

Carrick Castle: symbol and source of Campbell power in south Argyll from the 14th to the 17th century

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ABSTRACT

An intermittent series of archaeological investigations was conducted at Carrick Castle, over a 10-year period, in tandem with repair and restoration of the building by its owner. Excavations focused on the barmkin (1985) and on deeply stratified deposits within the basement of the castle (1992–3; 1996). The 1996 work saw the complete excavation of the castle basement, revealing evidence of its late 14th-century origins, through to its intensive occupation during the 17th century and culminating in the clearance and repair programmes of the early 20th century. The present report offers a synthesis of all episodes of fieldwork, a wide range of post-excavation analyses of artefacts and environmental materials, and a historical appraisal of the castle as a strategic stronghold in the emergence of Campbell power in Argyll. The report was prepared with funding from Historic Scotland.

INTRODUCTION

Excavations at Carrick Castle formed part of an ongoing programme of repair and restoration by the owner, Mr Alex Fleming. Trial excavations were first carried out in the barmkin in the mid 1980s by John Cannell (1985) and were resumed within the basement in the early 1990s, first by AOC (Scotland) Ltd (Rogers 1992) and then by Firat Archaeological Services (Baker 1993). The results of these earlier excavations in the basement appeared to show the survival of stratified deposits over bedrock to a depth of over 2 m, representing a period which arguably extended from the 13th to 17th centuries. With this archaeological potential in mind, and in view of the ongoing programme of building restoration works, a more comprehensive excavation of the basement deposits was undertaken by Kirkdale Archaeology in 1996.

The range of historical, artefactual and environmental evidence which has been harvested by the successive excavations and associated research is indeed extensive. The following paper offers a synthesis of all the various field and research evidence. (Detailed individual reports on all stages of the work are available in the Carrick Castle archive at the National Monuments Record

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of Scotland.) This exercise has required a review of all previous work and, where possible, correlation of recorded features between projects was achieved, particularly in the case of the surviving masonry. Indeed, the high standard of the earlier excavations enabled close comparison with the 1996 data, so that the critical evidence from earlier work can be presented along with the most recent findings. Inevitably, however, as the scale and objectives of the successive excavations varied widely, the overview achieved by the final episode of fieldwork in 1996 has resulted in the modification of some earlier interpretations.

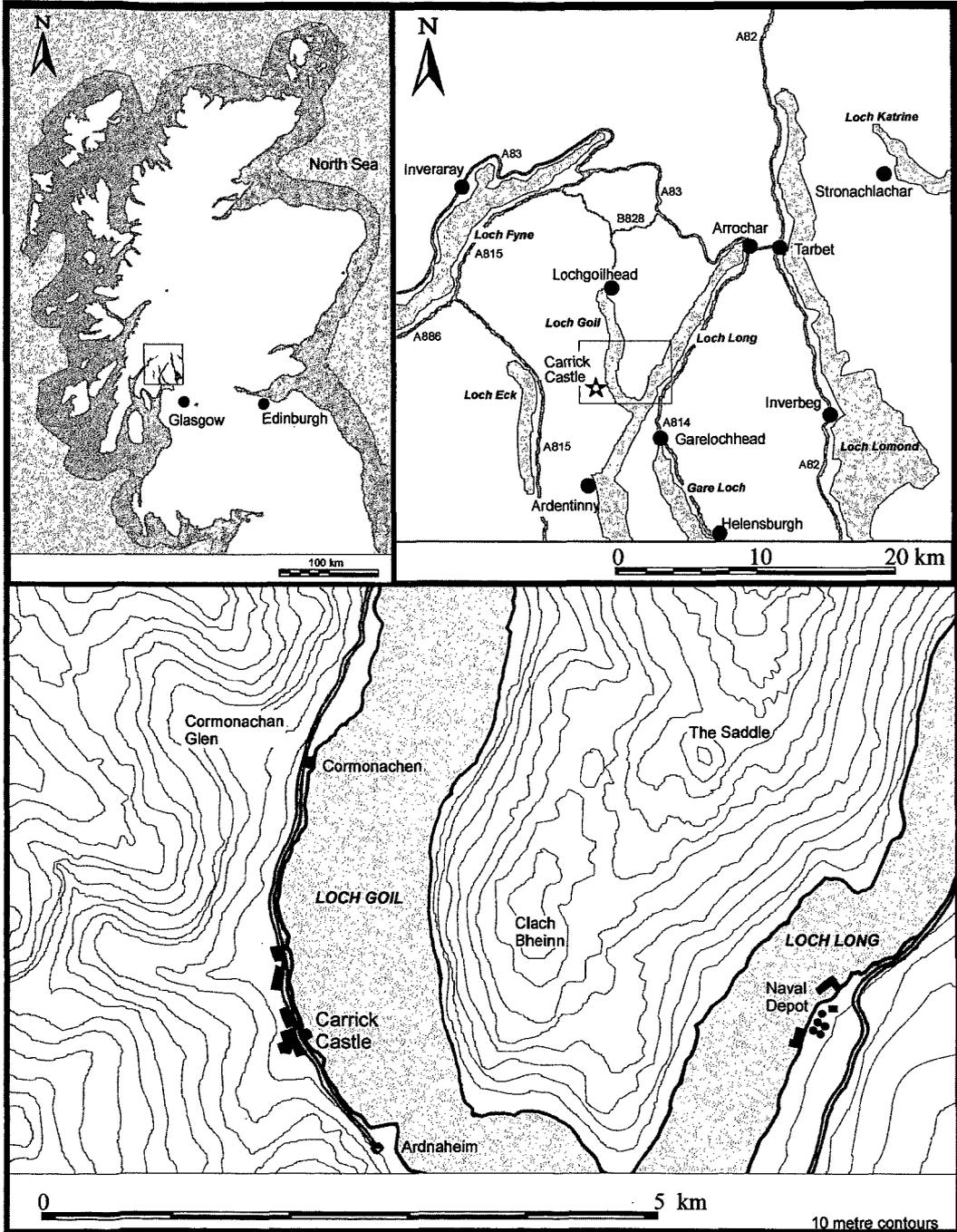
Once the 1996 excavations had been completed, it was clear for the first time that the archaeological deposits within the basement were less the result of a steady, stratified build-up of occupation and abandonment debris from the earliest occupation of the present building, but more the effect of clearance in advance of each new building programme, with new levelling deposits being often a mixture of residual material and freshly imported gravels from the beach. In addition, some new evidence emerged of a precursor to the present tower, a possible timber hall. With this earlier building began the long process of levelling and scarping the bedrock outcrop on which all the Carrick structures were built. As will be seen below, the presence of an earlier timber building (or possibly a small complex of buildings), combined with the contours of the rock outcrop itself, determined the 'footprint' of the later tower. The character of the archaeological deposits themselves, in terms of their wide date range and high degree of contextual contamination, was an inevitable consequence of recycling within a contained or discrete area over an extended period.

However, despite the problems of contextual contamination and structural alteration, the site record clearly represents the development of a great Highland stronghold. Carrick Castle and its precursor were key elements in the pattern of medieval lordship in Argyll; the evolution of this pattern, up to the 17th century, is in turn reflected by the structural development of the site as a strategic base, both in maintaining control of the area and in the aggressive expansion of the Campbell earls of Argyll. The colourful history of the site, best seen in the ruthless behaviour of its Captains during the 16th and 17th centuries (see Appendix 1: Captains of Carrick), through to its role in the full-scale rebellions against the Crown by the earls of Argyll, provides a rich cultural context for the findings of the recent fieldwork. The transition from medieval lordly fortified residence to multi-purpose stronghold in the post-medieval period, comprising prison, arsenal and warehouse, is clearly seen in the wide range of artefacts retrieved from the excavations, as well as in the structural changes within the basement of the tower and the barmkin enclosure.

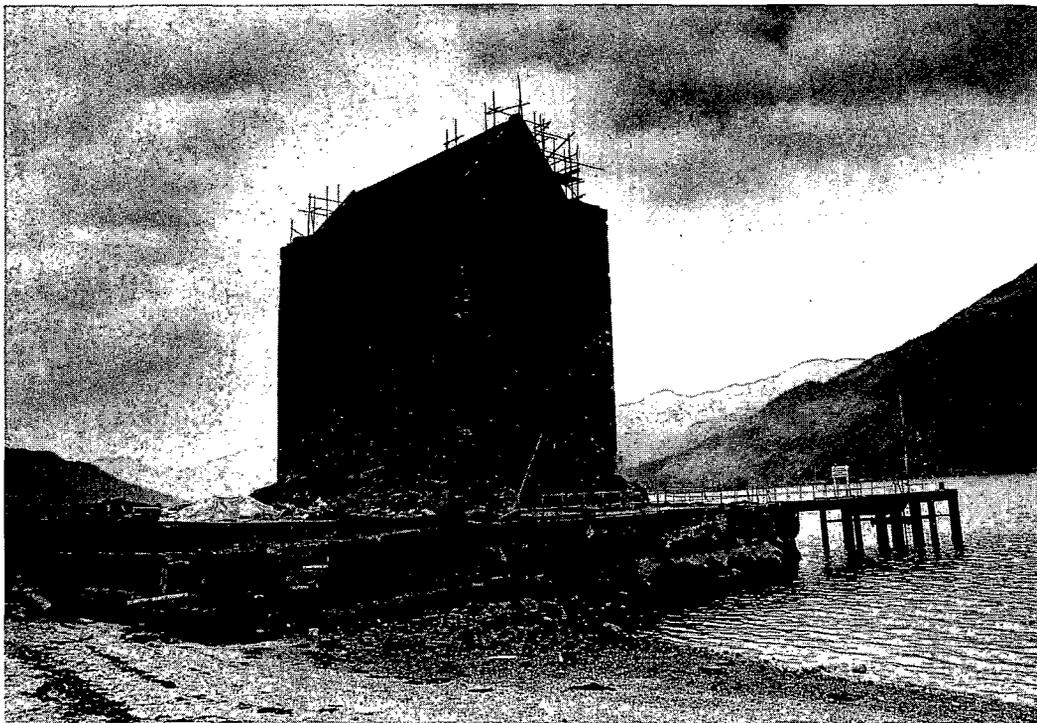
SITE DESCRIPTION

Carrick Castle (NGR: NS 1941 9447) is situated on the west shore of Loch Goil, some 5 km south of Lochgoilhead (illus 1). The castle occupies most of a rocky outcrop which forms the end of a wide grassy promontory on the west shore of Loch Goil. To the north, the promontory slopes gently down to the high-tide line as a shingle beach, while to the south the land has been consolidated to allow access to a concrete pier for shipping (illus 2).

The castle rock rises some 3 m above the general level of the promontory and is characterized by sheer faces on all sides. The building itself comprises a massive, bulky, rectangular tower with a smaller building of probable 17th-century date (RCAHMS 1992, 226–37) appended on the east side and, in the angle formed by the two buildings, a small enclosure or barmkin (illus 3). Access to the barmkin is via a simple doorway, probably served originally by a timber stair or bridge, although no vestige of this arrangement survives today.



ILLUS 1 Site location map. (Based on the Ordnance Survey map © Crown copyright)



ILLUS 2 Carrick Castle from south

Once inside the barmkin, the tower itself was entered via two doorways: the ground-floor door into the basement space, and a door at first-floor level, reached via a forestair.

