Henshall 1982, 231; NMS HHA 49–1
Laws, Monifieth	Angus	2	Cup-shaped weight or mount; melted waste	PRIA (well-stratified)	Neish 1860, 445; 1864; NMS GN 51
W Mains of Ethie	Angus	1	Sheet fragment	RIA	Wilson 1980, 121, no 23; NMS HH 931
Dun Mor Vaul, Tiree	Argyll		Weight / whorl	Phase 3 – RIA?	MacKie 1974, 132, fig 16 no 297
Lochlee	Ayr	1	'Round knob'	IA?	Munro 1882, 133
Lochspouts	Ayr	1	Bead or weight	RIA/EH	Munro 1882, 312; NMS HW 24
Traprain Law	E Lothian	39	Disc weights; whorls; ?beads; coiled strips; folded sheets ingots	Mostly RIA	Full details held in NMS
Dun Beag, Skye	Inverness	1	Folded sheet	IA? (also post-Roman finds from site)	Callander 1921, 125; NMS GA 1120
Cairngryfe	Lanarks	1	Domed container or mount	IA? (casual find)	Childe 1941, 217, pl LII; NMS HH 467
Hyndford	Lanarks	3	Weight or whorl; bar ingot; 'large mass … showing deep cuts' (not in NMS)	RIA	Munro 1899, 383; NMS HTA 100–

TABLE 1 (*cont*)
Lead objects d objects in the Iron Age. Unstratified and antiquarian finds from known Iron Age sites are included, except where clearly later (e.g. Dun Bharabhat, Lewis, where the small lead weight (Harding & Dixon 2000, 29) is from a post-occupation context and may well be a relatively recent fishing weight). A lead weight from the broch of Cinn Trolla, Sutherland appears to be associated with a later burial (Joass 1890, 100). Codes in the form NMS xxx are registration numbers in the collections of the National Museums of Scotland.

Site	*County*	*No of objects*	*Object range*	*Date*	*Reference*
Covesea	Moray	3	Whorls/weight (3 reported; only 1 in NMS)	RIA	Benton 1931, 201; NMS HM 183
Howe	Orkney		Stud	5th-3rd century BC (phase 4/5)	Ballin Smith 1994, 216–17
Edgerston	Roxburgh	2	Pattern for casting bronze openwork mounts; rod	IA / RIA?	HH 818–19
Fairy Knowe	Stirling	27	Weights, bars, sheet fragments, nodular waste, strip	RIA	Hunter 1998
Leckie	Stirling	?	Whorls, weights, lamps, ingots, lumps	RIA	MacKie 1982, 71
Carghidown	Wigtown	3	Beads	LPRIA	This paper
Dowalton	Wigtown	1	Weight	IA?	NMS HU 66

Abbreviations: L/P/R/IA, Late/Pre-/Roman/Iron Age; EH, Early Historic

known from Carleton, some 5km to the north-west (Curle 1932, 374; Whittick & Smythe 1937), the proximity suggesting it could be an alloyed product from these mines. It is generally (and plausibly) seen as Romano-British, although there is also Iron Age evidence for plano-convex ingots, notably from Edin's Hall in Berwickshire (Hunter 1999, 339–40).

None of this is conclusive, but it serves to create a web of potential contexts for the Carghidown beads. Intermittent early lead use is attested elsewhere in Scotland, while the exploitation of copper provides one avenue for the smelting of lead as a sideline or experiment; and the site sits in an area with evidence for mining. The beads are best seen as the result of experimentation with an unfamiliar and unusual but locally available material in the course of early mining and smelting activity at Tonderghie. Incipient use of a new metal often involved ornaments, even if the material's properties were better suited for other functions; this finds parallels in the earliest lead yet attested in Britain, again with an ornamental function, in the Early Bronze Age (Hunter & Davis 1994).

The final issue to consider is their deposition. They may of course represent casual loss, the breaking of a necklace while labouring in laying the clay. However, a number of factors raise questions over this, especially the location outside the entrance (a common spot for votive offerings), and the apparently deliberate blocking of the perforation on one of the beads, making loss in use unlikely. This suggests the possibility of other motives, notably that they may represent a deliberate deposit. In this interpretation, the location would be a deliberate reference to the earlier building, with its deposition in the clay layer both a closure offering for the old phase and a foundation offering for the new one, while the blocking of one perforation of a bead could represent the deliberate disabling of the beads. Similar evidence of foundation or closure deposits, often involving personal ornaments, can be noted elsewhere: for instance, the Roman brooch from the upper fill of the terminal of a ring gully at Carronbridge, Dumfriesshire (Johnston 1994, 250); the penannular brooch arguably built into the enclosure bank at Boonies, Dumfriesshire (Jobey 1974, 136–7); and the cannel coal bangle beside the causeway to the Barhapple crannog, Wigtownshire (Wilson 1882). The enigmatic Carghidown beads, as personal items and unusual objects, would be highly appropriate offerings in such a ceremony.

In summary, the Carghidown beads represent an important piece in the jigsaw of early metallurgy in Scotland. They are rare evidence of pre-Roman lead use, and indicate Late Iron Age exploitation of the Galloway metal ores and experimentation with the resources encountered.

COARSE STONE

Rob Engl

The excavation of Carghidown promontory fort identified a total of ten coarse stone artefacts. The artefacts were grouped according to morphology, use-wear and probable function. A detailed description of each artefact is given in the category sections below.

RAW MATERIALS

The site is situated within till deposits derived from a solid geology of Lower Palaeozoic greywackes and shales (Brown et al 1982). All the artefacts, comprising a saddle-quern, a polisher, a burnisher, a cut-marked stone, a worked stone, two hammerstones and three manuports, appear to be made of locally derived materials. The saddle-quern (SF 4225.13) is probably derived from one of the numerous granite intrusions found in Galloway and may have occurred as a glacial erratic.

CATALOGUE OF COARSE STONES

Saddle-quern SF 4225.13 (380mm × 300mm × 110mm lower end, 160mm high end) Context 2014 (post-hole fill within ring-groove; illus 11 & 16). This artefact was roughly fashioned on a large split boulder of granite schist (illus 22). The saddle-quern is roughly oval in shape with a flat base which would provide stability during use. The saddle-quern has a slightly narrowed raised face toward one end which flares out toward the other end. The working face of the artefact is slightly concave and has evidence of pitting in the central portion. This would have been repeatedly applied through the use of a hammerstone in order to aid the probable grinding of grain. A small band of smoothed wear caused by grinding is noticeable around the edge of the working face creating a slight lip. The artefact is at the smaller end of the size range of stationary saddle-querns (Engl forthcoming).

Cobble tools

Hammerstone SF 4225.12 (158mm × 78mm × 32mm). Context 2004 (earth and rubble bank of ring-groove). This artefact is made on an oval water-worn cobble of greywacke. Impact scars from heavy percussion are visible along the perimeter of a single end.

Hammerstone SF 4225.03 (185mm × 43mm × 19mm). Context 2004 (earth and rubble bank of ring-groove). Made on an elongated water-worn oval cobble of compact grey slate. This artefact has heavy use-wear scars from use as a percussion tool.

Burnisher SF 4225.02 (118mm × 38mm × 17mm). Context 2004 (earth and rubble bank of ring-groove). An elongated cobble of water-worn greywacke with patches of smoothed wear on both faces.

Polisher SF 4225.11 (96mm × 11mm × 7mm). Context 2004 (earth and rubble bank of ring-groove). Elongated plano-convex shaped fragment of compact slate. This artefact has a small crescent-shaped area of wear located on the ventral face of the stone at one end. The wear is smooth and measures approximately 22mm × 6mm. The wear is consistent with use as a polishing or burnishing implement and may have been used in the preparation of ceramics or leather.

Manuports

SF 4225.06 (104mm × 97mm × 8mm). Context 2009 (Stone paving at entrance to ring-groove). A circular water-worn cobble of greywacke with no apparent traces of wear.

SF 4225.10 (53mm × 32mm × 23mm). Context 2004 (earth and rubble bank of ring-groove). Small water-worn, oval cobble of quartz.

SF 4225.01 (120mm × 63mm × 17mm). Context 2004 (earth and rubble bank of ring-groove). Ovoid cobble of water-worn greywacke.

Though not worked, these items must have been brought onto the site by human agency.

Worked stone SF 4225.04 (152mm × 24mm × 18mm). Context 1002 (leached subsoil fill of ditch). Rectangular fragment of angular greywacke. The artefact is square in section with one end tapering to a chisel like point 25mm in width. It is possible that this artefact was used to work stone or wood. The cut marks on SF 4225.14 approximately fit the dimensions of the chisel point.

Cut-marked stone SF 4225.14 (240mm × 240mm × 52mm). Context 2004 (earth and rubble bank of ring-groove). Triangular slab of greywacke with three visible cut marks on one face. These marks have regular dimensions and are 25mm in length. They appear fairly shallow and there is little sign of crushing to the edges. All three marks appear to have been made by the same implement and have the same dimensions as the possible stone chisel SF 4225.04. The marks probably represent attempts at fashioning stonework for building material.

Discussion

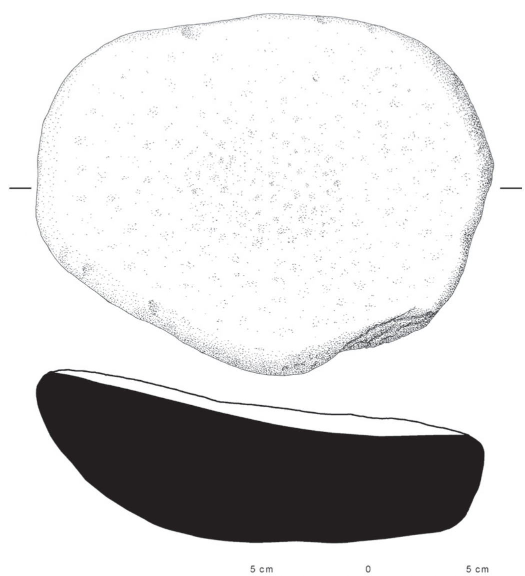
With one exception, all of the artefacts were associated with the ring-groove structure. Seven of these were recovered from the curvilinear earth and rubble bank; while a circular water-worn cobble (SF 4225.06) was retrieved from the entrance to the ring-groove, and the saddle-quern (SF 4225.13) was found as a packing stone within a post-hole in the south-west quadrant. The chisel (SF 4225.04) was recovered from the leached sub-soil covering the rampart and ditch (1002).

The coarse stone assemblage recovered from Carghidown is limited both in number and range of artefact types. A general later prehistoric date is assumed based on artefact typology and deposition.

The presence of objects such as the saddle-quern and burnisher suggest that tasks related to domestic settlement were carried out during the occupation of the ring-groove structure. The other artefacts are common utilitarian components of many prehistoric assemblages and were probably utilized in a wide range of tasks such as the dressing of building materials and the possible shaping of saddle-querns (Close-Brooks 1986, 175).

Unfortunately, when attempting a wider discussion of coarse stone assemblages of this type within the south-west of Scotland, one finds that it is very poorly served in terms of well recorded assemblages of this period. Excavations at the Late Iron Age sites of Rispain Camp, Whithorn (Haggarty & Haggarty 1983) and Hayknowes Farm, Annan (Gregory 2001) produced an even more limited number and range of such artefacts.

However, the coarse stone recovered from Carghidown is fairly consistent with many other later prehistoric assemblages derived from sites with evidence for roundhouse settlement throughout Scotland. The distribution of the majority of coarse stone artefacts within the ring-groove structure at Carghidown suggests a regular if not a necessarily deliberate pattern of artefact disposal being practised on site. Hill (1995) has suggested that the deliberate and structured disposal of Iron Age artefacts forms part of a wider set of beliefs. There are many examples within the wider Scottish archaeological record for the probable deliberate deposition of coarse stone tools within roundhouse deposits, for example, the saddle-querns set within pits and ditches at Sollas (Campbell 1991) and Kintore (Engl forthcoming).



Illus 22 Saddle-quern

Whilst it is tempting to see a special significance and ritual element to this repeated pattern of deposition, one should also bear in mind the utilitarian nature of these artefacts and the possibility of commonplace opportunistic re-use or disposal within contexts which would easily accommodate and make use of such items, such as post-holes and stone-built banks. It is just as probable that artefacts recovered from roundhouse banks such as at Carghidown represent an 'unconscious' treatment in which these artefacts were casually added to the general make up of the structure when finished with. Given the regionally diverse nature of the British Iron Age, more excavations in this area of Scotland will be required to determine any local patterns of distribution and deposition.

MISCELLANEOUS MODERN FINDS

Ronan Toolis

A number of artefacts, dating to no earlier than the 19th century, were found in the topsoil and leached subsoil layers that overlay the archaeological remains at Carghidown. These included glass shards, white china sherds, a copper alloy button, a modern bullet case and several iron nails distributed across the site, including a number of nails overlying the ditch that gave a notably strong signal during the geophysics survey (see above).

Given the apparent lack of recent occupation or activity at Carghidown, particularly the absence of ploughing within the site, the considerable number of modern artefacts within the topsoil was initially rather surprising. While it is probable that most of these artefacts are chance losses from agricultural activities or perhaps the result of manure spreading in the adjacent field, it may be that some of the glass and china fragments found within the interior of the site were dropped by picnickers that may have frequented the spot, given the obvious local knowledge of this diminutive site (Davidson 1795, 287; McIlwraith 1877, 62; McKerlie 1906, 417), and the sheltered disposition of the southern ring-groove hollow recognized during the excavation.

CHARCOAL

Alan Duffy

Charcoal samples from seven soil contexts were analysed, all of which were associated with the ring-groove (Table 2). Four species were present, hazel (*Corylus avellana*), ash (*Fraxinus excelsior*), oak (*Quercus* sp) and heather (*Calluna vulgare*), of which hazel (*Cor. avellana*) was predominant, representing 68.5% of the assemblage. The material showed little sign of post-depositional disturbance.

Charcoal, deriving from short-lived material, was selected for radiocarbon AMS dating of single entities from three contexts: the earth and rubble bank surrounding the ring-groove (context 2004/2007), and the occupation deposit (2008) and post-hole fill (2010) from the last phase of the ring-groove. These features, representing early and late occupation phases of Carghidown, were prioritized for dating. As Table 3 illustrates, the radiocarbon dates place the occupation of the ring-groove firmly within the pre-Roman Iron Age.

DISCUSSION

The assemblage was too small to allow comment on wood use within the site. It is possible that the hazel roundwood represents the remains of hurdles, used as screens in the roundhouse, but equally it could be fuel debris, as could all the other species found.

SOIL CHEMISTRY

Robin Inglis

The characterization and comparison of the different sediments within a site can allow some degree of interpretation on their depositional history.

All sampled contexts were subjected to four analyses, using soil in a field moist condition. pH was determined in a 1:2.5 soil to distilled water mixture. Loss on ignition (LOI) used *c* 10g oven-dry soil ignited to 400°C for four hours. Determination of phosphate used a spot test for easily available phosphate (Hamond 1983). Calcium carbonate content was assessed semi-quantitatively using a simple field test and the samples assigned to the classes based on Hodgson (1976, 57).

The samples retrieved from Carghidown had unfortunately very homogenous chemical properties that make anthropogenic trends difficult to define. The easily available phosphate content was low and the calcium carbonate content was zero in all of the samples tested. The pH of the samples examined was mildly acidic to neutral.

It was the organic content, produced through LOI, which produced the only set of results worth comparing. The spread of LOI results showed quite drastic and localized variation, mainly between the low organic ditch and rampart fills and the high

Table 2
Charcoal identified at Carghidown

Context	*Feature*	*Species*	*No. of IDs*	*Comments*
2002	Leached subsoil over ring-groove (Phase 5)	*Corylus avellana*	3	Small angular fragments, 50% roundwood (*Corylus*)
		Quercus sp	4	
2004	Earth and rubble bank around ring-groove (Phase 1)	*Corylus avellana*	3	Small angular fragments. 30% roundwood (*Corylus*)
		Calluna	3	
2005	Floor foundation base of ring-groove (Phase 2)	*Corylus avellana*	3	Small angular fragments
		Fraxinus excelsior		
2006	Fill of ring-groove (Phase 3)	*Fraxinus excelsior*	2	
		Corylus avellana	2	Small angular fragments
2007	Earth and rubble bank around ring-groove (Phase 1)	*Fraxinus excelsior*	1	Very small angular fragments Very small to small angular fragments. 50% small roundwood (Corylus)
2008	Ring-groove occupation deposit (Phase 4)	*Fraxinus excelsior*	2	
		Corylus avellana	8	
2010	Ring-groove post-hole fill (Phase 4)	*Corylus avellana*	3	Very small angular fragments
2035	Fill of pit at centre of ring-groove (Phase 2)	*Calluna*	1	
		Corylus avellana	4	Very small angular fragments

organic deposits within the ring-groove deposits. Overall this ranged from 1.5% (from context 1013) to 19.2% (from context 2001 2C), with an average of 6.21%. From the combined phases of works there were 39 samples which fell into the non-humose (0–7 %) category and 21 samples with a humose (7–25%) classification. This high ratio of humose to non-humose indicates a good preservation environment for organic deposits and therefore may indicate a true and representative set of organic content results.

DISCUSSION

The majority of the samples were derived from the ring-groove, with others coming from the base of the possible northern roundhouse and the rampart area.

The material pertaining to the rampart showed no chemical anomalies; with non-humose organic content and mildly acidic pH. The lack of organic material found within the ditch deposits, combined with any other chemical evidence, may suggest that the ditch was either not open long enough for a primary silting/infilling event to take place, or that it was consistently cleaned out before eventually being backfilled. The poor environment for preservation of phosphate and calcium carbonate may allude to poor preservation conditions rather than a lack of initial material, but given the organic preservation elsewhere this may not be the case.

The results from the base of the possible roundhouse at the north part of the interior indicated a high organic content and low pH. The high LOI results came from the dumped or overlying material (as described by the excavator), as would be expected from the inclusion of in-washed or active organic material, and the low pH was derived from the increased humic acid produced by this.

While more abundant samples were taken from the ring-groove, detailed conclusions are difficult to substantiate due to the homogenous nature of the results. Calcium carbonate was zero from every sample, which may be due to the consistently mildly acidic nature of the sediments. The negligible pH was the result of the natural acidity of the underlying 'C' horizon and solid geology, from which the fill sediments were derived. The phosphate content of the samples was also zero. The negligible phosphate content results from within the ring-groove may not be the result of a lack of phosphate-producing activities on site (burning, animal husbandry, rubbish dumping), but probably the result of the lack of a suitable phosphate-preserving environment within this part of the site. This may be due in no small part to the location of the ring-groove, in a hollow next to a cliff face, which may have allowed excessive leaching of water from the surrounding landscape.

However, the LOI results from the ring-groove do allow some interpretation through the few anomalies which occurred. Of the deposits which gave a humose level of organic content, contexts 001 and 2001 were topsoil. Contexts 006 and 008 comprised a rubble/post abandonment deposit immediately under the topsoil, which if a collapse layer could have included organic material trapped between the stones. The only other sample that did not come from the possible occupation deposit (context 2008) within the ring-groove was the fill (context 2035) of the central pit (context 2036) within the ring-groove. This pit also included some fire-cracked stones, which combined with its location may indicate that this was a central hearth/cooking pit, the organic content being the remainder of fuel and/or cooking debris. The sample, however, did not carry any phosphate residue but, as mentioned above, this could be due to the leaching of phosphates through the soil profile.