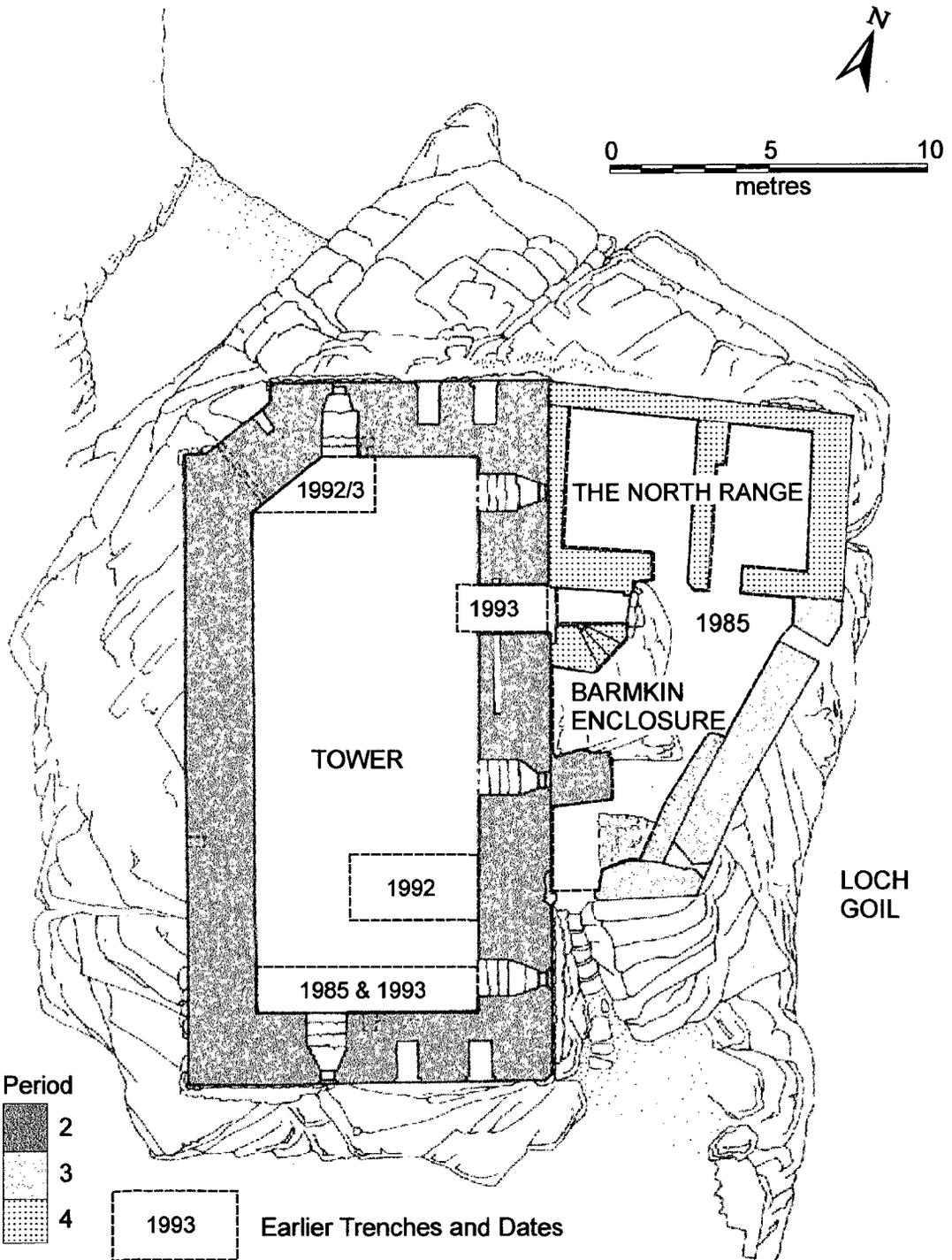
The tower is rectangular in plan and was occupied on two floors above an undercroft. Despite the absence of any *in situ* original flooring, the windows and doorways suggest the following internal arrangement. At first floor there was a large hall augmented by a smaller service accommodation to the north. Access to the second floor and wallhead was via mural stairs in the east wall and accommodation at second-floor level comprised three separate chambers.

HISTORICAL SUMMARY

Carrick Castle is thought to date to the late 14th century and to have been built by the Campbells of Loch Awe, later earls of Argyll. The castle was occupied on their behalf by hereditary captains from c 1500 to 1685, all of whom were descendants of the Campbells of Ardkinglas. In May 1685 the castle was attacked by forces loyal to James VII in retaliation to the 9th Earl of Argyll's abortive rebellion against the Crown. The Campbells of Carrick died out in 1745, when the estate was acquired by the Campbells of Ardkinglas, later passing to the earls of Dunmore. Extensive clearance and repointing works were carried out on the castle some time soon after 1900, and before 1908.

EXCAVATION RESULTS

Following excavations in the barmkin by John Cannell in 1985, further excavations in the 1990s were confined to the basement of the tower, as described above. The basement area was



ILLUS 3 Plan of the castle, showing principal periods of construction

characterized by an uneven deposit of general debris from the collapse of the upper floors, and spoil from previous excavations. Newly installed timber joists and temporary boarding at first-floor level covered the area of excavation, with the restored slate roof and floored garret space two storeys above these. The consequent lack of natural light, along with difficulties in removing spoil, created considerable logistical problems. To mitigate these, temporary lights powered by generators were installed, and a scaffold ramp and chute were erected, running out from the barmkin door to the concrete pier. All internal deposits were removed to bedrock, with the exception of the cross-walls and other masonry features; these were left *in situ*, supported where necessary by underlying deposits.

The results of the archaeological investigations can be summarized in terms of the following major construction periods:

- Period 1 pre-1350
- Period 2 late 1300s to early 1500s
- Period 3 mid 1500s to early 1600s
- Period 4 late 1600s
- Period 5 early 1700s to present

PERIOD 1: PRE-1350 (ILLUS 4)

Period 1 is represented by evidence for a complex of structures pre-dating the present castle. The main elements of this complex appear to have been a largely timber-built, hall-like structure, lying towards the central area of the outcrop, aligned along the strike of the bedrock (NE/SW), within an outer defensive wall of stone construction.

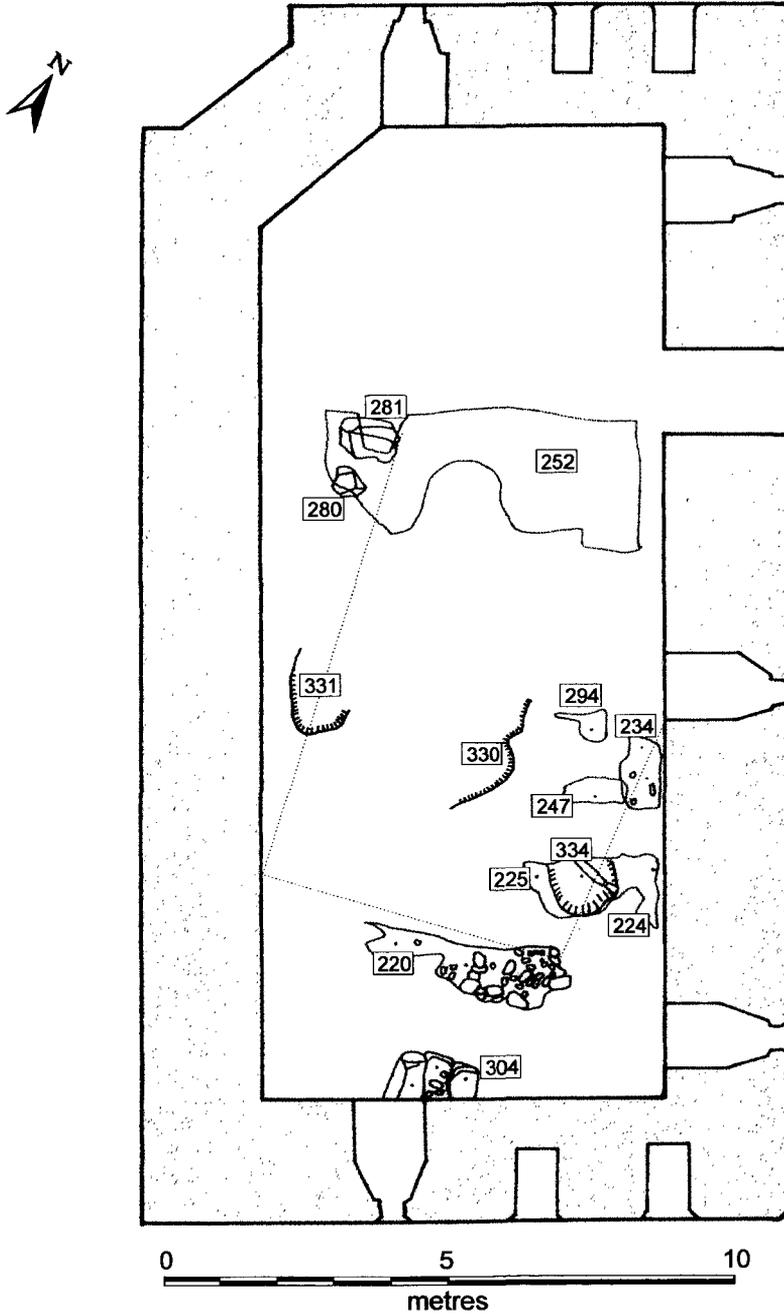
Timber hall? The east wall of the 'hall' was represented by a series of shallow, rock-cut features, possibly for structural timbers. The south end of the building appears to have been defined by a masonry wall of rubble construction (F220). A possible post setting (F331) indicates the line of the west wall and the north-west corner is suggested by an alignment of crude stone-work, incorporating two large boulders (F280 & F281). (Otherwise, evidence for the north and west walls was largely obscured by later features.) This rough outline describes a rectilinear building c 8.1 m long by 5.4 m wide.

In the interior of this building were deposits of decayed bedrock or brash, combined with a green clay. There were patchy 'floor' surfaces (F224 & F225) at the south end of the building. To the north of the structure, occupation surfaces featuring the distinctive green clay, this time rich in charcoal flecks, directly overlay the bedrock, pressed well into its contours. Cuts (eg F294) lying towards the middle of the building may indicate a cross-wall or doorway. A slot-like feature (F330) within the building lay roughly parallel to the side walls.

Enclosing wall? Towards the south of the site a short stretch of crude clay-bonded walling (F304) was sealed by the later masonry (Period 2) of the south wall of the tower. The massive rubble construction and different alignment to the tower of the two wall remnants (F304 & F220) distinguished them as elements of an earlier building phase. They owed their survival to having been incorporated as supporting structures for later masonry.

PERIOD 2: LATE 1300s TO EARLY 1500s (ILLUS 5, 6 & 7)

Period 2 saw the erection of at least the lower elements of the tower walls as they survive today. The schistose bedrock is highly laminar, and it would have been comparatively easy to lever off decaying and weathered rock to achieve a firm surface on which to build the tower. It seems likely



ILLUS 4 Period 1 features: remains of a timber hall pre-date the castle

that some of the cuts and edges recorded in the bedrock surface were the result of attempts to level the surface. Thin patches of charcoal in the rock crevices may have derived from fires lit to heat and crack the rock, to make this operation easier.



ILLUS 5 The castle from the west, showing the first-floor door and angled south-west corner

Tower house construction The walls of the tower were constructed of simply coursed, roughly faced angular to sub angular schist and gneiss rubble with fillers, and were crudely bonded with a mixture of silt and lime mortar. The east wall (F314) was based on two courses of wider foundations set in a construction trench back-filled with gravel (F278 & F269). Construction details were visible to a height of only 0.55 m before the wall face became covered with rendering from renovations dated to c 1900.

There was clear evidence that the basement chamber was to have been vaulted, although this work appears never to have been completed. The apparently unfinished remains of this construction were plainly visible over much of the exposed interior faces of the long walls (illus 7). The west wall (F312) was not based on a foundation cut. It was of slightly rougher build than the east wall, possibly because it was built directly onto the uneven bedrock surface; but otherwise the stone types, sizes, silt and mortar bonding were all similar. Stretches of broader foundations at the south-west end of the west wall and the mid point of the south wall were 'rafted' over breaks in slope or pre-existing man-made cuts in the bedrock. Similar stretches were identified at foundation level in other areas of the castle. The natural cliff edge to the south was quarried back to form a cut (F325), truncating the north end of the Period 1 wall in the process. Drain outlets at the base of the south wall (F306, F307) were an integral part of this primary build (though only one is now visible in the outer wall face), as were the joist holes for a timber floor in the south chamber (below). The north wall was of similar construction to the other walls, and was founded on bedrock

externally. Internally, the presence of the Period 3 vaulting (below) obscured the lower courses of this wall from view.

Since the building of a structure of this size is likely to have occupied more than a single season of activity, the presence of what appeared to be other, very large joist-holes at the mid point of the north and south walls, immediately below the first-floor scarcement, may reflect the location of a temporary structure *within an incomplete and roofless castle, and would explain the otherwise surprising survival of the pre-tower wall (F304) which lay directly below the southernmost joist hole of the south wall.*