A number of special samples (SS8-SS20) were taken from a surveyed grid across the ring-groove including, in particular, occupation Deposit 2008, allowing a spatial comparison of the occupation layer of the structure (illus 23). Of those special samples, numbers 8, 9, 10 and 13 were humose. The distribution of these samples is significant, as three of them (nos 8, 9, and 10) were located within the central

Table 3
Radiocarbon dates from Carghidown

Lab code	*Context*	*Feature*	*Species (charcoal)*	*Years BP*	*δ¹³C (‰)*	*Calibrated 1 sigma*	*Calibrated 2 sigma*
SUERC-7294	2010	Ring-groove post-hole fill (Phase 4)	*Corylus avellana*	2090 ± 35	–26.6‰	170–50 BC	210 BC–AD 0
SUERC-7295	2008	Ring-groove occupation deposit (Phase 4)	*Corylus avellana*	2145 ± 40	–25.8‰	350–100 BC	360–50 BC
SUERC-7296	2004	Earth and rubble bank around ring-groove (Phase 1)	*Corylus avellana*	2030 ± 35	–26.8‰	90 BC–AD 30	170 BC–AD 60
SUERC-7300	2004	Earth and rubble bank around ring-groove (Phase 1)	*Corylus avellana*	2125 ± 35	–26.6‰	210–90 BC	350–40 BC
SUERC-7301	2007	Earth and rubble bank around ring-groove (Phase 1)	*Fraxinus excelsior*	2035 ± 35	–24.9‰	100 BC–AD 20	170 BC–AD 60

zone, adjacent to the area where the central hearth/cooking pit (context 2036) had been present during an earlier phase of occupation. This suggests that this area may have continued to be used for organic material preparation. Alternatively, there may have been an internal division of organic material located along the line between SS10 and SS9.

SOIL MICROMORPHOLOGY

Lynne Fouracre

Kubiena samples were taken from the south-west facing baulk section of the ring-groove (contexts 2004 & 2011; illus 8) and the north-west-facing section of the primary and secondary fills within the ditch (contexts 1010 & 1011; illus 14). These samples were taken because the sedimentary and depositional history of these archaeological sediments could not be determined through field observations and it was hoped that micromorphological analysis could help. Pedofeatures typical of dumped sediments include coarse simple packing structures, defined boundaries between units and minimal faunal mixing, although it should be noted that these features can also be produced by other processes. In addition, it is possible to compare the observed pedofeatures to those preserved in-ditch fills in the experimental earthwork project at Overton Down as these are useful analogues for stages of ditch filling under natural conditions (Macphail & Cruise 1996).

The samples were prepared for analysis using the methods of Murphy (1986) and analysed using the descriptive terminology of Bullock et al (1985). The sample was prepared at the University of Stirling in the Department of Environmental Sciences. Detailed descriptions of each thin section are provided in the archive report.

RESULTS FROM THE RING-GROOVE

The thin section from the south-west-facing baulk section of the ring-groove (illus 8) consisted of two main units, Unit 1 comprising the sediment of the earth and rubble bank around the ring-groove (context 2004), and Unit 2 comprising the floor foundation base of the Phase 3 ring-groove occupation (context 2011).

The sediment comprised poorly sorted silt with a poryphoric and gefuric packing structure. The porosity was locally variable and up to 50% with randomly oriented plane voids. The fine fraction was dark reddish brown in plane polarized light (PPL) with an undifferentiated birefringence fabric and consisted of granules and aggregated blocky peds. The high organic content of context 2004, the earth and rubble bank around the ring-groove, was responsible for the domination of the brown, dark brown, dark reddish brown and black matrix colours and for its isotropic nature in cross polarized light.

The coarse mineral component accounted approximately 35% of Unit 1 (context 2004) and was dominated by quartz with occasional feldspar. Unit 2 (context 2011) had a higher coarse mineral component of approximately 50%.

Exotic components existing in the sample were represented primarily by plant remains, both charred and uncharred, accounting for approximately 10% of the total soil sample. The remainder of the organic constituent was represented by organic-rich clasts, dark brown cellular organic fragments, charcoal and single-celled structures. Some of the charcoal fragments were quite large and survived up to 2mm in diameter. Several partially decomposed linear plant fragments up to 600μm in length were present, yellow in PPL. Also present were several amorphous masses of bright orange organic material up to 2mm. Occasional grey siliceous material was present, although it was not possible to identify species. There were also small charcoal fragments within the general matrix.

A number of the pseudomorphic voids contained well-rounded organic clasts that possibly represent biological excrement. In addition, several of the voids were stained with a thin orange deposit.

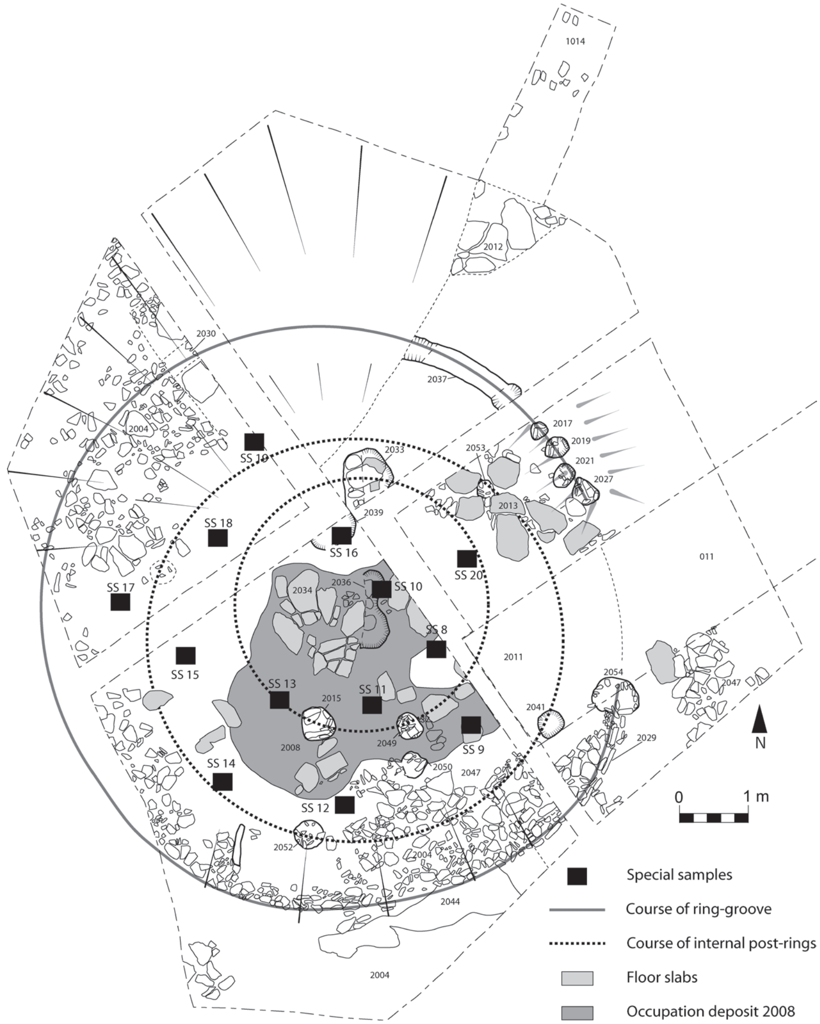
The boundary between Unit 1 and Unit 2 was diffuse and was distinguished by a higher coarse to fine ratio and a denser packing structure in Unit 2.

The basic composition of the fine fraction was similar to the upper soil but with some variation in the relative abundance of components. The number of voids decreased lower in the profile. The lower organic content and higher coarse mineral content give Unit 2 a yellowish brown colour in PPL.

RESULTS FROM THE DITCH

This thin section consisted of three main units: Unit 1 comprising the secondary ditch fill with rock inclusions (context 1010), Unit 2 comprising a lens of silty clay ditch fill (context 1010) and Unit 3 comprising primary ditch fill (context 1011).

The sediment was poorly sorted silty sand with a coarse simple packing structure. The porosity was up to 20% with planar and spongy voids and vughs. The fine fraction was orangey brown in PPL with a



Illus 23 Spatial distribution of soil samples

crystallitic birefringence fabric but low birefringence colours. The coarse component accounted for approximately 40% of Unit 1 and was dominated by feldspars and greywacke. There were several large greywacke rock fragments up to 11mm in diameter randomly oriented. Within the fine fraction were lenses of different coloured material although they appeared to be both randomly distributed and oriented.

Exotic components existing in Unit 1 were represented primarily by charcoal fragments, which contributed to approximately 10% of this unit. The remainder of the organic component was represented by dark orangey brown cellular and fibrous organic components. There were zones of both charred and uncharred amorphous organic matter.

There were also a number of small charcoal fragments within the general matrix. The densest concentration of charcoal was at the top left of the slide up to 300μm.

The boundary between Units 1 and 2 was clearly defined by a thin organic-rich orange layer. Unit 2 consisted of a mineral-rich yellowish grey silty clay with low porosity (<2%) and a crystallic birefringence fabric. The coarse component comprised approximately 35% of the unit. Unit 3 was similar to Unit 1 but contained fewer large rock fragments and had a lower porosity. There was a preferred orientation of some of the coarse sand sized mineral grains and rock fragments towards the vertical/near vertical.

DISCUSSION

The ring-groove

It was hypothesized that context 2004 represented the rapidly collapsed sediments of the earth and rubble bank surrounding the ring-groove and the sample under discussion was taken to verify the nature of this soil and, if possible, determine its rate of accumulation.

Micromorphological evidence for processes of sediment deposition may be obtained from fabric and structural properties in thin sections which describe the relative distribution and organization of the sediment components. In this instance a moderate level of biological activity was apparent as the deposition of the sediment had partially re-worked the original microstructure of the sample. Preservation of organic plant material was relatively high and a number of local variations in colour and texture indicated that the soil had not been completely reworked.

All inclusions in the sample were randomly oriented and there was no indication of layering or gradual sediment build up. There were no features within this deposit that would suggest it was constructed during more than one episode. As the boundaries between the two units were diffuse, it is not possible to comment on the rate of accumulation of this deposit.

The ditch

The primary and secondary ditch deposits were very similar to the composition of the dump rampart, both being moderately sorted mid greyish brown silty sand with frequent inclusions of small angular stones and as such probably derived from slippage of rampart material into the ditch.

A sharp, smooth boundary between two anthropogenic units can indicate a marked change in human activity (Courty et al 1989). Several lines of evidence suggest that Unit 3 (context 1010) did not gradually accumulate in the ditch through the natural process of silting-up. The absence of clasts indicates that the unit was not subject to faunal mixing following deposition and as such may have been rapidly redeposited. The relatively clean nature of context 1010 and the sharp boundary between it and context 1011, the primary ditch fill, may indicate that context 1010 was dumped. Additionally, the deposit contrasts with fill sequences observed elsewhere such as Overton (Cruise & Macphail 1996) and Easton Down (Macphail 1993) where banded fills (Overton) and homogenous fills (Easton Down) suggest a natural infilling over a lengthy period of time.

Whilst it is not possible to surmise exactly how long it took for the sediment to accumulate in the ditch, a number of inferences can be made. The primary fill appears to have been laid down relatively rapidly, although a degree of sorting suggests that the heavier material may have been deposited first. The silty clay deposit at the base of the secondary ditch fill suggests that fine clays and silts may have translocated down the profile following deposition, or that they were deposited during an initial phase of silting up or slippage following the deposition of the primary fill but before the accumulation of the majority of the secondary fill.

Experimental research at Overton Down (Bell et al 1996) has provided insight into the transition between primary and secondary fill in ditch deposits left to infill naturally. Primary ditch fill is typically dominated by material derived from weathering and collapse of recently exposed ditch sides, and the secondary fill originates from the surrounding catchment. The ditch sediment at Overton revealed banding ascribed to winter sedimentation of scree material and soil deposition in summer forming an annual banded sequence. Neolithic ditch fills from Easton Down revealed soil to have been homogenized over time and decalcified soil to have been integrated with the fine fabric of the ditch soil (Macphail 1993). In contrast to these examples, the ditch sediment from Carghidown is a deposit showing features of dumping and settling as demonstrated by the coarse simple packing porosity between large clasts which appears to have become loosely infilled with finer material as the dumped material has settled.

In conclusion, the field and micromorphological evidence appears consistent in indicating a rapidly deposited ditch fill. The microstructure of the sediment indicates that it was dumped rather than accumulated under natural agencies. It is not possible to establish a precise rate of deposition but the clear boundary between units and orientation of inclusions suggests that a rapid accumulation rate is probable.

DISCUSSION

Despite the limited resources that enabled only partial excavation of Carghidown, a sufficient amount of evidence has been recovered to provide some insight into the nature of the occupation of this promontory fort.

The primary feature within Carghidown was the ring-groove, the structural form of which is consistent with other ring-groove roundhouses investigated in Dumfries and Galloway. The packing stones within the Carghidown ring-groove indicated that its wall mainly comprised continuous upright planks *c* 0.08m thick. Only at the north side of the entrance, within the third and fourth phases of occupation (illus 12 & 16), was the ring-groove defined by a series of individual posts perhaps 0.06–0.10m in diameter. A combination of plank walling and individual posts was also observed within the large roundhouse excavated at Rispain Camp (Haggarty & Haggarty 1983, 34), while at Cruggleton Castle the roundhouse appeared to have first comprised individual posts, presumably holding in place a wattle wall, before being replaced with a continuous upright wall (Ewart 1985, 12). Upright timber planking was a common form for the outer walls of roundhouses in south-west Scotland, with examples from as early as the latter half of the second millennium BC (ie Ross Bay: Ronan & Higgins 2005, 55–7), the first millennium BC (ie Long Knowe: Mercer 1981, 50 & 67) and into the early first millennium AD (ie Boonies: Jobey 1975, 122–8).

Large posts defined the terminal of the two phases of the ring-groove wall north of the entrance at Carghidown. An opposite post was clearly demonstrable on the south terminal only within the third phase of occupation, but it is likely, given the irregular pattern of packing stones here, that this had disturbed the remains of earlier posts on the same place. The ring-groove entrance would appear to have been between 3.2m wide during the early phases of occupation and 2.6m wide during the later phases of occupation. A similar pattern and width of entrance was observed at Rispain Camp where large posts defined the terminals either side of both entrances into the large ring-groove roundhouse (Haggarty & Haggarty 1983, fig 10). Similarly, the ring-groove terminals at Boonies were commonly defined by large posts though here the entrances were narrower (Jobey 1975, 128). It might also be noted that as with Carghidown, no post-holes defining a porch were evident at Rispain Camp or Boonies either, in contrast to other roundhouses in the region such as Hayknowes (Gregory 2001, 36) and Ross Bay (Ronan & Higgins 2005, 54).

Excavated ring-groove roundhouses in Dumfries and Galloway range from 4m in diameter such as Hut 10 at Long Knowe (Mercer 1981, 48) to 15m in diameter such as Building 4 at Carronbridge (Johnston 1994, 247). With a 9m diameter, the circular ring-groove at Carghidown falls close to the centre of this size range, in a cluster including Cruggleton Castle (Ewart 1985, 12), Ross Bay (Ronan & Higgins 2005, 54–5), Uppercleuch (Terry 1993, 60), Burnswark (Jobey 1978, 76), hut circles 7 and 9 at Long Knowe (Mercer 1981, 49), Woodend (Banks 2000, 230–5), Boonies (Jobey 1975, 127–9) and Moss Raploch (Condry & Ansell 1978, 105). However, the upstanding nature of the earth and rubble bank into which the Carghidown ring-groove had been cut, presumably to help anchor the outer wall, and the preservation of interior surfaces revealed that the actual floor surface was only *c* 6.4m in diameter. This reflects in a way Moss Raploch (Condry & Ansell 1978, 105), where a thick stone wall defining an external diameter of *c* 8m enclosed an interior surface 5.5m in diameter. Given the plough truncated nature of many excavated roundhouses, the implication of the evidence from these two partially upstanding sites is that the actual surface of the living space within a ring-groove may be considerably less than that measured simply from the external diameter. Calculations of interior floor space from external diameter alone (eg Jobey 1975, 27–130), while useful for comparing probable relative floor spaces between roundhouses, may not reflect the exact floor spaces available.

A post-ring, 6.1m in diameter, not entirely concentric with the ring-groove, was evident close to the interior edge of the ring-groove bank and was composed of at any one time at least four posts each between 0.12m and 0.20m in diameter, though it should be noted that not only the baulks, but the unexcavated north-western part of the roundhouse, may have masked further posts belonging to this post-ring (illus 10, 12 & 16). The ratio between the diameter of the ring-groove and this post-ring was 1:0.678, not significantly different from Hill's optimum ratio of 1:0.707 (Hill 1984, 81) and which adheres to a common pattern amongst roundhouses in Dumfries and Galloway (Condry & Ansell 1978, 106; Haggarty & Haggarty 1983, fig 10; Ronan & Higgins 2005, 54; Cook 2006) as elsewhere, of post-rings being quite close to the outer wall line (Hill 1984, 80).

Another post-ring, 3.8m in diameter, was evident around the central area of the ring-groove interior and comprised posts between 0.20m and 0.30m in diameter. Though only three posts of this post-ring were revealed at any one phase, the unexcavated baulks may have obscured further posts belonging to it. This inner post-ring is more unusual within Dumfries and Galloway, the only comparable example being the large roundhouse at Rispain Camp, which possibly possessed a similar inner post-ring, unfortunately truncated by Barbour's earlier excavation trenches and modern field drains (Haggarty & Haggarty 1983, 35 & fig 10). However, sufficient numbers of roundhouses with three concentric structural rings are known elsewhere in Southern Scotland and Northern England (Reynolds 1982, 49–50) to allow for it at Carghidown.

Given their diameter, compared to the general width of the ring-groove wall, the posts of the two post-rings at Carghidown appear to have been load-bearing, necessary to support the ring-beams needed to exert an outward pressure against the roof (Reynolds 1982, 51). The greater size of the post-holes of the inner post-ring would be consistent with the greater length of posts required to bear the weight of a ring-beam close to the apex of the roof. Following Hill (1984, 80), the outer post-ring perhaps was the primary load-bearing structure for the roof, although it may also have conceivably supported an upper floor as envisaged for outer post-rings at other roundhouses where three concentric structural rings are demonstrated (Reynolds 1982, 50–3). The continuous plank walling of the ring-groove outer wall was presumably sufficient merely to anchor the roof beam ends and withstand the elements.

At Carghidown the admittedly limited exposure of the underlying natural subsoil below the ring-groove indicated that the ground had been excavated down to subsoil prior to the formation of the earth and rubble bank, which probably derived from this same landscaping process, as envisaged at Broxmouth (Hill 1982, 173). A similar process of site clearance down to subsoil was observed at Woodend (Banks 2000, 248). Material had then been added to level the interior. This was also observed at Teroy Broch (Curle 1912, 186), Moss Raploch (Condry & Ansell 1978, 107) and the undated enclosed settlement at Chippermore a few miles to the north of Carghidown (Fiddes 1953, 153). This is also reminiscent of the scooped settlements in eastern Dumfriesshire (Jobey 1971, 87; Terry 1993, 53).

Although hazel, ash, oak and heather are potential constituent materials of the Carghidown ring-groove, the charcoal assemblage was too small (see Duffy above) and the contexts too insecure to differentiate between potential structural timber and fuel. However, given that oak and hazel were present within the Cruggleton ring-groove (Ewart 1985, 14) while oak, hazel and ash charcoal were also present within both ring-grooves at Rispain Camp, including part of an oak plank (Haggarty & Haggarty 1983, 34–40), it seems nonetheless plausible that structural elements of the Carghidown ring-groove may have been composed of these materials.

The occurrence of comparably well preserved successive pebble and stone slab floors within the interior of the ring-groove at Carghidown is due more to factors of survival than any uncommonness of these as original features. As others have noted (Ronan & Higgins 2005, 67–8), paved floors are reasonably ubiquitous across a range of prehistoric, Early Historic and medieval structures within Dumfries and Galloway. A matching sequence of pebble and slab floors was apparent within at least one roundhouse at Burnswark (Jobey 1978, 78). Paving was also apparent at Teroy Broch (Curle 1912, 186) and within and outwith the roundhouses at Boonies (Jobey 1975, 127). At Long Knowe, successive layers of paving were evident within at least one structure (Mercer 1981, 46–4), while successive layers of paving were recorded at the entrance and immediate exterior of the Moss Raploch roundhouse (Condry & Ansell 1978, 106–8) and within Chippermore (Fiddes 1953, 154).