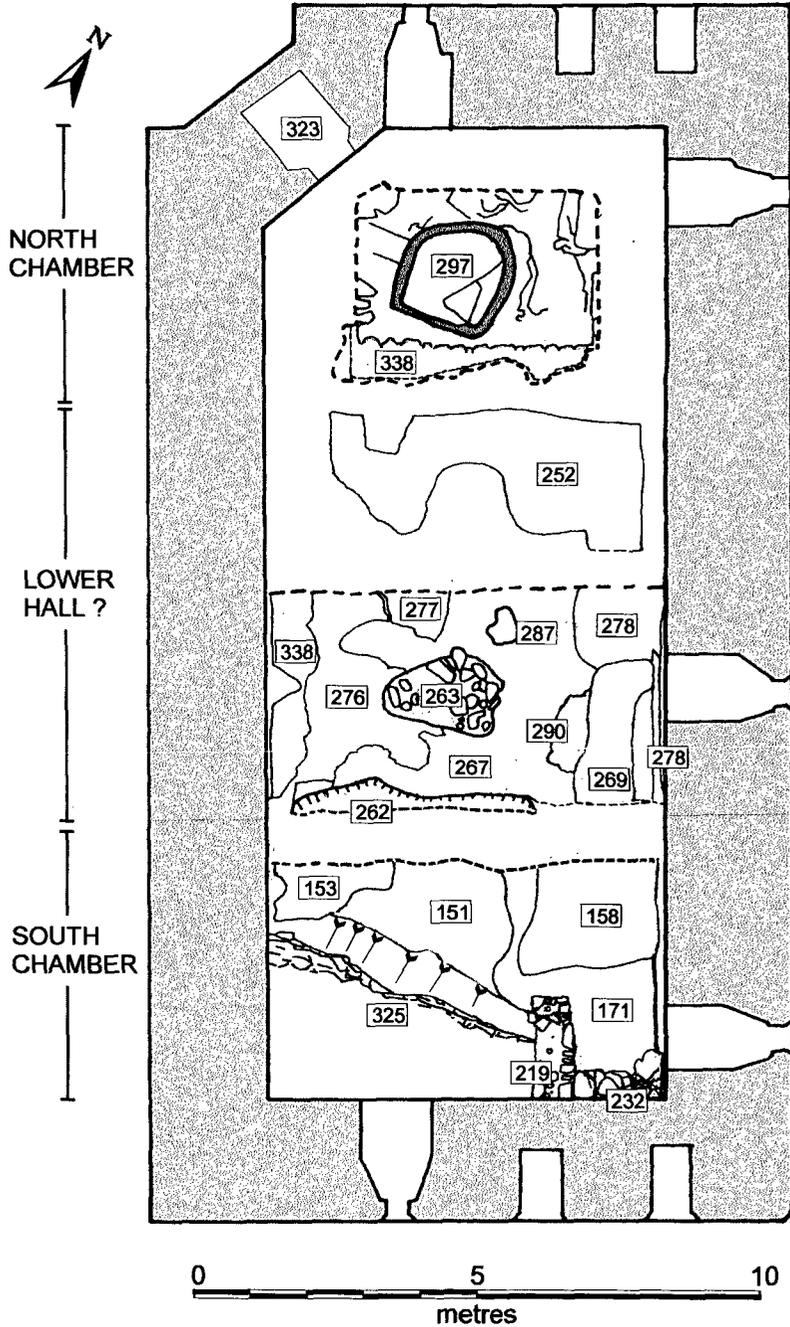
Once the walls were completed, the basement was overspread with a series of tipped and dumped deposits, primarily gravel from the nearby beach, which levelled the uneven bedrock to form a series of floor surfaces (F276, F277, F267, F290). To the north and south of the interior, dumps of mason's waste were used as infill and levelling over the generally deeper declivities at the extremities of the site. To the north a compact deposit of fine sand and stone (F252) infilled the area adjacent to the present doorway and the area south of the vaulted prison (Period 3, below). This deposit also yielded mason's waste in the form of stone off-cuts and fragments. To the south, following the erection of the main walls, a revetment of clay-bonded rubble (F219) (a feature partly adapted from Period 1) was built to contain the sunken area created by the quarried bedrock edge, and to retain a levelling spread of shingle gravel above this (F171). Over the general interior, surfaces comprised localized spreads of material (F263, F287), reflecting tip lines and periodic infill, rather than zones of use within the basement area. A complex series of interleaved deposits was spread over the area to the north of the revetting wall as far as the great intrusion which would later be created by the Period 3 vaulted prison. A stony dump (F236) was used to infill a more general depression towards the middle of the basement. Altogether these dumps of redeposited natural materials, whether from the beach or from the rock itself, formed the basic level for the earliest subsequent occupation horizons.

South chamber A steep-sided slot (0.6 m wide by 0.15 m deep) was cut into the bedrock and lay east/west across the basement floor over a span of c 4 m (F262). This probably represents a division within the basement in Period 2 by the erection of a timber screen. It appears to have created a chamber to the south which was partly floored in timber, with joists indicated by recesses in the south wall (F307–F310; illus 7). The timber floor itself appears not to have extended beyond the line of the revetting wall around the edge of the quarried area (F219), as this was partly robbed or cut back in order to receive and retain the timbers. This division of the basement in Period 2 was echoed by a later (Period 3) cross-wall in mortared stone.

North chamber Although much damaged by later building works during Period 3, there was good evidence for a sunken chamber, similar in size to the south chamber, located at the northern end of the basement from this early period. This space was ultimately used for the internment of prisoners, but it is likely that it was originally planned as part of the accommodation for the household, featuring a fine garderobe (F323) and rock-cut cistern (F297). Only some remnants survived of the wall (F338) which divided this chamber from the more open, central area of the basement, to the south. (These remnants were later incorporated as footings for the south wall of a vaulted prison in Period 3.)

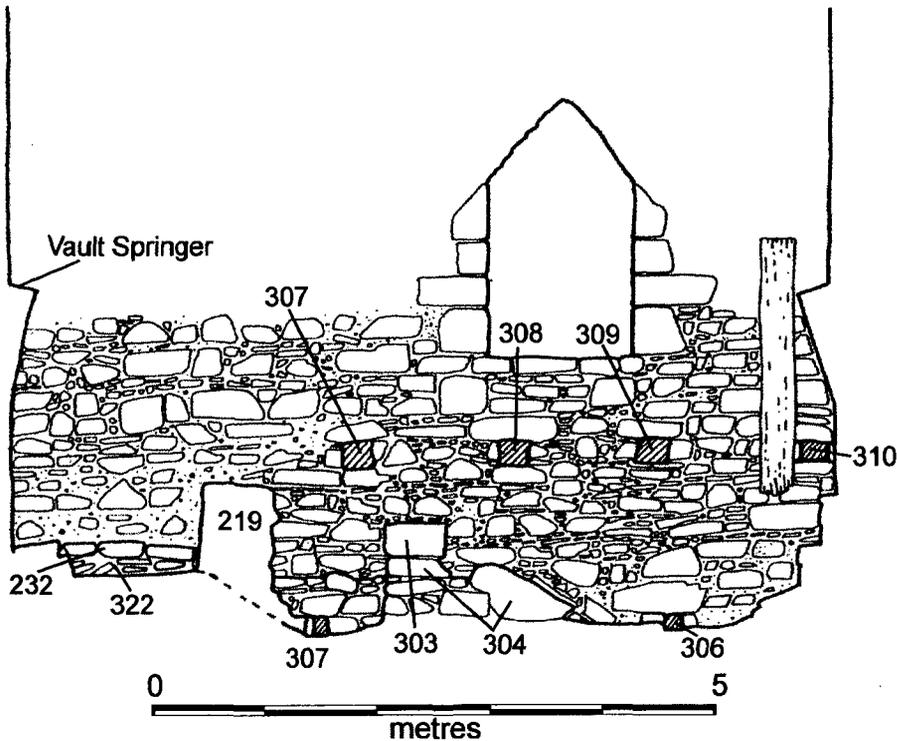
Garderobe A complex garderobe chamber (F323) was built within the north-west corner of the tower, at the base of the corbelled masonry accommodating an angled corner to the exterior north-west corner. Five steps, rising SE/NW, gave access to the garderobe chamber from the basement interior. Within the chamber a C-shaped carved stone formed a seat, with the chute below angled at 45 degrees to issue at the outer wall face.

Rock-cut pit Towards the middle of the adjoining north chamber a deep, subcircular, rock-cut pit was revealed (F297). This was cut within the floor of an already sunken area in the bedrock, defined on its south side by walling. There was some evidence for a recessed cover or grill, suggested by a slight cut in the bedrock around the edges of the hole. The pit itself was dug by exploiting a natural fault in the bedrock which allowed the stone to be simply prised away rather than more gradually quarried. Thus, chisel or pick-axe



ILLUS 6 Period 2 features within the basement

marks were clearly visible on three sides, with the south side being quite smooth, in consequence of natural fissuring. The sides of the pit were not vertical, and it widened gradually towards the base; it was 3 m deep and 1.1 m wide at the mouth.



ILLUS 7 Elevation of the south wall of the basement, showing Period 1 & 2 features

The extent of Period 2 deposits within the pit was not absolutely clear, due primarily to the difficulties in extracting the fill systematically. However, two basal fills were noted: the lower fill was a redeposited, clean, grey-green clay which lined the base of the pit; over this a sandy, siltier material had built up, perhaps over an extended period. These fills support the interpretation of this feature as a rock-cut water cistern in Period 2 (though it may later have become a prison cesspit).

Barmkin Although the surviving barmkin enclosure on the east side of the tower is attributed to Period 3, there is some evidence for an earlier walled enclosure in this area. Tusking on the east face of the tower indicates that this was a substantial defensive wall, up to 1.3 m thick and 5 m high. A rubble masonry remnant is incorporated in the footings of the Period 3 east barmkin wall and may represent a surviving part of the Period 2 enclosure.

The present south doorway into the enclosure, and the external stair base (Period 3) are likely to have been revisions of earlier versions. A clay-bonded plinth projecting from the east tower wall at its mid point may be evidence of a timber forestair, while a surviving fragment of a stone springer suggests the site of an earlier arched doorway (not illus).

PERIOD 3: MID 1500S TO EARLY 1600S (ILLUS 8-11)

In this period the basement was again subdivided into three separate chambers or rooms (Rooms 4, 5 & 6), including a vaulted prison which was built over the site of the Period 2 north chamber. The existing barmkin enclosure was converted to accommodate artillery by the addition of a gun loop and possible parapet, forming a simple battery.

Barmkin/gun battery The enclosure on the east side of the tower was probably reinforced at this time by the construction of a massive defensive wall; only part of its southern sector survives (illus 3). This wall featured at least one gunloop towards its south-east corner. The present arched entrance, and a stone plinth lying immediately within the enclosure, defining the east side of the entrance route, appeared to accommodate the new gunloop by providing a firing platform while maintaining access. The wallhead and possible parapet were accessed by an external timber stair, which rested on a section of bonded masonry abutting the inside face of the south-east section of the newly rebuilt barmkin wall.

Room 4: a prison? This new room replaced the Period 2 north chamber and is interpreted as a prison. Its vaulted roof rose to an apex of 1.65 m above the bedrock floor of the chamber and featured an access hatch at its west end.

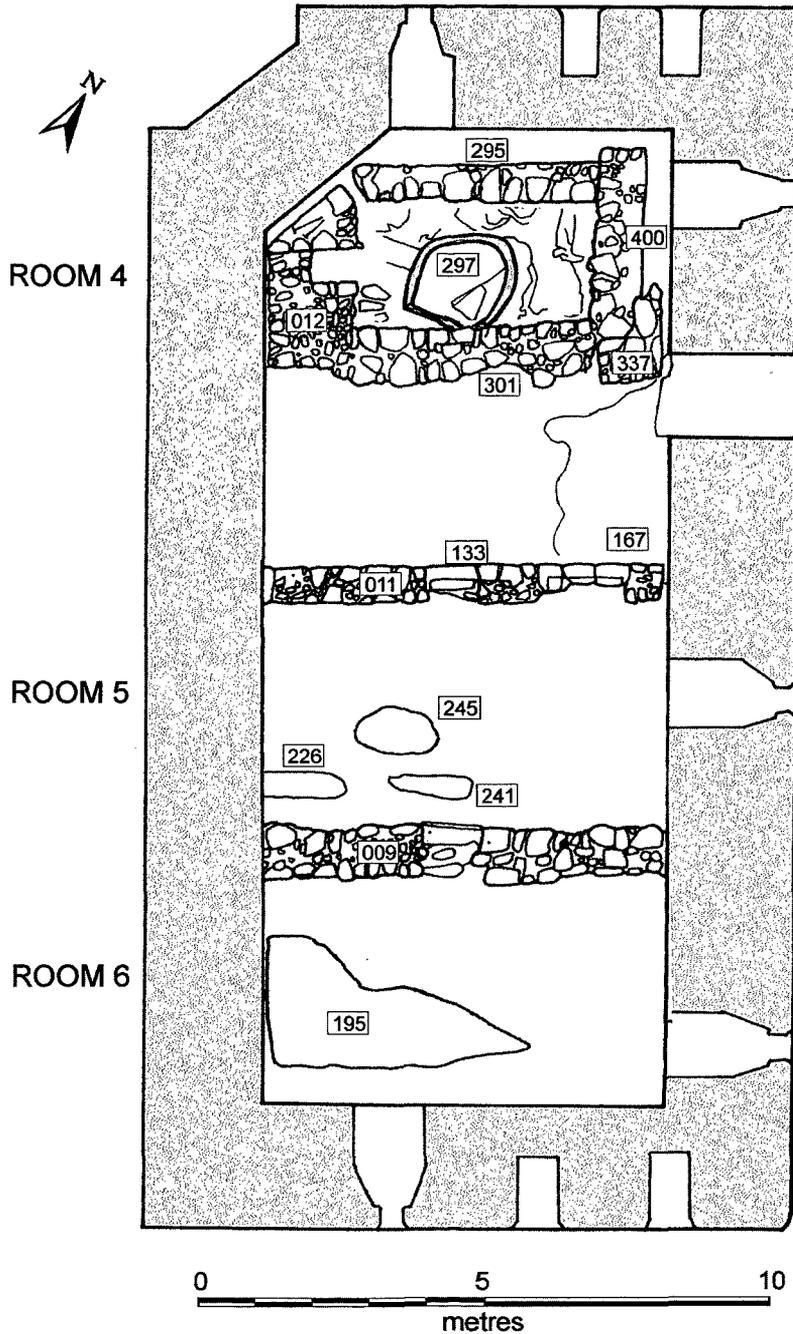
On both the north and west sides (F295 & F012) the new walls were set on and against deposits of clay and gravel. The side walls of the vaulted roof (F295 & F301) were robustly built with large angular blocks bonded with gritty, sandy mortar. The south wall survived to a maximum height of 1.05 m, in six courses, with the curve of the corbelled ceiling evident in the upper two courses. The north wall survived to a height of 1.17 m., although scarring on the adjoining east wall (F337) indicated that it had originally stood over 1 m higher. The east wall incorporated an older, Period 2 wall remnant; the new Period 3 work could be distinguished by the use of smaller stones and cruder coursing. The west wall (F318) included a few examples of recycled sandstone blocks in its general local schistose fabric. This section of masonry (illus 9) was the best preserved of the vaulted chamber walls, and featured a large recessed channel or duct forming an access shaft into the vault interior from its upper surface. The shaft extended to the full height of the parent walling, a height of 2.5 m. An indication of the original floor of the chamber was given by a large set slab forming the base of the shaft.

Within the chamber, the Period 2 cistern was retained as a cesspit. Waterlogged deposits (F283 & F289) within the shaft were interpreted as evidence of occupation of the prison and as dumping of material from its floors. These deposits included a wide range of discarded materials, as well as general midden, including cannonballs, clay pipe fragments and pieces of leather shoes. Clay pipe fragments were also found in floor deposits within the chamber.

Room 5 This chamber was defined by newly built cross-walls (F009 & F011). Cross-wall F009 was of crude construction, being only loosely bonded with gravelly mortar. The stonework comprised locally quarried schist, forming a single course of facing stones retaining a rubble core. The cross-wall extended the full width of the basement, and was 0.7–0.8 m thick, standing only to a height of 0.4 m. There was a simple doorway at the mid point of the cross-wall, defined by a paved threshold. The north wall (F011) was of a similarly crude build and also featured a central doorway, later remodelled.

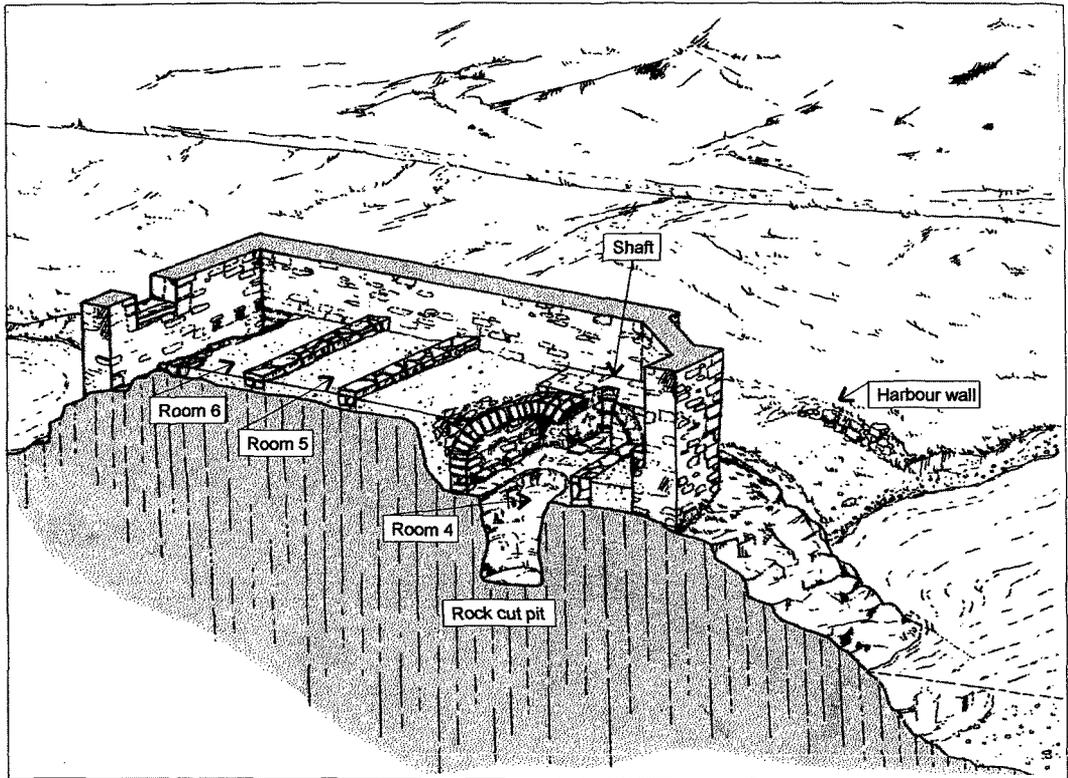
Gravel flecked with mortar had been laid down immediately prior to the construction of these walls and, filling the space between the walls, further floor layers were formed by an accumulation of other mixed gravel and mortar deposits. The Period 2 wall-slot was infilled by the ubiquitous gravel, but two new linear depressions or slot cuts may have been footings for timber partitions within the chamber in this period (F241, 226). These appear to have created a screen around the hearth (F245) which was recorded in the northern part of the chamber. Even less substantial features included patches of grittier sands, areas of relatively higher compaction on the general floor, or patches of clay-rich material.

Room 6 This chamber was created within the south end of the basement by the construction of the east/west wall (F009) described above. The Period 2 wooden floor was evidently removed and the existing revetment wall-heads (F219 & F220) were sealed by a deposit of organically rich clay (F195), which infilled a Period 2 cut feature (F265). (The sequence of these deposits is shown in section by illus 15.) The clay layer, apparently almost liquid when deposited, extended north of the revetment wall to overspread Period 2 occupation surfaces and a cut feature (F265), as well as occupation debris comprising burnt clays.



ILLUS 8 Period 3 features within the basement

Architectural fragments were retrieved from a pit (F192) in the surface of the new clay layer which was otherwise filled with gravel and clay. Overlying deposits (F135 & F123) were the result of slippage of material from more level deposits to the north. Finds evidence suggests that these formed floor surfaces, as



ILLUS 9 Perspective view of the main Period 3 features in the basement

midden material (mainly animal bone) was recovered from them. These deposits were in turn scarped by a cut (F113) and levelled up with gravelly material. Evidence of contemporary Period 3 activity at the south end of the new Room 6 was reflected by occupation deposits (F102, F103 & F106), themselves swept to one side in advance of a series of further occupation horizons (F104, F128 & F129). The latter were not extensive and probably represent areas of more intensive activity on the general parent gravel base (F080).

PERIOD 4: LATE 1600S (ILLUS 12 & 13)

Further modifications in Period 4 created three chambers. Two existing Period 3 chambers (Rooms 5 & 6) were amalgamated into a single larger chamber (Room 9), still defined on the north side by a Period 3 cross-wall (F011). The remaining area north of this (and above the vaulted prison) was subdivided to form two small chambers (Rooms 7 & 8). The southernmost pair of these new chambers (Rooms 7 & 9) were linked by a short corridor running north/south from the main entrance.

At this time, quantities of iron cannonballs were stored within the castle, and the rationalization of the basement interior may reflect industrial activity or storage needs relating to the more military role of the building at this time. In contrast, the primarily defensive nature of the barmkin was redefined to accommodate a domestic north range.

Rooms 7 & 8 The area above the vaulted prison was altered to form two new rooms by the addition of two internal walls (F111 & F013) built with local sandstone, bonded by yellow mortar. (New east/west wall

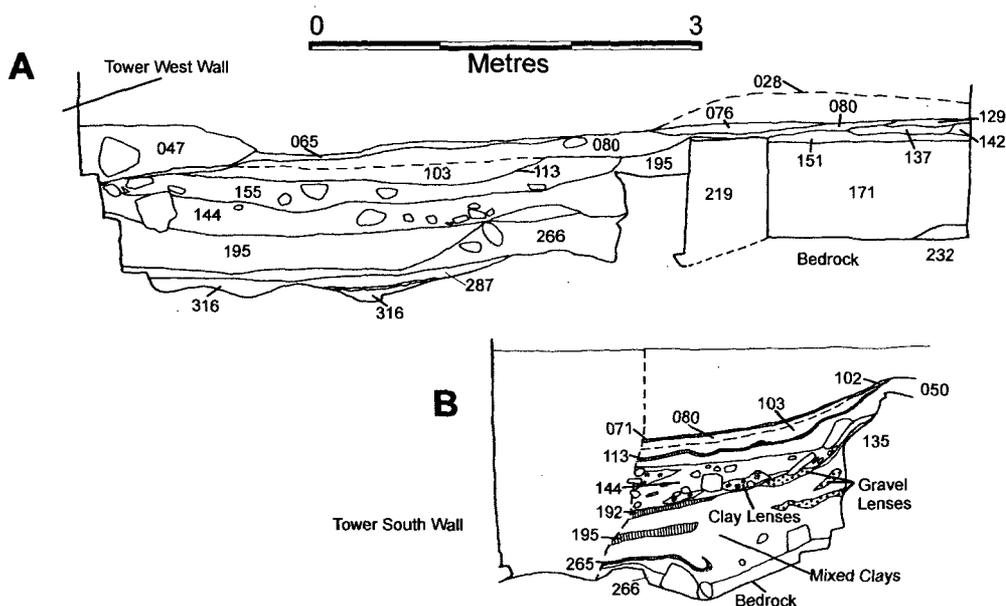


ILLUS 10 The Period 3 prison, with a rock-cut pit in the centre of the floor and a narrow channel (top) giving access via the vaulted roof

F013 was built directly over wall F301 of the Period 3 vaulted cellar.) Access to Room 7 was via a doorway (F130) which led from the porch-like area now existing immediately within the main doorway to the basement from the exterior. This new internal doorway (F130) had sandstone jambs and the door itself would have opened into the chamber. A second doorway gave access to Room 9, to the south. Here, the Period 3 threshold (F133) in the existing cross-wall (F011) was partly infilled with a clay-rich matrix (F190) on which crude rubble masonry (F332) was set. This proved to be the remains of a partial blocking of the earlier doorway, defining a new, narrower entrance. On the north or opposite side of Room 7, access to Room 8 was via a central doorway in the intervening wall (F013).

A series of heat-affected deposits (F143, F152 & F164) indicate *in-situ* burning and may represent a hearth. These overlay the mortar spread (F051) but lay below the construction debris (F124).

Room 9 This chamber extended from the south wall of the tower northwards to the line of the Period 3 cross-wall (F011). As described above, access from Room 7 was via a modified doorway (F133) in the existing cross-wall. A second doorway and threshold were set within a new section of walling (F010) and gave access to Room 9 from the 'porch' immediately within the main basement door. Thus, access to Room 9 could be either via Room 7 or directly from the main door. (This new arrangement may have been a response to the passageway created by the construction of an external stair to first-floor accommodation in the tower and the north range.)

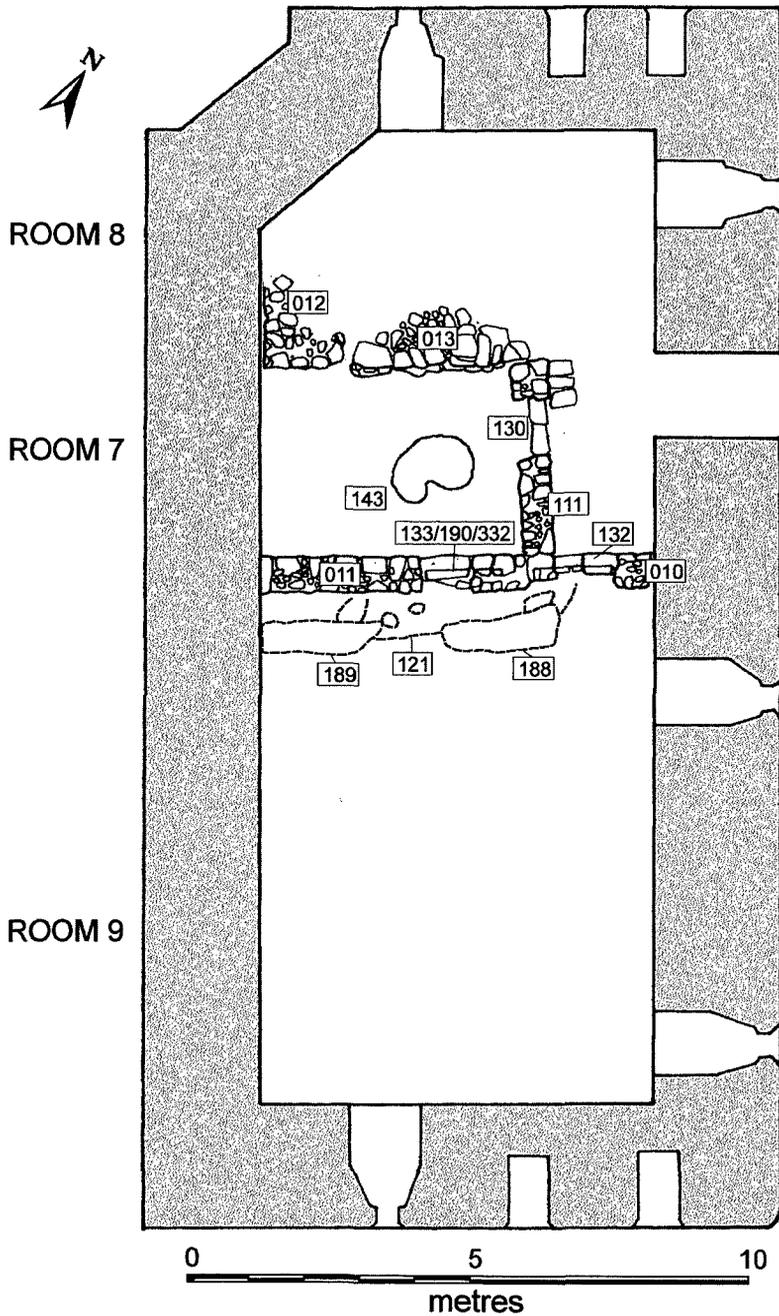


ILLUS 11 Section drawing of deposits in the southern end of the basement

Within the floor, an elongated cut (F189) lay to the south and west of threshold F133. A further cut (F188) lay to the east of the threshold. A shallow, sub-rectangular scoop (F121) was probably associated with the linear cuts above, and lay to the south of the threshold. These features suggest that some sort of timber structure stood within Room 9, or possibly timber screens.