While the orientation of the entrance, facing south-east, adheres to a common pattern amongst Iron Age roundhouses, routinely interpreted as indicative of an underlying cosmology that dictated domestic life during the Iron Age (Fitzpatrick 1997, 77; Oswald 1997, 92–4; Giles & Parker Pearson 1999; 219–29) rather than simply serving to provide a modicum of light for household activities particularly at the beginning of each day, it is difficult to see that the entrance at Carghidown could have been orientated significantly differently given its location on a south-west-facing coastal promontory. It has also been observed at other sites too, such as Moel y Gaer (Guilbert 1975, 206), that ring-groove entrances face the settlement entranceway.

Close to the centre of the space defined by the post-rings was a large pit containing heat-fractured stone. Although this could not be definitively identified as a hearth, due to the absence of ash deposits within it or other evidence for burning in situ, it is nevertheless possible, given the soil chemistry results (Inglis above), that a hearth or oven was situated very close by. The soil chemistry results could be consistent with the central zone of the ring-groove being the focus of activity involving food preparation in at least two phases of the ring-groove occupation. Alternatively, the soil chemistry results may indicate an internal division, separating the south-west part of the site from the south-east, though it should be noted that no corresponding stake-holes were encountered. However, it should be also observed that the only major occupation layer evident within the ring-groove, albeit during the very last phase, was within the south-west quadrant as was the distribution of stone tools. While the north-west quadrant was largely unexcavated, those south-eastern and north-eastern parts examined did not reveal any artefacts either. Furthermore, although the deposition of the stone artefacts within the ring-groove cannot be securely extricated from the last phase of occupation of the site, as it may conceivably owe more to the abandonment phases of the ring-groove than its occupation (LaMotta & Schiffer 1999, 20–5), the regular if not necessarily deliberate distribution of the majority of the artefacts (Engl above) suggests that this distribution was not random (illus 16). While by no means conclusive then, there may be evidence to consider at Carghidown a central zone and a possible south-west peripheral zone of activity within the ring-groove, indicative perhaps of radial divisions around an open central space. Though Moss Raploch is the only remotely comparable example within Dumfries and Galloway (Condry & Ansell 1978, 106–9), this is a common enough pattern of internal organization amongst many other better preserved roundhouses elsewhere in Scotland, such as Sollas Wheelhouse (Campbell 1991, 127), Scalloway Broch (Sharples 1998, 39) and perhaps Fairy Knowe, Buchlyvie (Main 1998, illus 43).

Carghidown was consistent with many other comparable sites in south-west Scotland in yielding very few artefacts (Banks 2002, 31). Nevertheless, those few artefacts do offer some tentative indications of the nature of the occupation. In general, the stone tools were consistent with domestic activities, particularly the saddle-quern and burnisher, though it cannot be assumed that the saddle-quern necessarily connects the occupants with arable agriculture as saddle-querns were not solely used for grinding grain (Armit 1991, 192). However, given that the probable functions of the other stone tools are not out of place within a domestic context, there seems nothing remarkable about the stone tool assemblage in comparison with other excavated later prehistoric domestic sites within the region (Scott-Elliot 1964, 123–4; Scott-Elliot et al 1966, 78; Williams 1971, 113–16; Jobey 1975, 133–5; Jobey 1978, 94; Haggarty & Haggarty 1983, 34–6; Banks 2000, 262; Gregory 2001, 34) or elsewhere in Scotland (Engl above). The lack of further occupation evidence is probably not just the result of the excessive leaching of water from the surrounding landscape inferred by Inglis above. The lack of any significant depth of occupation layers within the ring-groove is likely due to the regular sweeping of the interior surfaces. Evidence elsewhere for the sweeping of rubbish from the interiors of roundhouses include the charcoal debris evident amongst the cobbled yard immediately outwith the Moss Raploch roundhouse (Condry & Ansell 1978, 111), the soil chemistry results from Uppercleuch (Terry 1993, 77) and Woodend (Duncan 2000, 257), and the similar lack of deep occupation layers at Burnswark (Jobey 1978, 78). Regular cleaning of the interior floors of roundhouses was also evident at Sollas and Cnip in the Western Isles (Armit 1996, 145) and Scalloway in Shetland (Sharples & Parker Pearson 1997, 258) and is implicit in sites further afield (Mytum 1989, 73–4). It is also possible that the absence of any midden within Carghidown was due to the disposal of waste as manure, recycling of materials such as metalwork (Hingley 1992, 37), the incorporation of some waste into the earth and rubble bank for the ring-groove, or simply that much of the rubbish was thrown over the cliff rather than allowed to accumulate. As others have noted (Terry 1993, 82), and which is evident especially from sites where better preservation of organic finds is possible (Hunter 1994a, 53), the paucity of artefacts within most later prehistoric northern British sites may reflect cultural choices affecting material and deposition rather than material impoverishment (Haselgrove 1999, 255). Despite the relative paucity of artefacts from Iron Age settlements in Dumfries and Galloway, valuable metalwork from Rispain Camp and Cruggleton for instance demonstrates the participation and status of their occupants within a complex social structure in the Machars (Hunter 1994a, 55). Such participation is also demonstrated at Carghidown by the three lead beads recovered from just outside the ring-groove. These beads are extremely rare and significant artefacts within a pre-Roman Iron Age native context. Using the lead isotope evidence and the proximity of known copper and lead sources, Hunter makes a compelling argument above for these artefacts being a result of experimentation in what was an unusual material extracted during the local mining of copper. While Hunter also makes a strong argument for the lead beads being a votive offering during the closure of one phase and the commencement of another phase of occupation at Carghidown, there was no evidence from their context during excavation for the deliberate deposition of these artefacts. Notwithstanding questions over the exact nature of their deposition, or indeed whether the occupants were themselves active in copper mining, the lead beads do place a person or persons participating in the distribution of copper mining products and therefore of some status at Carghidown precisely at the time when the site was developed into a more formally organized and enclosed settlement. Despite the rather meagre artefactual record from the excavation, this evidence demonstrates that Carghidown was a settlement occupied by people of significant status within the social network of the south Machars, at least during its later phases of occupation.

The exact period when Carghidown was occupied, however, is difficult to discern. Though the charcoal samples used for dating derived from short-lived material, the range of radiocarbon dates, spanning 360 BC to AD 60 (Table 3), do not illuminate the stratigraphic sequence very well. While the deposition of the Phase 1 earth and rubble bank was clearly stratigraphically earlier than the later Phase 4 post-hole and occupation deposits, it was still probably open to the inclusion of charcoal fragments over the entire lifespan of the ring-groove. This may explain the skewed distribution of radiocarbon dates from the earth and rubble bank towards the latter end of the overall range of dates, reflecting perhaps that the most prevalent deposition of artefacts, such as the stone tools, along with charcoal within the earth and rubble bank, more likely derived from the final or abandonment phases of occupation (LaMotta & Schiffer 1999, 20–5). It might also be cautioned that the use of the saddle-quern as a packing stone in one of the post-holes during the very last phase of occupation, and the implication that it was utilized because it was to hand and therefore in recent use prior to deposition, cannot be used to narrow the date of occupation to the earlier part of the radiocarbon date distribution. Although the transition from saddle-querns to rotary querns for the processing of grain is estimated to date to around 200 BC, saddle-querns have a greater range of functions and must therefore be treated more cautiously in terms of chronological significance (Armit 1991, 192).

If the radiocarbon dates only indicate a wide range of time, during which at some point the occupation of Carghidown occurred, the question remains as to the duration of that occupation. The radiocarbon dates might appear to indicate an extremely long duration for the timber ring-groove structure, perhaps as much as 400 years, but it is unlikely given the organic nature of the ring-groove, and especially at such an exposed location, that the occupation of Carghidown spans this entire period. Dendrochronological examination of the lifespan of timber houses from wetland environments, such as Buiston crannog in Ayrshire, Clonfinlough in Offaly and Island MacHugh in Tyrone, demonstrates that such structures were short-lived, occupied probably for no more than two or three generations (Barber & Crone 2001, 71–3). While the radiocarbon chronology for Phases III and IV at Buiston spanned 475 'radiocarbon years', the tree-ring chronology demonstrated that the duration of the occupation in the roundhouses of these two phases lasted no more than 33 years (Barber & Crone 2001, 71). The individual houses at Buiston only lasted between five and 20 years, while the hearths and floors within each roundhouse underwent repair and replacement within two- to five-year cycles (Crone 2000, 160). Doubts as to what extent wetland environmental circumstances played in the short lifespan of such buildings (Halliday 1999, 61) are dispelled by evidence from waterlogged dryland sites, such as the roundhouses at Deerpark Farms, Antrim, which again indicate a short lifespan for prehistoric timber buildings (Barber & Crone 2001, 73–4). Corroborative evidence from Carghidown for a similarly brief duration is represented not only by the post-rings, which required partial repair, indicative of substantial and periodic repairs to the structure and roof. The replacement of the ring-groove floor on at least four occasions while the outer wall that enclosed it, and which was more exposed to the elements, only required partial replacement on its north side alludes to the same pattern of short-term periodic renewal of a roundhouse interior demonstrated at Buiston. That some of the posts belonging to the internal post-rings were replaced indicates substantial damage to the roof on more than one occasion that subsequently allowed structural damage to the ring-groove structure itself. This evidence may indicate that the short occupation of Carghidown was broken by brief periods of abandonment, which necessitated the need for repeated repairs to the roof, structure and floors of the ring-groove.

The form, dimensions, materials and date of the ring-groove structure at Carghidown are sufficiently consistent then with other ring-groove roundhouses in Dumfries and Galloway and beyond to allow it to be considered a roundhouse. Furthermore, if the outer post-ring was unnecessary merely to support the roof (Reynolds 1982, 53; Rideout 1996, 260–1) but supported an upper floor, an outer plank wall rising to a level commensurate with *c* 2m high on its south side, and a roof pitched at 45°, as postulated for similar structures (Reynolds 1979, 33; 1982, 51; Haggarty & Haggarty 1983, 42), the posts belonging to the outer post-ring would be between *c* 1.8 and 2.8m high, while the posts belonging to the inner post-ring would be *c* 3.4m high. Although this might define an upper floor 10.75sq m in area, only a 4.15sq m area across its centre would have headroom of 1.8m. Whether this was sufficient for a living space is open to debate. That the post-rings are not concentric with either each other or the ring-groove is another factor to bear in mind when considering if the load-bearing structure was sufficient to support an upper floor. While a probable hearth or oven was apparent during one phase of occupation at Carghidown, the sparse evidence for any subsequent hearths or occupation debris is consistent with the occupation of the two-storey Atlantic roundhouse of Scalloway in Shetland, where the overwintering of animals on the ground floor and concurrent principal habitation of an upper floor was postulated (Sharples & Parker Pearson 1997, 259). At Scalloway it was further proposed that this seasonal pattern of occupation was followed by the clearing out of animal dung and refuse to allow the ground floor to be used for a variety of domestic activities (Sharples & Parker Pearson 1997, 259). Such a pattern of living might explain the lack of occupation debris or any permanent hearth on the successive floors at Carghidown.