The sequence of floor deposits comprised various dumps of gravel-rich material, the earliest deposits (F251 & F203) being in the north-east part of the chamber. Later levels generally proved to be quite localized, and generally undiagnostic in terms of the use of the room. A complex dump of gravel interleaved with patches of green clay, up to 140 mm deep (F145/F146), is significant, however, as this was the last occupation surface within the room in this period. The range of artefacts on and within this deposit suggested rapid and sudden abandonment. One general dump (F097) included a quantity of pot sherds, animal bones and iron objects. The most notable object was a copper-alloy still worm found in 1993 (Baker 1993); this has already been described in detail by Haynes *et al* (1998).

North range (illus 3) In the barmkin enclosure, the Period 3 north rampart was dismantled to allow construction of a new domestic range abutting the east face of the tower. The outer walls (east and north) of the new building were of distinctly lighter build than the Period 3 work in the rampart wall. The east gable of the building still stands to almost its full height and the line of the other gable is plainly visible as a 'raggle' line in the wall face of the tower. There were two rooms at ground-floor level. These were of equal size and both appear to have had barrel vaults, supporting two rooms overhead at first-floor level. Access to the barrel-vaulted ground-floor chambers was via doorways in the south wall, opening into the courtyard. A large fireplace occupied all of the north wall of the east chamber, and necessitated the thickening of the north wall. The floors of both rooms were bedrock, levelled or dressed with a variety of patchy deposits. Gravel, clay and mortar were all in evidence within the west chamber, along with a crude stone-flagged surface. The east chamber was not excavated as fully, but there was sufficient evidence to show that similar floor surfaces were in place. Both chambers were infilled with a burnt debris up to 0.2 m deep. The finds (below) from this deposit suggest a late 17th-century abandonment.



ILLUS 12 Period 4 features within the basement

External stair (illus 3) First-floor access to the tower and the upper level of the north range was achieved via a new external newel stair built in stone. This was built from the courtyard level, immediately to the east of the basement door. The three lowest steps were found *in situ*, confirming a clockwise ascent towards the east tower wall, over a passage leading to the basement doorway. Evidence was found for two separate



ILLUS 13 Remains of the walls and entrance to Room 7 from west; the main external doorway to the basement is also shown (top)

doors serving this passageway, one located at the east end of the passage, and the other in the tower interior. The doorway within the thickness of the east tower wall featured four steps up to the basement threshold, a level effectively unchanged from Period 2.

PERIOD 5: EARLY 1700S TO PRESENT

Period 5 saw the most serious episode of demolition suffered by the castle, ascribed by tradition to an attack by the *Kingfisher*, under Captain Hamilton, in 1685. Certainly Hamilton described the castle as having been burnt and demolished to an extent which rendered it useless to the rebels led by the 9th Earl of Argyll (RCAHMS 1992, 235). This event was followed by a long period which seems to have been characterized only by transient or casual occupation of the castle, and by the ongoing decline of the fabric of the building. This was arrested by a programme of consolidation works undertaken c 1900. Today, the castle has been fully restored by its present owner, Alex Fleming.

Casual occupation The extent of the damage was apparently sufficient to render the tower and barnkin no longer viable as a military installation, but was clearly not so great as to render the main structure completely uninhabitable. This is suggested by the apparent continuity of use of the tower interior (whether roofed or not), characterized by a generally more untidy or messier environment. This probably reflects a period of casual occupation, in which the partly ruined structure was used for activities associated with fishing/poaching and possibly production of illicit whisky.

A series of crude post-settings and possible slot cuts suggested that there had been flimsy structures within the basement at this time. The post-holes excavated appear to reflect the extraction of the posts themselves rather than their *in-situ* decay. A pit in the south-west corner of the basement contained sherds of 18th-century china ware. There were spreads of coal throughout, as well as clay pipe fragments of 18th- or early 19th-century date. In the central and northern parts of the chamber the masonry of the Period 3 and Period 4 cross-walls was partly robbed-out and a humic soil layer developed over the scattered spreads of coal and mortar debris. This deposit probably accumulated as a result of the now roofless state of the tower, within which weeds and grass could grow freely.

Consolidation c 1900 Soon after its attack by the *Kingfisher*, the entire complex, both inside the tower and within the barmkin enclosure, began to suffer stone robbing, probably over an extended period. This process carried on piecemeal, providing stone for construction of nearby farm buildings into the later 19th century.

Collapse as well as robbing contributed to the decline of the buildings. At some stage prior to its inspection by the architectural historians MacGibbon and Ross in the later 19th century (1887–92, vol 3, 190, fig 126), the tower suffered extensive collapse from the upper floors, to the extent that it was infilled with debris to first floor level.

This collapsed material was cleared c 1900 during a programme of repair and consolidation in which the fabric of the monument was comprehensively repointed. Excavations within the north end of the basement were probably undertaken at this time and resulted in a deep irregular trench which cut through the collapsed remains of the Period 3 and Period 4 structures, towards the Period 2 garderobe. The outlets for this would have been plainly visible at the external north-west corner of the tower. These earlier excavators dumped spoil both in the garderobe chamber and via the external chutes, and backfilled their large irregular cutting with mixed debris, thus adding to the contamination of features within the vaulted prison. More recent trial excavations in 1992–3 added another level of disturbance to the sequence of building, occupation and abandonment which could only be fully revealed when the site was completely opened in 1996.

In the barmkin enclosure, the north range collapsed shortly after the attack by the *Kingfisher*, sealing the area in deep deposits of rubble. These were not cleared during the consolidation works c 1900, allowing a clearer picture of the archaeological sequence to the late 17th century to be achieved than could be obtained in much of the tower interior.

FINDS

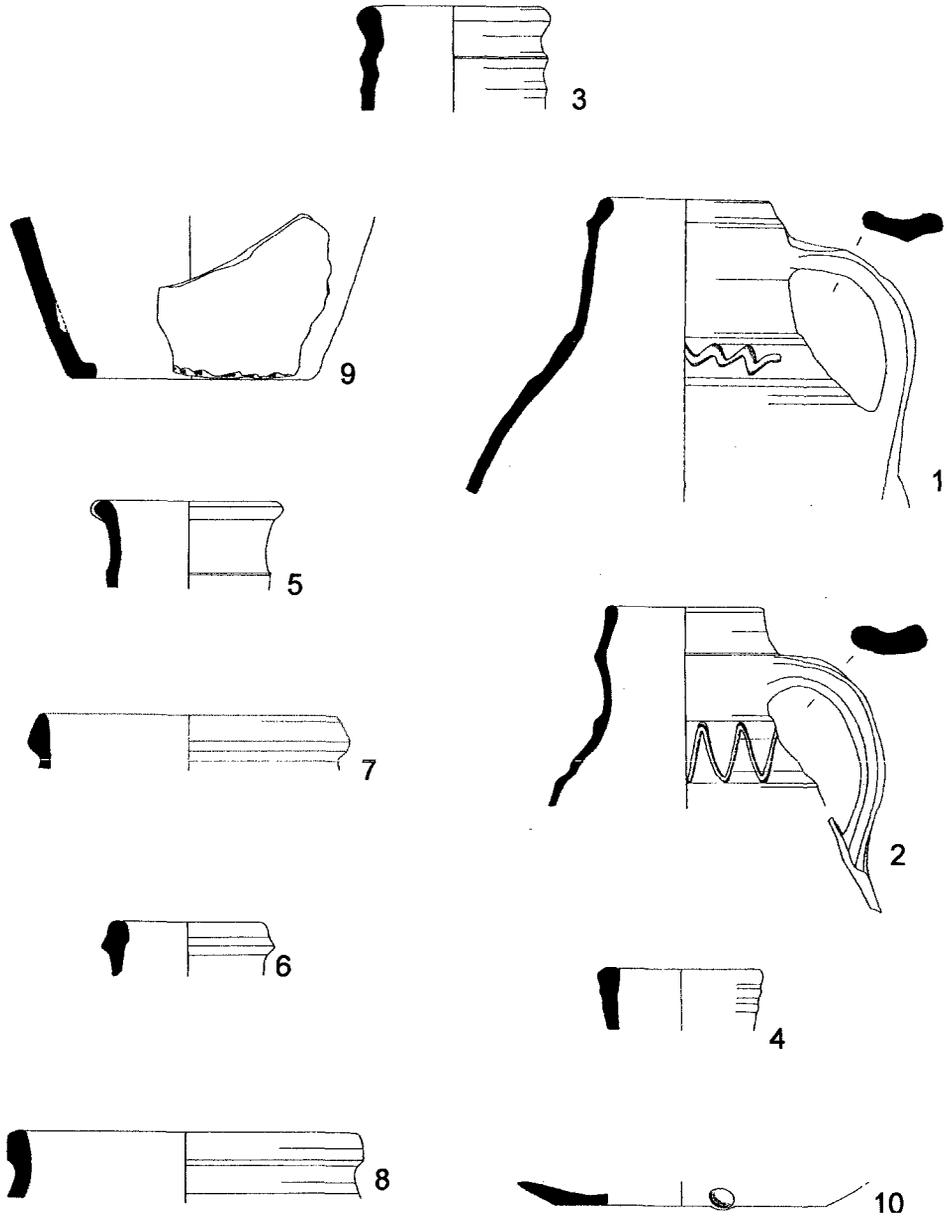
Julie Franklin

with contributions by M Cressey, B A Crone, N M McQ Holmes, R Murdoch & N Ruckley

The finds assemblage, though not large, produced some high-quality objects, including a good collection of French pottery. Though preservation was generally poor, the waterlogged conditions in the stone-cut cistern (latterly a cesspit) preserved a large volume of wood and other organic material, mainly structural remains. Only a selection of the finds is described here; a full finds catalogue can be consulted in the project archive at the National Monuments Record of Scotland.

POTTERY (ILLUS 14–16)

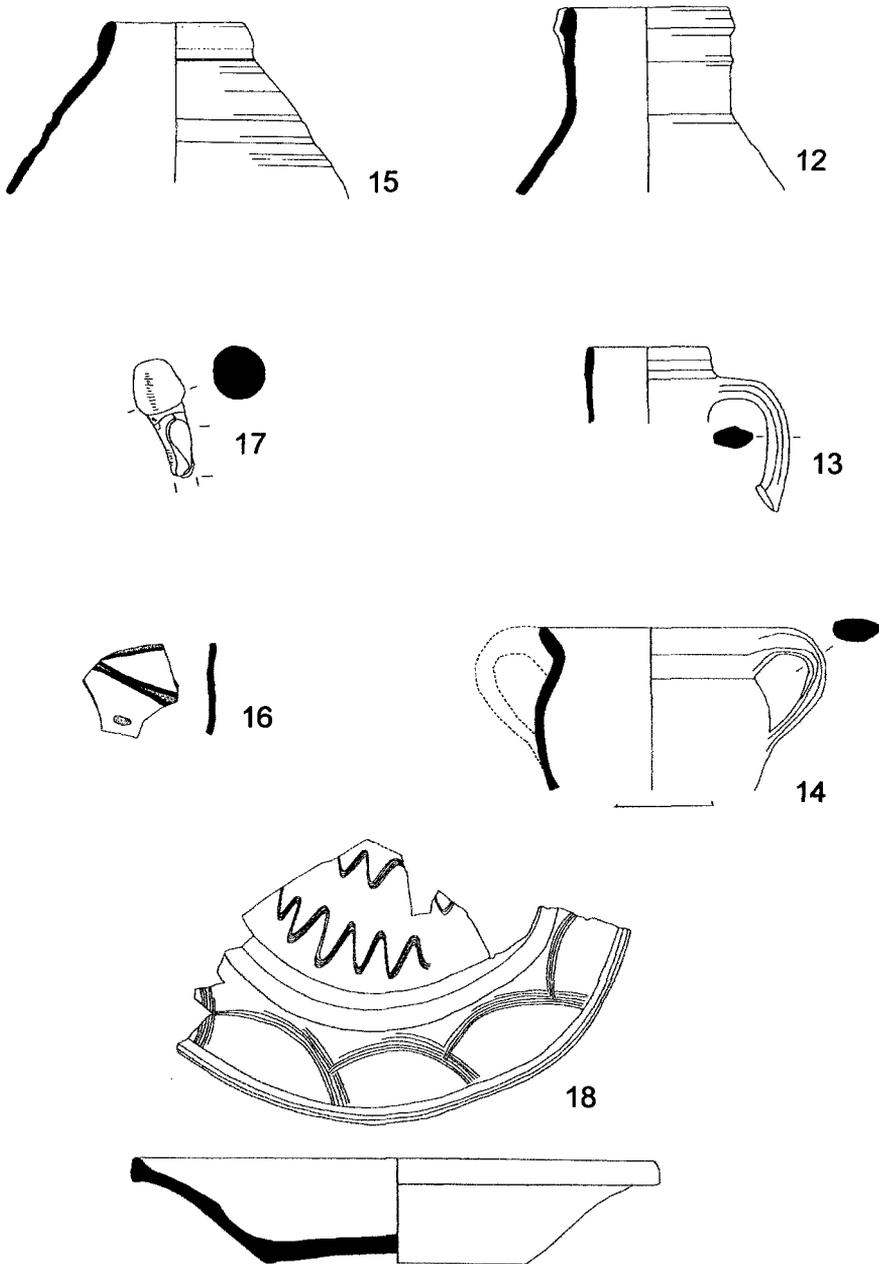
The excavation produced 1254 sherds of pottery, which reduced to 1149 sherds when joining sherds were eliminated from the total. The majority of the assemblage comprised the typical grey, sandy, green-glazed fabric of western Scotland. The only other significantly large group was a group of redwares which may have come from eastern Scotland. Of the 63 imported sherds, almost all were from France, illustrating the general affinity between Scotland and France and the west coast pattern of trade in particular.