The Carghidown ring-groove may therefore have been a roundhouse, probably one storey but conceivably two storeys in height. It was occupied intermittently and by persons of some status, within a short duration during the later half of the first millennium BC or perhaps the very start of the first millennium AD.

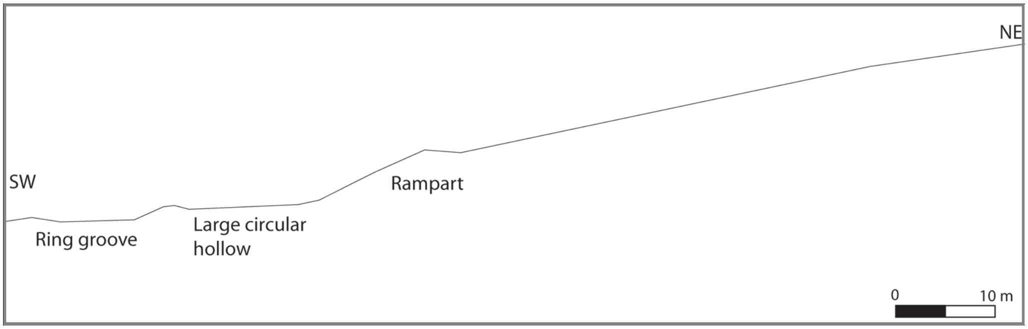
The form of the settlement at Carghidown appeared to comprise a principal domestic area defined by the roundhouse, complemented by an open yard. The clay surface, evident only during the later occupation phases, may have served to formalize the yard, which presumably was always an open space adjacent to earlier phases of the roundhouse. The base of another circular platform on the north edge of the open yard may have been intended to form the foundations of another, perhaps larger, roundhouse, as the landscaping of this secondary platform is reminiscent of the scooped platforms evident to the east (Jobey 1971, 87), as well as other settlements in Galloway (Curle 1912, 186; Fiddes 1953, 153; Condry & Ansell 1978, 107). The complete absence of any post-holes or other structural or occupational features within this platform, however, indicates that the establishment of a second roundhouse was halted at a very early stage of its construction.

It is apparent nevertheless that the interior of the settlement at Carghidown was distinguished between a roofed zone and an open zone, a layout common to many Iron Age settlements within the region, such as Boonies in East Dumfriesshire, where the internal layout was divided between a living area of successive roundhouses and an open yard (Jobey 1975, 138). This internal settlement layout was also evident at Uppercleuch (Terry 1993, 79) and Chippermore (Fiddes 1953, fig 1) and has been observed at several other promontory forts on the Galloway Coast (Toolis 2003, 64) as well as other Iron Age settlements further afield (Jobey 1983, 199). However, while the evidence from Uppercleuch, for instance, demonstrated that the open cobbled yard area of the settlement acted as animal holdings (Terry 1993, 79), no comparable evidence, in the form of high phosphate levels or demonstration of wear, was apparent at Carghidown. It is therefore not possible to speculate with any certainty what specific activities were practised within the open zone of the settlement.

The construction of a rampart and ditch enclosing the open and roofed domestic zones of the settlement at Carghidown probably followed shortly after the formalization of the open space within the settlement, as loose spoil from the ramparts evidently spilled down onto the freshly laid clay surface of the yard, necessitating a stone revetment along the inner face of the rampart to prevent further slippage. That this fairly modest slippage overlay the clay yard surface but was itself overlain by a thin clay surface laid over part of the secondary platform immediately west of the rampart, indicates the sequence of construction associated with the consolidation of the settlement. The clay yard was laid first, followed shortly by the rampart and ditch, and perhaps a gateway structure as indicated by the large post-hole within the entranceway to the site. This was then shortly followed by the last work to the secondary platform, the laying of a clay surface. It was probably around the same time that the last alterations, belonging to Phase 4, were made to the roundhouse, which also succeeded the laying of clay over the open yard of the settlement.

The form of the 3m wide, 1.5m deep ditch is closely similar in its profile and dimensions to the outer ditch at Rispain Camp (Haggarty & Haggarty 1983, 29), the inner ditch at Doon Hill (Crone 1982, 86) and the ditch at McCulloch's Castle (Scott-Elliot 1964, fig 2). The form of the rampart can be surmised from inverting the secondary fill of the ditch, which was identical to the remains of the earth rampart still in situ. From this it is apparent that the 3m wide rampart was composed of an earth bank, probably around 1m high, and crowned by a stone wall, perhaps the best part of another metre high. The form of this rampart was probably very similar to that recorded at McCulloch's Castle (Scott-Elliot 1964, fig 2), in contrast to the stone-capped earth ramparts envisaged at Doon Hill (Crone 1982, 85), Camp Hill, Trohoughton (Simpson 1964, 127), Woodend (Banks 2000, 248), Uppercleuch (Terry 1993, 78) and Long Knowe (Mercer 1981, 58–9). While the bulk of the rampart presumably derived from the ditch upfill, given the large numbers of stones required, not only for the rampart wall, but also for filling the hollows underneath the clay yard and the secondary platform, it is very likely that many of the stones present on site were gathered elsewhere. Along with the clay for the open yard and the materials for the alterations to the roundhouse, which must also have been brought from elsewhere, this demonstrates not only that substantial effort was required in formalizing this settlement but also that some degree of planning was carried out too. A comparable process has been envisaged not only for other native settlements in the region such as Woodend (Banks 2000, 248) but the Roman Fort at Glenlochar too (Richmond & St Joseph 1953, 3). The substantial resources spent in developing Carghidown into a more formally organized and enclosed settlement therefore complements the evidence, represented by the lead beads, for a person or persons of some status at the site during this process.

The duration of this final occupation phase of the site, however, was almost certainly very short. As outlined above, the construction of features that altogether formed the formal organization and enclosure of the settlement appeared to follow rapidly in succession. However, in comparison to ditch sections examined during earthwork experiments at Wareham (Evans & Limbrey 1974, 178) and Overton Down (Bell, Fowler & Hillson 1996, 234–5), the absence of much in the way of primary ditch fill at Carghidown demonstrates that the ditch was open for no more than a year or two before the rampart had entirely collapsed into the ditch. As the analysis of the soil micromorphology from the ditch fill demonstrates (Fouracre above), the deposition of this material took place in one event. This is corroborated by the lack of organic material found within the ditch deposits, which suggest that the ditch was not open long enough for much primary silting to take place (Inglis above). From the drystone masonry that sealed this ditch fill, it seems that the collapse of the earth rampart removed the entirety of the stone wall that crowned it. This evidence suggests an abrupt and complete collapse of the rampart



Illus 24 Topographic profile of Carghidown

rather than gradual disintegration. If the stone wall had gradually fallen into the ditch, or indeed if the earth rampart had been capped with stone rather than crowned with a stone wall, a more mixed deposition of stones would be apparent extending from the base of the rampart. The base of the stone face might still be expected to survive in situ at the interface between the rampart and the ditch, as the revetment was. Instead the entire wall face had collapsed into the ditch.

An abrupt closure to the occupation of Carghidown is also demonstrated elsewhere on the site. The final alterations to the roundhouse, which necessitated the breaking up of a large part of the slab floor to be reused as packing stones for a number of structural posts, was not accompanied by the laying of a new floor surface. Only a very thin layer of relatively charcoal-rich material was evident and, far from demonstrating any substantial build up of occupation debris, this may only have derived from the disturbance of the slab floor. The micromorphological analysis of that small part of the surrounding earth and rubble bank that had collapsed over part of the interior of the roundhouse did not indicate a gradual process (Fouracre above; illus 8) but there was no evidence for deliberate infilling as apparent on sites where planned abandonment is postulated (Nowakowski 2001, 141–5). Furthermore, there was no evidence of occupation of the secondary platform and if this was intended to form the base of a second roundhouse, there was no evidence that the erection of any timber structure had begun. There was also no evidence, such as wear or secondary features, from the clay yard.

Because no floor surface was found in association with the last building phase within the roundhouse, it may be surmised that the refurbishment or repair of the roundhouse had been started but not finished. A platform for a second, larger roundhouse had been created but no further construction had followed. The clay yard had been laid but no evidence of use was apparent. Taken together with the evidence for the sudden dismantlement of the rampart enclosing the site, the occupation of Carghidown clearly underwent an abrupt and deliberate act of closure, during a new phase of construction and consolidation.

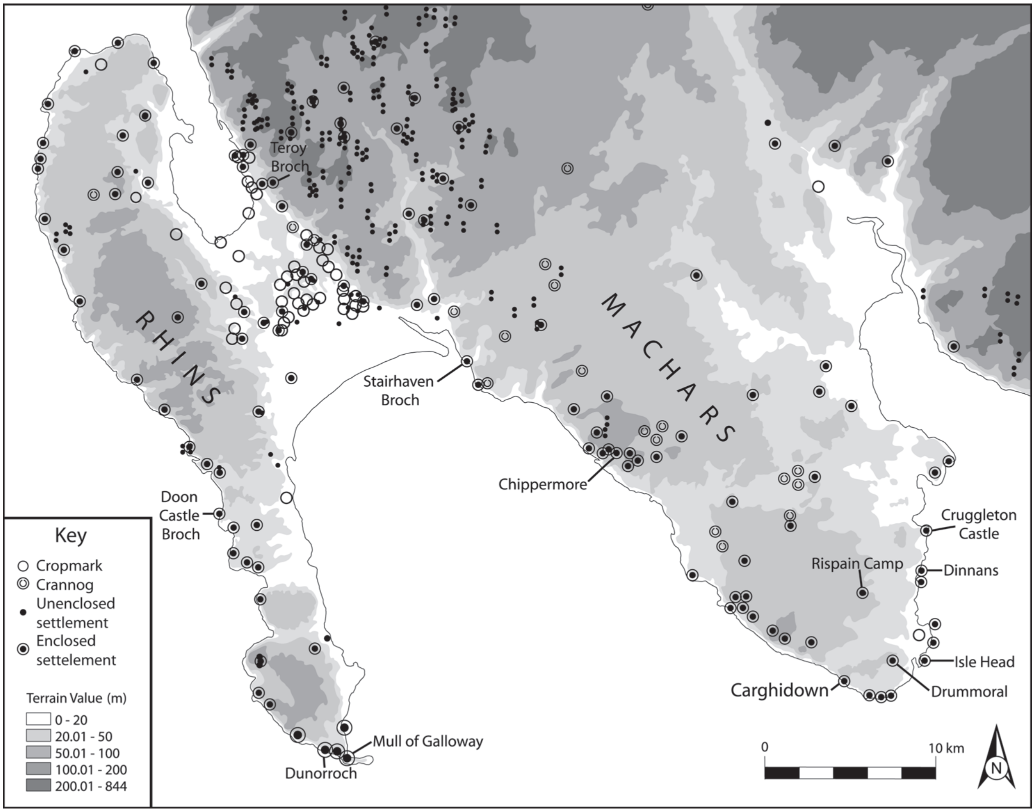
The nature of this act of closure and the implications this has for the function of the settlement itself remains to be examined, but further consideration must first be given to the topographic location of Carghidown to understand why a settlement was established here in the first place.

As the author has previously noted, Carghidown occupies an apparently indefensible location (Toolis 2003, 63). Like a few other later prehistoric settlements along the Galloway

Coast, such as Dinnans (Toolis 2003, 63), Dunorroch (Ralston 2006, 37) and the brochs at Stairhaven (Yates 1983, 95) and Doon Castle, Carghidown occupies a seemingly irrational locale. While its immediate hinterland forms a small pocket of good quality agricultural land on this part of the Machars coast, this ground drops considerably to meet the site (illus 2 & 24), which raises the question as to why a settlement was established here instead of a short distance landward. Carghidown is not visible from its hinterland until one is almost upon it, nor, contrary to earlier impressions by the author (Toolis 2003, 46), is it intervisible with any known contemporary site on the same coastline. It is not especially visible from the sea either, situated as it is on a small promontory on an incised fractured coastline. It has no direct access to the sea that might allow maritime activity other than fishing from the rocks nor does it occupy a location especially proximate to the copper mine that probably formed the likely source of the lead beads recovered from the site (Hunter above). However, that considerable effort and resources were repeatedly invested in occupying, re-occupying and latterly fortifying Carghidown suggests that its precarious location was no accident. That Carghidown is concealed by the lie of the land seems pertinent to the nature of its occupation.

Given this aspect of Carghidown, it is necessary to observe the wider landscape around the site. Carghidown lies on the south-west coast of the Machars, at the end of a ridge of broken high ground, on the opposite side of the peninsula to the low-lying and better quality agricultural land in the south-east part of the Machars (illus 25). The scattered distribution of prominent fortified settlements in this area, notably Rispain Camp, Drummoral and Isle Head reflects no more than that these are either of a sufficient scale to have withstood generations of ploughing or occupy undesirable locations for arable agriculture. The coastal distribution of the remaining known later prehistoric settlements in the South Machars (illus 25) is due more to the marginal nature of these sites in the modern landscape, which has led to their precarious survival (Toolis 2003, 71–3) rather than an association with maritime activity, as none of the excavated promontory forts has yet yielded evidence for maritime-related activity and for only a few on the Galloway Coast is it conceivable that maritime activity played a reason in their location (Toolis 2003, 65–8). As others have surmised (Hunter 1994a, 35), the large blanks in the Iron Age settlement pattern within this part of the Machars are misleading, as this reflects more the nature of archaeological visibility than any true absence of settlement, especially as there are undoubtedly large numbers of plough-truncated sites under pasture in this part of south-west Scotland (Cowley & Brophy 2001, 49; Cowley 2002, 262). This is verified by aerial surveys of the low-lying flat arable and pasture lands of the East Rhins, which have yielded plenty of evidence for hitherto unknown cropmarks (illus 25), many of which appear to be later prehistoric settlements (Cowley 2000, 172–3; Cowley & Brophy 2001, 69). The South Machars has not yet received such intensive aerial surveys but, given the presence of at least one such comparable cropmark in this area (illus 25), and the greater capability in the South Machars for pre-modern arable agriculture than in the East Rhins (Donaldson 1816, 429–30, 435–6), it is highly likely that a similar pattern of as yet undiscovered plough-truncated remains exist here too. The implication therefore is that not only was there a much more intensive settlement pattern in the South Machars during the Iron Age than the distribution map of known settlements gives credit but that, contrary to the distribution map (illus 25), settlement during the Iron Age was concentrated more in the south-east part of the Machars than the south-west where Carghidown lies.

The nature of settlement in the South Machars contemporary to Carghidown is revealed by evidence from a number of sites. Prominent amongst these is Rispain Camp. While the radiocarbon dates derived from its excavation may have a questionably long



Illus 25 Later prehistoric settlement distribution in western Galloway

range, due to the selection of multiple entities including oak samples for radiocarbon dating (Haggarty & Haggarty 1983, 40), its occupation must nevertheless fall within a more compressed span between the mid first millennium BC and early first millennium AD. This rectilinear enclosed settlement, one of a growing number of 'improved farms' of the Iron Age discovered within prime agricultural land in south-west Scotland (Cowley 2000, 173; Cowley & Brophy 2001, 68–9), is very likely associated with the planned and large-scale intensification of agriculture evident across southern Scotland during the late first millennium BC (Tipping 1994, 31–3; 1997a, 20; 1997b, 245). Added to evidence such as the ards from Milton Loch crannog (Guido 1974, 54) and Lochmaben (Fenton 1968, 150) and possibly the cord rig at Brighouse Bay (Maynard 1994, 16), the recovery of bread wheat at Rispain Camp (Haggarty & Haggarty 1983, 39–40), rarely found in native Iron Age contexts where hulled barley and emmer wheat predominate (Tipping 1997, 21), is significant evidence for advanced arable agriculture in this part of Scotland at this period (Dickson & Dickson 2000, 110). It is understandable then that the excavators preferred the rendering of the place name, 'chief of the cultivated country' (Haggarty & Haggarty 1983, 43), especially given the original meaning of the Machars as a 'low-lying fertile country' (Donaldson 1816, 423). Furthermore, as already noted above, Rispain Camp has produced evidence of high status metalwork (Close-Brooks 1983, 47–8; Haggarty & Haggarty 1983, 45–6 & 49). Given this evidence, indicative of participation within a wider social framework (Hunter 1994a, 55), it is tempting to ponder if the earlier find here of a 'round plate of copper' (McIlwraith 1877, 58–9) may link Rispain Camp with the local mining of copper. Moreover, it is also worth noting that the site contains one of the largest roundhouses excavated in Galloway and that though Rispain Camp is not an especially defensive site, the scale of its fortifications dwarf those of Carghidown. With the exception of the more complex and strongly fortified, albeit undated, promontory fort at Isle Head (Toolis 2003, 50–1, 66 & 69), only one other unexcavated site in the South Machars, Drummoral, appears comparable in scale and topographical pre-eminence to Rispain Camp.

The excavations at Cruggleton Castle on the other hand revealed a roundhouse significantly smaller than that at Rispain Camp, though not so different from Carghidown. Radiocarbon dated to the end of the first millennium BC or start of the first millennium AD, albeit again from a mixed entity sample (Ewart 1985, 14), Cruggleton Castle, while also yielding evidence of high status metalwork (Caldwell 1985, 64), seems in terms of scale, like most of the local promontory forts (Toolis 2003, 60–70), a less pre-eminent settlement than Rispain Camp. An Iron Age settlement hierarchy, albeit incomplete, is therefore apparent in the South Machars, comparable to settlement hierarchies elsewhere in south-west Scotland (RCAHMS 1997, 76–86; Halliday 2002, 100) and perhaps dominated by pre-eminent households (Piggott 1953, 114; MacKie 1987, 16; Main 1998, 409; Dunwell 1999, 352).

If Carghidown was not as prominent within the local contemporary settlement hierarchy as Rispain Camp, Drummoral or Isle Head, its occupants nevertheless had some form of relationship with the inhabitants of the more pre-eminent settlements that enabled them to participate in local systems of exchange and repeatedly exploit material and labour resources. Its precarious location, concealed by the lie of the land, is peculiar. It is tempting to think its rampart and ditch offered no more than a psychological comfort to its occupants, practical defence not considered a feasible aspect prior to the excavation (Toolis 2003, 63), the 'defences' being so compromised by the topography that any movement within the interior would be observable by potential assailants outside (Bowden & McOmish 1989, 13). However, while there was no evidence for a palisade and it is doubtful that the wall was ever wide enough to allow a walkway, it is worth noting that the ditch was vertically cut through 1.5m of natural subsoil and measured approximately 3m wide. The rampart originally measured almost 2m high above the ditch and was 3m broad at its base. This was a barrier 6m wide and 3.5m high and while somewhat less than the 5.8m high barrier formed by the rampart and inner rock-cut ditch at Rispain Camp (Haggarty & Haggarty 1983, 40), this was not merely a garden fence. The act of enclosing Carghidown represents substantial investment of labour and materials. However, it is doubtful that the rampart and ditch ever succeeded in making Carghidown an outwardly impressive site to behold, which puts it at variance with a commonly accepted explanation for defensive boundaries in Iron Age sites as fulfilling more a function of display for the purposes of prestige than the practicalities of defence (Bowden & McOmish 1987, 76; Collis 1996, 90; Armit 1997, 59). Those approaching Carghidown would have always looked down upon it. It is the opposite from many fortified Iron Age sites, such as the nearby sites of Rispain Camp, Drummoral and Isle Head, which occupy topographically prominent locations. One might conclude therefore that the enclosure of the site was carried out simply to reflect per se the status of the inhabitants, in terms of an act of social exclusivity (Hingley 1990, 96; Banks 2000, 273; 2002, 32; Harding 2004, 64) rather than an ostentatious display of social exclusivity. Comparisons may be drawn with Stairhaven on the north-west coast of the Machars (Yates 1983, 95) and Doon Castle on the west coast of the Rhins, two enclosed sites containing brochs that occupy similar topographical locations to Carghidown (Toolis 2003, 63). If Carghidown possessed a two-storey timber roundhouse, as tentatively postulated above, the comparisons are even more compelling.