ILLUS 14 Pottery (scale 1:4)

Scottish wares

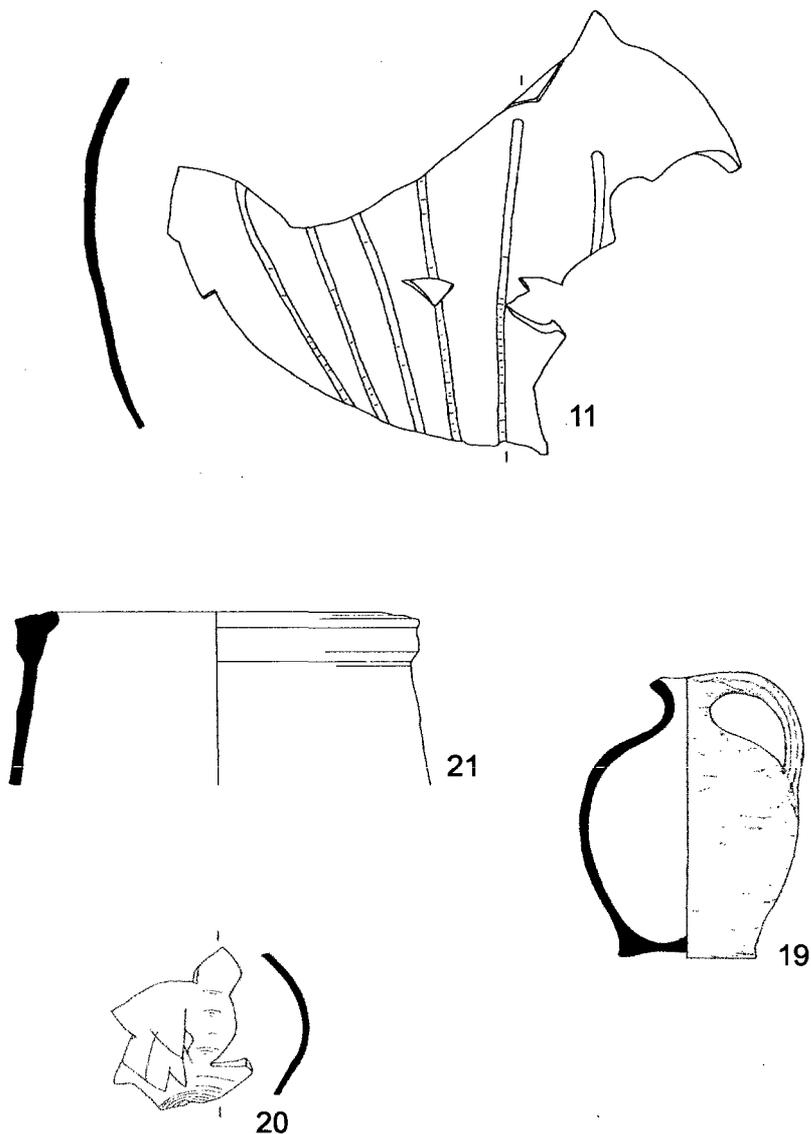
The reduced, sandy, green-glazed sherds which formed the majority of the assemblage represent a common fabric in western Scotland in the later medieval and early post-medieval periods. This reduced ware was the dominant fabric in medieval Ayr (Franklin, forthcoming: a) from around the 14th century and the typical fabric at Bothwell Castle (Cruden 1952). Remains of one jug were found in a much smoother green-glazed greyware, soapy smooth to the touch, similar in



ILLUS 15 Pottery (scale 1:4)

appearance to the pottery produced at Throsk in the early 18th century (Caldwell & Dean 1992), though much thinner walled. It seems to have been early in date with sherds concentrated in Period 2 deposits.

The redwares form a more heterogeneous group, varying from fine sandy to coarser gritty fabric, glazed either green or orange. On the east coast, redwares are found in the later medieval



ILLUS 16 Pottery (scale 1:4)

period, though no kiln sites have been found at all. At Carrick this fabric seems to peak in abundance during the 16th century, but given the relatively low sherd count, this statistic should be viewed with caution.

Vessel forms present are mainly jugs with a few cooking pots. The reduced ware cooking pots were plain and internally glazed, often with signs of heat damage on the base. Judging by rim forms there was a higher proportion of cooking pots in the redware assemblage with several examples of handled rims. However, none of these showed any signs of heat damage and so were possibly intended for some other use, such as storage or chamber pots. The only vessel that fits into neither of these forms is a coarse redware jar with a narrow neck, possibly a urinal.

Decoration was limited to the reduced ware jugs. It almost all consisted of the usual incised wavy lines, though one sherd with applied decoration in the shape of a small hand, the type found on medieval vessels from Yorkshire, was found in an early level (Period 2). The smooth greyware jug differs from the rest in that it has applied notched strips, coloured brown, running vertically down its belly. Redware jugs were not only plainer, they also tended to be smaller with ridged handles instead of straps.

Six sherds of white gritty ware were found and were probably residual inclusions from an earlier period. One was so abraded that it looked as if it had been picked off the beach. Though traditionally thought of as an east coast product, white gritty ware is also found on the west coast and was possibly produced somewhere in western Scotland during the earlier medieval period. It was the most common find at the castles of Auldhill and Dundonald in Ayrshire (Franklin, forthcoming: a & b) and it was common in Ayr before being overtaken by local reduced wares. A complete white gritty jug was dredged up recently from Loch Long, immediately opposite the castle (Will unpubl). The fact that so little was found at Carrick suggests that by the late 14th century its production in the west was waning.

Imports

Some of the imports are associated with trade in various commodities and were probably imported for their contents rather than for the pots themselves, but others were clearly of no use as containers and would have been commodities in their own right, namely a number of platters and a chafing dish.

The most common imported vessels were large white earthenware hammer-headed platters from Beauvais in northern France. They were decorated with comb-incised lines and glazed on the upper surface in thick, uniform, bright glazes, either yellow or green. Several sherds, including a half-complete platter, were discovered during Baker's excavations in 1993 (no 18). Taking all of these into account, there were at least one yellow and no less than three green-glazed platters. Pottery of this type more often has sgraffito decoration, but there is a growing group of these green or yellow types from sites on the west coast of Scotland from which sgraffito types are completely absent. A green-glazed rim was found by excavations in Ayr (Franklin, forthcoming: a). At Whithorn there were at least three green-glazed vessels, and one yellow-glazed rim (Clarke 1997, 515). The main period of production for this pottery centred on the first half of the 16th century (Hurst *et al* 1986, 106).

Six sherds of another plate were found, probably also from France and probably of roughly comparable date (G Haggarty, pers comm). The white fabric was badly spalled and the glaze was in bad condition, but appeared to be a thin, clear, lead glaze. There are hints of blue lines under the glaze which could be painted decoration.

The chafing dish was in a relatively coarse white fabric covered in a bright green speckled glaze. The only diagnostic sherd is a knob from the rim, very similar in shape to one illustrated by Hurst *et al* (1986, 82) which is also covered in apple-green glaze and dated to 1575–1625. Chafing dishes were pedestalled bowls produced in France in the 16th and 17th centuries and used to keep food warm at the table with hot coals placed inside the base. The Carrick dish probably dates to earlier rather than later in the known range (G Haggarty, pers comm). A flat-ridged handle sherd of very similar fabric and glaze was recovered from late 14th/early 15th-century deposits (Period 2) and this, along with a possible bridge spout fragment, may represent an earlier jug.

There are several conjoining sherds from a Loire jug and several more possibly from another vessel, all concentrated in 17th-century layers (Period 4). Interestingly, neither of these

match the Loire jug found in 1993 (no 19), indicating that there were at least two or three of these vessels in the castle. Small, narrow-necked jugs from central France were produced in the 16th and 17th centuries with a distinctive joined handle and rim shape. They are far more common on Scottish sites than English, a fact usually attributed to the Auld Alliance (Hurst *et al* 1986, 100).

Probably the earliest pottery from the site, and the only find which can be dated confidently to the period before the castle's construction, are two conjoining sherds from a Saintonge polychrome jug. These distinctive jugs were usually painted with heraldic, vegetal or bird designs, in green and brown under a thin clear glaze. At Southampton they were present in deposits dating only to the hundred years between the mid 13th and mid 14th century (Platt & Coleman-Smith 1975, 26). However, such high-class tableware could have been in use for some time before it was deposited.

Loire and Saintonge jugs are generally associated with the wine trade, though the small size of Loire jugs also suggests some other commodity. Where similar jugs are still made today in France they are called 'oil jars' and were once possibly traded with olive oil (Hurst *et al* 1986, 100). The Loire jug had markings scratched into its belly post-firing. Loire jugs are not generally decorated and the scribbled lines are presumably not meant as such. They could represent a merchant's mark. Similarly, on the base of one of the Beauvais platters there is a fragment of a scratched mark which looks like an arrow.

The only other significant imports were three undiagnostic sherds of probable Dutch origin; four sherds from an English, manganese-glazed, red earthenware storage jar; one sherd of Westerwald stoneware; and one sherd of a Martincamp flask. The latter is of 16th or 17th-century date; the earthenware and stoneware probably of 17th-century date (Will unpubl).

TABLE 1

Pottery sherd count per period with percentages of the total sherd count for each period (where > 1%)

<i>Period</i>	1	2	3	4	5	Total
<i>Scottish wares</i>						
White gritty		1	3	1	1	6 1%
Reduced green-glazed		50 69%	245 69%	536 84%	56 65%	887 77%
Smooth greyware		13 18%	3 1%			16 1%
<i>Imported wares</i>						
Redwares		6 8%	78 22%	58 9%	6 7%	148 13%
Saintonge polychrome (mid 13th to mid 14th century)			2			2
Beauvais (early 16th century)			14 4%	24 4%	3 3%	41 4%
French clear-glazed (?16th century)			2	3	1	6 1%
French green-glazed (16th century)		1	2	3	2	8 1%
Loire (16th/17th century)			1	8		9 1%
Red earthenware (?17th century)				3	1	4
Other		1	3	1		5
19th & 20th-century wares				1	16 19%	17 1%
Totals	—	72	353	638	86	1149

POTTERY CATALOGUE

Reduced green-glaze ware (illus 14)

- 1 Jug rim, handle and shoulder. Incised decoration and patchy thin olive green glaze on exterior. F107. Period 4.
- 2 Jug rim and handle. Incised decoration and all over olive green glaze on exterior. F107/F169/F170. Period 3/4.
- 3 Jug rim. External brownish green glaze. F043. Period 3.
- 4 Jug rim. External brownish green glaze. F144. Period 3.
- 5 Jug rim. External patchy olive green glaze, below rim. F196. Period 3.
- 6 Jug rim. Burnt on exterior, spots of burnt glaze. F198. Period 3.
- 7 Cooking pot rim. Internal green and orange glaze. F099/F145. Period 4.
- 8 Cooking pot rim. Brownish green glaze on inside and patchily on outside. F103/F118. Period 3/4.
- 9 Jug base. Badly made with finger marks on base. Patchy external olive green glaze. F162. Period 3.
- 10 Cooking pot? base. Single finger pinch at edge of base. Spots of burnt glaze on exterior. F171. Period 2.

Smooth greyware (illus 16)

- 11 Jug shoulder and belly. Applied notched strips. Glazed olive green on exterior, showing brown over strips; glaze thinner towards base. F287. Period 2.

Redwares (illus 15)

- 12 Jug rim. Thin external orange glaze below rim. F091/F198. Period 3/4.
- 13 Jug rim and handle. Patchy external olive green glaze, wearing off handle. F092/F165. Period 3/4.
- 14 Cooking pot rim and handle. Patchy olive green glaze on exterior and over to the inside of the rim. F118. Period 4.
- 15 Urinal rim and shoulder. All over thin orange glaze on exterior. F091/F092/F096/F146/F196/F198/F227. Period 3/4.

Saintonge polychrome ware (illus 15)

- 16 Jug body sherd. Pale buff fabric painted with areas of pale green within brown lines, under a thin clear glaze. F144/F195. Period 3.

Saintonge green-glazed ware (illus 15)

- 17 Knob from chafing dish rim. Glazed inside and out with thick speckled bright green glaze. F228. Period 5

Beauvais earthenware (illus 15)

- 18 Platter. All over green glaze on upper surface, and comb incised decoration. F031 (Baker 1993). Period 3.

Loire jug (illus 16)

- 19 Jug rim, handle and base. Unglazed. F006 (Baker 1993). Period 3.
- 20 Jug belly. Unglazed, scratched marks on exterior. F097. Period 4.

Manganese glazed earthenware (illus 16)

- 21 Storage jar rim. Glazed over most of external and internal surface with metallic brownish purple glaze. F002. Period 5.

COINS (NOT ILLUS)

N M McQ Holmes

James 4 billion penny 2nd issue, type IVd (c 1500–10). 1.14 g; die axis uncertain. Some surface corrosion; slight wear; probably deposited by c 1515. Unstratified. SF148.

Charles II copper turner (two pence Scots), 1663 issue. 2.08 g; die axis 1.0. Uneven striking; moderate wear; probably deposited by c 1690. F107. Period 4. SF037.

Charles II copper Irish halfpenny (1683). 7.21 g; die axis 11.5. Slight surface corrosion; moderate wear; probably deposited by c 1700. Unstratified metal detector find. SF431.

COPPER-ALLOY OBJECTS (ILLUS 17)

Apart from three coins (above), 20 other objects of copper alloy were found, though of these 10 were unidentifiable, being simply pieces of wire or sheet metal.

- 22 **Brooch** Flat ring brooch cut from sheet metal. The internal edge is circular, the external polygonal with concave sides. Originally it was probably octagonal in shape, in keeping with similar brooches, with the two ends overlapping and kept in place by the pin loop. The pin is missing along with one of the sides and the frame has been pushed together a little. There is simple engraved decoration on both sides, which probably covered the whole surface, though it has been partly removed by corrosion. The corners also show remnants of silvering (AOC 1992). Width 55 mm, internal diam 43 mm. F107. Period 4. SF52.

The brooch is similar to one found at Urquhart Castle (Samson 1982, 474), though the internal edge of that example is not strictly circular, and the decoration is confined to four panels on alternate sides. Callander (1924, 183) dates this brooch to the 14th century and sees it as part of a development from his Type II octagonal brooches to flatter, wider designs. Samson (1982, 473) suggests a 14th- or 15th-century date. There is also a brooch in the collection of the National Museums of Scotland, from Mull, larger and in silver, but of similar shape dated to the 15th or 16th centuries (NMS 1966, fig 19). In practice there is little to corroborate any of these dates as neither brooch was precisely provenanced. It seems to have been quite a common form across Europe during the medieval period (D Caldwell, pers comm). These type of brooches tend to be decorated either with vegetal scrolls or an inscription with a religious theme (eg 'Iesvs Nazarens Rex Ivdeorvm', 'Ave Maria'). The lettering can be seen to undergo degrees of debasement as it was copied by illiterate craftsmen. On the Urquhart brooch the letters 'M', 'V' and 'N' can still be made out, though in no meaningful arrangement.

- 23 **Buckle** Small simple round-framed buckle, possibly with a central bar, though this is probably the remains of the pin. Extremely corroded, but there is some evidence for silvering. Its small size suggests it was a shoe buckle. Diam 18 mm, width 3 mm. F144. Period 3. SF235.

- 24 **Bell** Small clapper bell, open ended with a pointed loop, complete but for the missing clapper. Cast in one piece, except for the strut for the clapper, made from iron. Decorated with two parallel engraved lines, just below the shoulder. Height 45 mm, diam at base 40 mm. Unstratified. Period 3/4? SF273.

Small conical clapper bells have been around in northern Europe since Roman times and there is at least one Scottish example from a datable feature. This is from Iona and was recovered from a pre-Viking deposit which is dated to between AD 563 and c 800 (Reece 1981, 23). It is smaller and plainer than the Carrick bell, with a clapper made of rolled sheet copper alloy. More similar in shape are a bell found on the hillfort of The Dunion in Roxburghshire and one from near Linlithgow Palace, both with iron clappers. Both are unstratified, but from their curved profile, echoing full size church bells, it can be assumed that they have a later, medieval date (D Caldwell, pers comm). The use of these bells can only be guessed. The quality of the workmanship suggests they were more than cow bells. Possibly they had some religious use.

- u/n **Bronze vessel (not illus)** Two rim sherds, possibly of the same cast bronze skilnet, came from two separate features (F096, Period 4; F103, Period 3). Both had the typical everted rim, with a rim diameter of 200 mm.
- u/n **Lace tags (not illus)** Four lace tags were also found, though only one was complete (no 107, Period 4). They varied in length from 13 mm to 21 mm. All were made with simple edge-to-edge seams and one (no 171, Period 2) had a neatly finished free end. Lace tags are a common find on sites of this period and tend to date between the 15th and 17th century, though they can be present in earlier levels (Goodall 1983, 232; Oakley & Webster 1979, 262).
- 53 **Still worm** A copper-alloy still worm was found towards the south end of the castle interior (Baker 1993). It dates from the mid 17th century (Period 4) and has been described in detail by Haynes *et al* (1998).

LEAD OBJECTS (ILLUS 17)

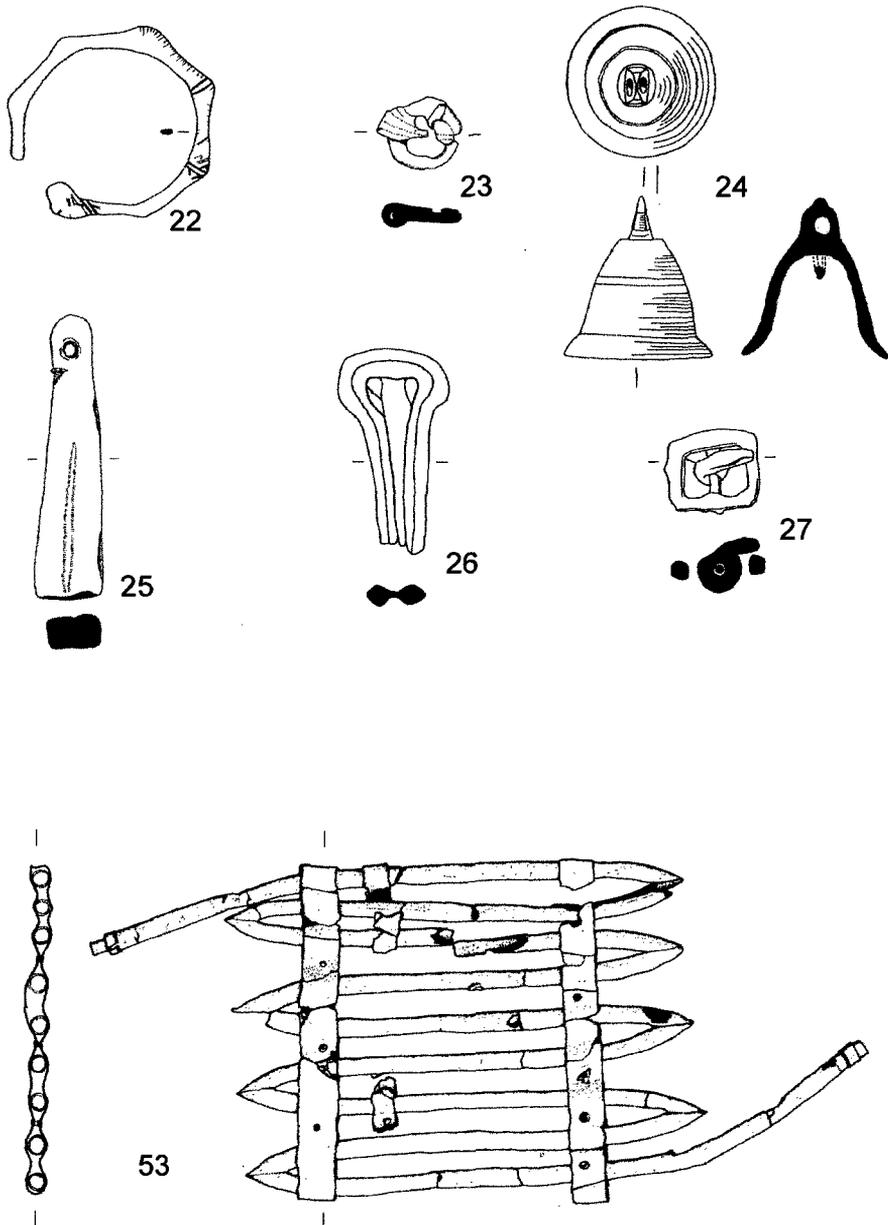
Of the nine pieces of lead found, most were unidentifiable lumps or scraps of sheet. The only objects which stand out are a weight, possibly used for fishing, and a couple of pieces of lead shot (discussed with the other military finds, below).

- 25 **Weight** Long rectangular sectioned piece of lead, tapering to a narrow rounded end. A small hole has been pierced through the narrow end and there is a shallow groove down part of the centre of one side. Length 75 mm, width 19 mm. F283. Period 3.

Objects such as these are hard to date and probably did not vary much over time. However there was a similarly shaped, though larger lead weight found in a post-medieval layer of the Queen Street midden area in Aberdeen (Stones 1982, 188).

IRON OBJECTS

Next to pottery, iron objects were the most common finds on site, with 622 individual objects recorded. Unfortunately their poor state of preservation meant that nearly half of these were unrecognizable. Most of the rest are either structural finds (mainly nails) or military objects (mainly cannonballs) with a handful of tools, one buckle and a Jew's-harp. The general miscellany of objects is described here; the military objects are described in a separate section, below.

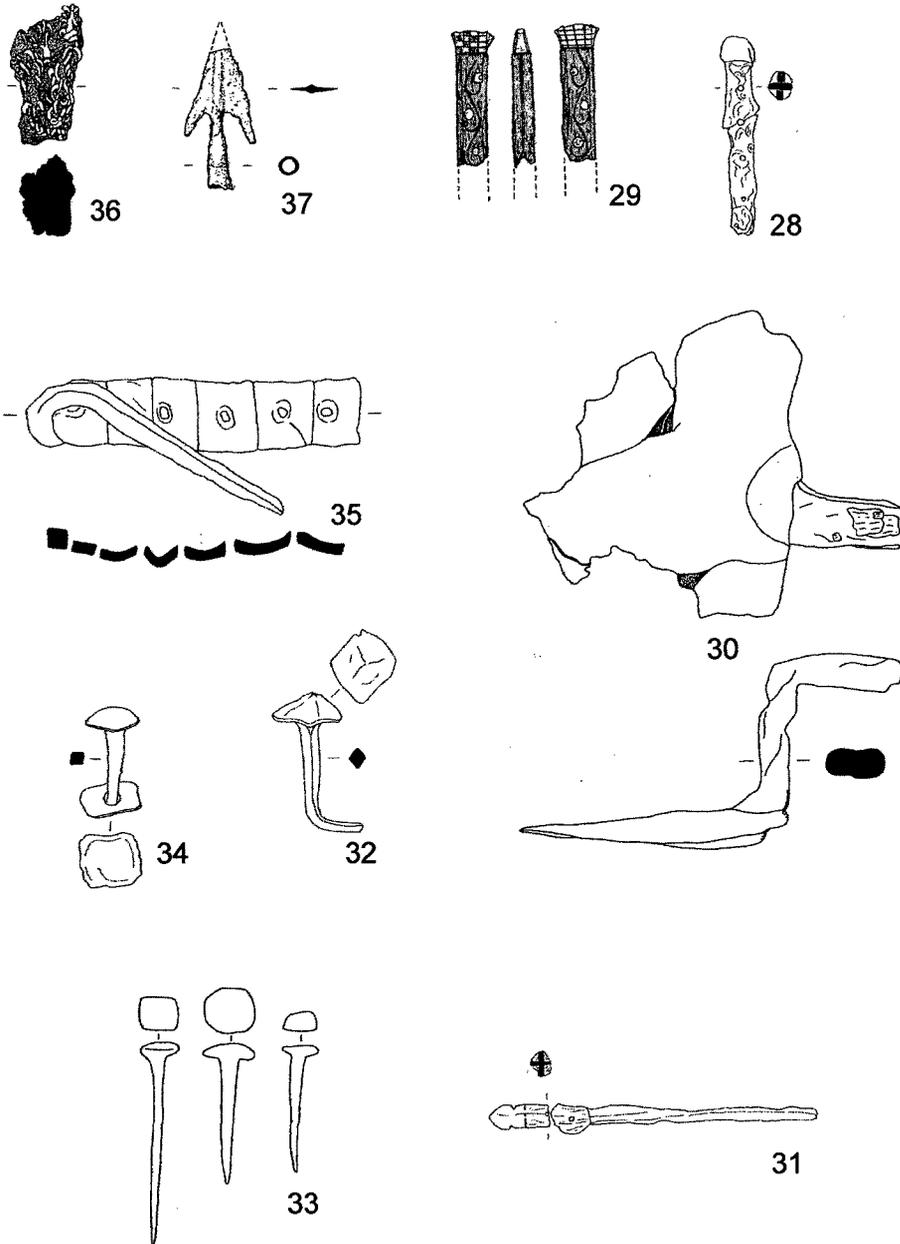


ILLUS 17 Copper-alloy, lead and iron objects (scale 1:2; except no 53 at 1:4)

Miscellaneous (illus 17)

26 **Jew's-harp** Complete but for the broken tip. It is made from a square sectioned rod, with a flat tongue and a relatively flat triangular butt end. Length 57 mm, width 30 mm. F117. Period 4. SF068.