Accepting that status tied to some manner of social exclusivity was an issue for the inhabitants of Carghidown, the nature of the abandonment requires explanation. The occupation was halted abruptly during the construction of a new building and the repair of an existing building. At the same time the rampart was thrown down. While the slighting of the rampart was apparently violent, there was no evidence for a catastrophic destruction of the roundhouse, in comparison with Buchlyvie (Main 1998, 310), Leckie (MacKie 1982, 62) and Scalloway (Sharples 1998, 80). Only a very thin layer of relatively charcoal-rich material was evident within the roundhouse at Carghidown. While the secondary part of the ring-groove on the northern side of the roundhouse appeared to have been disturbed in comparison to the adjacent primary ring-groove (illus 8), the packing stones of many of the post-holes within the roundhouse were still in situ (illus 11), suggesting that what disturbance took place was haphazard and perhaps due to natural elements, not systematic or necessarily a result of human agency. Therefore, while the abandonment of the site was clearly deliberate, as demonstrated by the slighting of the rampart and ditch, the premature halt to re-occupation and absence of any subsequent occupation, an explanation based on ritualistic closure (Bowden & McOmish 1987, 78–9; Church 2002, 70) is not tenable as the interior of the settlement showed no signs of actual acts of closure comparable to the deliberate destruction of the rampart. The implication might also be that that Carghidown was abandoned as a result of hostile coercion.

With coerced abandonment of the site to consider, the diminutive but deliberately chosen location of Carghidown paradoxically strengthens its defensive aspect, the strength of the site perhaps being its concealment within the surrounding landscape. Its disadvantage, in being quite starkly overlooked (illus 2 & 24), depends upon any potential assailants first finding it. Nor is it unique in this aspect amongst the settlements of the Galloway coast, where sites such as Dinnans on the south-east coast of the Machars (Toolis 2003, 63), Dunorroch on the west coast of the Rhins (Ralston 2006, 37), as well as the brochs at Stairhaven and Doon Castle are also obscured within the landscape until one is upon them. Together with the evidence for sporadic occupation brought to an abrupt end, this aspect of its peculiar location suggests that Carghidown was, from its inception, planned as a refuge, a place of seclusion sought for temporary occupation when the threat of danger periodically occurred. Its defensive attribute depended upon its concealment within the landscape. Ironically, it may have been the formal enclosure of the settlement, ostensibly providing a substantial boundary but necessitating the importation of substantial labour and materials that may have raised its profile within the landscape, which perhaps contributed to its downfall.

If this interpretation is correct, this would imply not simply contemporary conflict at a low interpersonal or interneighbour level. That such a refuge was planned and deemed worth repeatedly investing in implies a severe level of conflict. While it is commonly accepted that warfare was endemic during the Iron Age (Cunliffe 1991, 497; Collis 1996, 88; Armit 1999, 76; Armit & Ralston 1997, 182; Ralston 2006, 124; Bowden 2006, 432), unequivocal evidence for this is difficult to discern (Sharples 1991, 80–3). The recovery of weapons from Iron Age contexts, such as the spearhead from Brighouse Bay near Kirkcudbright (Hunter 1994b, 22), imply a capacity for violence, but at what level (interpersonal/interneighbour/intercommunity) or subject (human/animal) that violence was directed is unclear. Even where clear injury and death of an individual resulting from armed combat is demonstrated (Card & Downes 2006, 1–2), the context for such violence is not. A stronger context for intercommunity or even interregional violence is perhaps represented by the sword tips included in the Carlingwark hoard, a large native votive deposit made at a regional or tribal level (Hunter 1997, 116–17 & 122) but this also highlights the immediate ritual context for many such artefacts. Like items such as the Deskford Carnyx or the decorated sword scabbards from Mortonhall and Bargany, the Torrs pony cap from Galloway (MacGregor 1976, nos 188, 150, 140 & 1 respectively), for instance, could be a potential accoutrement for martial display, given its stylistic links to the production of other items of martial display (Harding 2002, 204), potential association with chariots (Harding 2002, 193) and the evidence for chariot warfare in Iron Age Britain (Bowman & Thomas 1987, 136; Cunliffe 1995, 31). However, it is not evidence for martial activity per se, especially when such a role for chariots is contended (Stead 1965, 259; Carter & Hunter 2003, 534). The same rationale must apply to apparent 'warrior graves' such as those discovered in Alloa and Dunbar (Roy 2006, 4). Much of the warfare conducted in Iron Age Britain may have involved symbolic posture for the purposes of deterrence (Sharples 1991, 88). However, such ritualism cannot have been effective without the reality of what was signified (Harding 1999, 169–70; Kristiansen 1999, 88) and evidence for glorified violence in the South Machars during the Iron Age is provided by the skulls recovered from the ditch at Rispain Camp, one of which was pierced at the back (Barbour 1902, 624) and which probably originally adorned the rampart there.

However, the most compelling evidence for actual warfare, or violence at an intercommunity or interregional level, during the Iron Age is the violent destruction of settlements and fortifications. This is best exemplified by the vitrification of ramparts, apparent across Scotland, from the mid first millennium BC to the later first millennium AD (MacKie 1976, 445; Ralston 1981, 86), which unequivocally demonstrate the spectacular and systematic, symbolic and practical, destruction of settlement defences after capture by assailants (Childe & Thorneycroft 1938, 55; Nisbet 1974, 4–5; MacKie 1976, 206–10; Harding 1979, 9; Ralston 1986a, 18 & 38; 2006, 163; Audouze & Buchsenschutz 1991, 97; Armit 1997, 59; cf Bowden & McOmish 1987, 79). The scale of destruction at many such sites, including several in south-west Scotland (Thomas 1961, 64; Truckell 1966, 149; Williams 1971, 115–17; Nisbet 1975, 11–16; Laing & Longley 2006, 10, 22–4 & 171), demonstrates the magnitude of resources required to achieve vitrification. Such resources could only have been marshalled at an intercommunity or interregional level. Nor is it only at forts enclosed by timber-laced ramparts that violent destruction is apparent. A number of pre-eminent settlements across southern Scotland including Leckie (MacKie 1982, 62; 1987, 1), Torwoodlee (Piggott 1953, 103) and Buchlyvie (Main 1998, 310; Armit 2003, 124) demonstrate clear evidence of violent overthrow. As well as providing examples of weapons found within a domestic context, Leckie and Buchlyvie also demonstrate that the occupants possessed considerable high status metalwork (MacKie 1987, 16; Hunter 1998b, 357; 1998c, 394–5) and together with the evidence from Edin's Hall (Hunter 1999, 340) suggests that the inhabitants of these prominent settlements in southern Scotland were closely involved in the control of the mineral resources required to produce such metalwork. Given that agricultural technology and access to mineral wealth were prerequesite means to economic and political development in the Iron Age, warfare was an alternative means of acquiring such wealth and power, especially for those that did not inhabit areas endowed with these resources (Kristiansen 1999, 183) and might provide a feasible explanation for the frequent correlation in southern Scotland of such high status settlements with violent destruction

(Halliday 2002, 105) and the evidence for competition between other pre-eminent settlements elsewhere in south-west Scotland (RCAHMS 1997, 164). As at least one such pre-eminent settlement, Rispain camp, associated with advanced agriculture and mining, was present in the South Machars during the late first millennium BC and early first millennium AD, it is no surprise then that the threat of warfare was apparent too. Given the periodic occupation of Carghidown, such a threat of warfare perhaps only occurred sporadically, or seasonally in the same way that raiding was predominantly carried out at specific times of the year during the 16th century, another unstable period in southern Scotland (MacDonald Fraser 1995, 93–4).

Accepting this context, locally pre-eminent settlements like Rispain Camp, Drummoral and Isle Head may have posed as much as a target for enemies as a deterrent. Furthermore, given the indiscriminate nature of prehistoric warfare (Keeley 1996, 174–5), perhaps demonstrated by the decapitated skull of a young woman that once adorned the rampart of Rispain Camp (Bryce 1902, 625), a refuge such as Carghidown, some distance from the more prominent settlements, was understandably an attractive idea for non-combatants during outbreaks of warfare.

CONCLUSION

It might be with some trepidation that the idea of a refuge is offered as an explanation for an enclosed Iron Age settlement. This is not simply because the boundaries and indeed roles of such sites are more commonly interpreted as fulfilling largely symbolic functions (Bowden & McOmish 1987, 80; Hingley 1990; Sharples 1991, 81–83 & 88; Haselgrove 1992, 413; Armit 1997, 59–60) but that in the past, such explanations of defence (Wilson 1885, 64; Wilson 1980, 118; Ralston 1986b, 115) often appear speculative and based on assumptions more than positive evidence. This explanation is therefore not offered with regard to promontory forts in general or other Iron Age settlements, for while valid comparisons to Carghidown have been drawn with a number of other sites, it is apparent that there is no one single explanation for enclosed Iron Age settlements (Armit 1999, 73; Harding 2004, 64).

The evidence from the excavations at Carghidown, however, suggests sporadic occupation of this site over a short period, during the late first millennium BC or early first millennium AD, by inhabitants of some status within the local social network. The evidence also demonstrates that the site was only formally enclosed during the later stages of its occupation and that within a year or two of this act of enclosure the ramparts were violently thrown down and the repair and construction of buildings within the settlement was abruptly halted and occupation ceased. Given the concealed setting of Carghidown within the landscape, its peripheral place within the contemporary settlement pattern and the violent context of contemporary society, the most credible explanation is that it principally functioned as a sporadically occupied refuge. It significance lies in that, as a refuge, it implies planning and therefore a foreseen threat of a scale of violence that may be reasonably perceived as warfare. That it came to an unfortunate, premature demise bears testimony to the reality of that threat.

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