To the writer's present knowledge only four other Jew's-harps are known from archaeological contexts in Scotland; interestingly, three of these are also from the south-west, at Whithorn



ILLUS 18 Iron objects (scale 1:3)

(Nicholson 1997, 431), Castle Sween (Ewart & Triscott 1996, no 27, 539) and Finlaggan (D Caldwell, pers comm). Though there is argument about exactly where and when these instruments originated, most securely stratified examples from Britain and the European mainland are dated to a period between the 15th and 17th centuries (Ypey 1976, 269). (The Whithorn example is slightly earlier and was probably deposited in the mid to late 14th century.)

- 27 **Buckle** Small square-framed buckle with a central bar and slightly curved profile. The bar is thinner than the frame and possibly made separately. The pin is a small length of iron shaft, curled round the bar. There is no sign of decoration, but there is some evidence from an X-ray that it was tinned (AOC 1992). Length 25 mm, width 22 mm. F112. Period 5. SF59.

Knives (illus 18)

Two plain knife handles were found and are both of the same type. They are thin-scale tangs, cast in one piece, tapering towards the blade and thickening at the butt ends to form a stop for the handles, which are riveted on. The handles were of birch wood in one example (no 28) and, in the other case, probably horn (AOC 1992). Scale tangs were the more common form by the 15th century, replacing whittle tangs (Cowgill *et al* 1987, 25). That they are cast in one piece, with no separate end plate, also suggests a later date. A third knife handle was recovered by excavations in 1993; the handle is iron but is inlaid with copper-alloy scrollwork (no 29). An odd-shaped knife blade was also recovered from the rock-cut pit, with a thin whittle tang, a pronounced shoulder and a rounded tip.

- 28 **Knife tang with wooden handle** Thin scale tang tapering towards blade end, with three iron rivets spaced at 13 mm intervals holding in place the remains of a handle of birch wood. There is no separate end plate, the butt end of the tang thickens to form a stop. Length 80 mm, width 14 mm. F080. Period 5. SF024.
- 29 **Iron knife handle** Handle, broken at both ends, inlaid with copper-alloy scroll-work and with incised decoration on the shoulder. Length 54 mm, width 12 mm. F010 (Baker 1993). Period 3.

Other tools (illus 18)

- 30 **Trowel** Remains of a large, triangular trowel blade with a cranked tang of rectangular section, all cast in one piece. On the upper section of the tang there are preserved fragments of the wooden handle. There is not enough of the original edge left to say whether the blade was curved or straight edged. If the edges were straight, then the original blade was as much as 180 mm wide and 145 mm long. It was found at the north end of the castle and is probably associated with building work in the 16th century. Blade length 105 mm, width 103 mm, tang height 45 mm, length 47 mm. F043. Period 3. SF430.
- 31 **Awl/Stylus** Thin, pointed tool with a wooden handle. The handle is round sectioned and fitted over a flat tang by means of at least one iron pin. The tang forms into a decorative leaf-shaped knob above the handle. Length 117 mm, diam of handle 9 mm. F236. Period 3. SF329.

There were also three long pointed objects with thick square sections which may have been used as punches or spikes (Periods 2 & 3; not illus). A rectangular object thinning to a sharp edge may have been part of an adze or axe blade (Period 3; not illus) and a curved iron strip with a rectangular section (Period 3; not illus) may have been the handle from a cast iron vessel.

Nails and other structural iron objects (illus 18)

Nails and other structural objects were the most numerous of the iron finds. Of the recognizable objects, there were 165 nails, 68 clench bolts (represented mainly by their loose plates, the detached heads and shafts being indistinguishable from nails), four strap fragments, two staples and one very large bolt (162 mm by 22 mm). The rock-cut cistern (latterly a cesspit) contained 21 loose door studs, matching exactly those found still in place in a door remnant from the same context (see Crone, below), and also two small bolts with thick round shafts. Otherwise, the

majority of the structural iron came from Period 3 deposits, concentrated in three large dumps of material at the southern end of the basement (F129 in the south-east; F195 & F144 in the south-west). These three deposits alone contained 62 of the nails, 36 of the clench bolts and both the staples. Find-spots of a group of c 40 nails from one of these features (F129) were plotted and could be seen to form a curvilinear shape with a diameter of up to 750 mm (not illus); they may represent some wooden object, represented by nails which were deposited when it rotted *in situ*. The unused bolt plates as well as the used and broken nails suggest that these deposits are general dumps of builders' waste. They have few other inclusions, save a few sherds of pottery and a shoe buckle (above). A large quantity of pieces of dressed stone blocks also came from the two south-western deposits (58 pieces from F144; six from F195).

The clench bolts are almost all either broken or unused. Clench bolts were used to rivet thicknesses of wood together and consisted of a nail-shaped piece and a separate small plate with a hole in the centre. The nail was hammered through the wood so that the shaft protruded at the other side. The plate was then fitted over the shaft and the remaining length was hammered flat over the plate, holding it all in place. The plates were manufactured in strips, with the holes punched and the joints between plates partly cut, so that each one could be broken off only when needed. Several of these strips of plates were found unused, seven in pairs (three from F129), and even one strip of six (SF287, Period 2).

- 32 **Door stud** Square domed head, complete shaft bent at 34 mm. Head width 23 mm, shaft length 57 mm. F283. Period 3.
- 33 **Nails** Of the 165 nails only 22 were complete. The numbers involved meant it was not practical to fully clean and conserve all the nails and their state of preservation prevented comprehensive identification of types and head shapes, even with the help of X-rays. Most of the nails, of all periods, were large-headed woodworking nails, usually with square heads about 25 mm wide (ie about an inch). In all, 113 (68%) of the nails have heads of 20 mm or over. In length these varied from 56 mm to 80 mm. There is another smaller cluster of 26 nails (16%) between 11 mm and 15 mm wide (about a half inch), and with an overall length between 37 mm and 58 mm.
- 34 **Clench bolt** Rounded head, square-sectioned shaft and square plate. Head width 20 mm, shaft length 30 mm, plate width 22 mm. F284. Period 2. SF413.
- 35 **Clench bolt plates** Strip of six clench bolt plates with a curved spike, probably unrelated, corroded attached by corrosion. F287. Period 2. SF419.

MILITARY FINDS (ILLUS 18–20)

The evidence for a military presence in the castle consists almost entirely of cannonballs, with a small array of other ammunition, reflecting the use of the building as an arsenal in the 17th century. The only military finds from earlier times are one piece of mail and what may possibly be fragments of a sword (Period 3; not illus). Excavations in 1993 also recovered a medieval barbed arrowhead, probably dating no later than the 14th century (Jessop 1997).

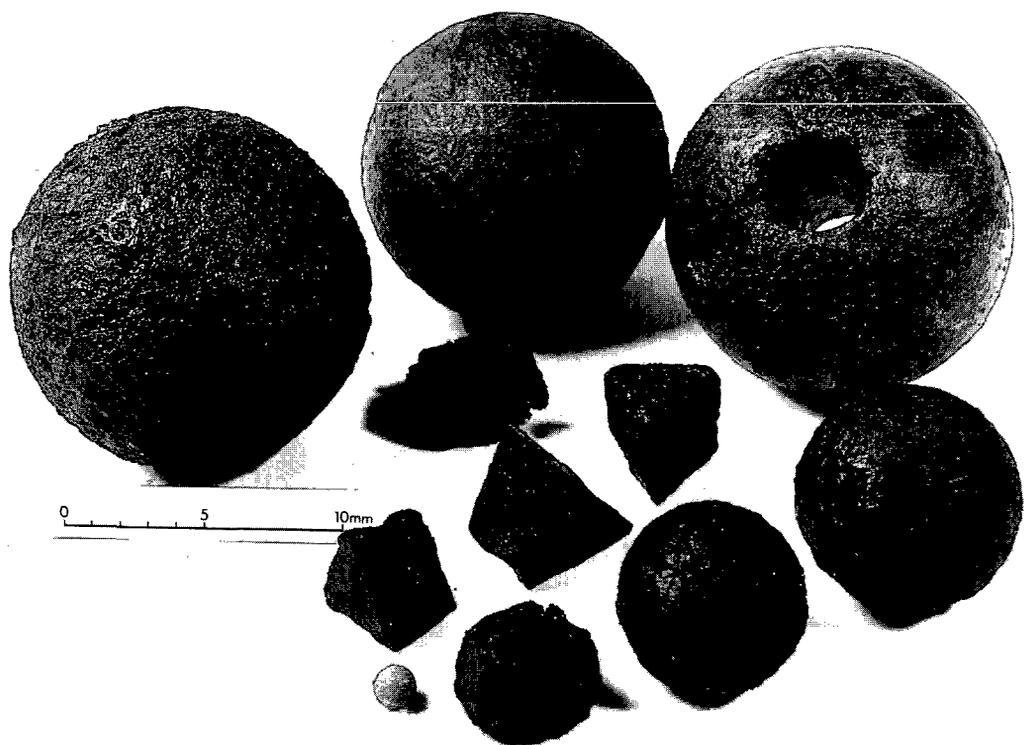
- 36 **Mail** Lump of tangled mail. Estimated original size: length 55 mm, width 50 mm, thickness 25 mm; ring diam 8–9 mm. F244. Period 3. SF342. This is badly corroded and before conservation was not recognized as mail. The wire appears to be round in section, indicating that it dates to after c 1500 (Credland 1983, 266), but it is probably no later than the 16th century in date.
- 37 **Arrowhead** Barbed socketed arrowhead with a central spine. Length (if complete) c 65 mm, width 28 mm. F024 (Baker 1993).

Lead shot (illus 19)

The lead shot included a small musket or pistol ball (diam 13 mm) and a small pyramid-shaped lump (diam 15 mm), possibly of use in grape shot. Unfortunately both were unstratified. Handguns did not become generally known in Scotland until about 1540 and it was not until the end of the 16th century that improvements in musket design made this the popular and practical weapon that was to survive into the 19th century (Maxwell-Irving 1971, 200–2). Given the castle's history, the likelihood is that the musket or pistol ball was contemporary with the cannonballs and formed part of the 17th-century arsenal.

Diced shot (illus 19)

Five pieces of diced shot were recovered, though unfortunately three were unstratified. These three were wedge shaped, while a further two (SF058, Period 4) were irregular cubes. In the absence of iron-casting capability in Scotland, iron 'dice' were coated in lead to make round shot (Caldwell 1981, 128). Lead shot like this could have had an advantage over solid iron in that, being denser and more malleable, it could be forced into a gun barrel at sea and would remain there, ready for firing, without the need for wadding (Caldwell 1991, 344). It is also probable that



ILLUS 19 Examples of iron and lead shot

in their unleaded state, as all of these are, they could have been fired as anti-personnel grape shot (D Caldwell, pers comm).

Cannonballs and chainshot (illus 19 & 20)

A total of 48 cast-iron cannonballs and chainshot was found. Chainshot consists of a number of cannonballs chained together via holes through their centres which were fired to bring down ships' rigging. Only one definite example of chainshot was recovered (Period 5), with a diameter of $4\frac{1}{2}$ in. Ten other examples were suspected, mostly from 2 in. to $2\frac{1}{2}$ in., but without cleaning these it was impossible to distinguish them from solid cannonballs. Seven sizes of plain balls were present with the two smallest sizes, at 2 in. and $2\frac{1}{4}$ in., being most numerous. Cast-iron cannonballs began to appear from the early 16th century, but the casting technology did not come to Scotland until the 17th century and was not developed on a large scale until the early 18th century (D Caldwell, pers comm). The features from which the balls were recovered are spread through occupation Periods 3 and 4, mainly in the latter or 17th-century period. The larger balls were mainly found in the northern area of the basement; the smaller balls were mainly concentrated in tight groups in the centre (illus 20).

TABLE 2

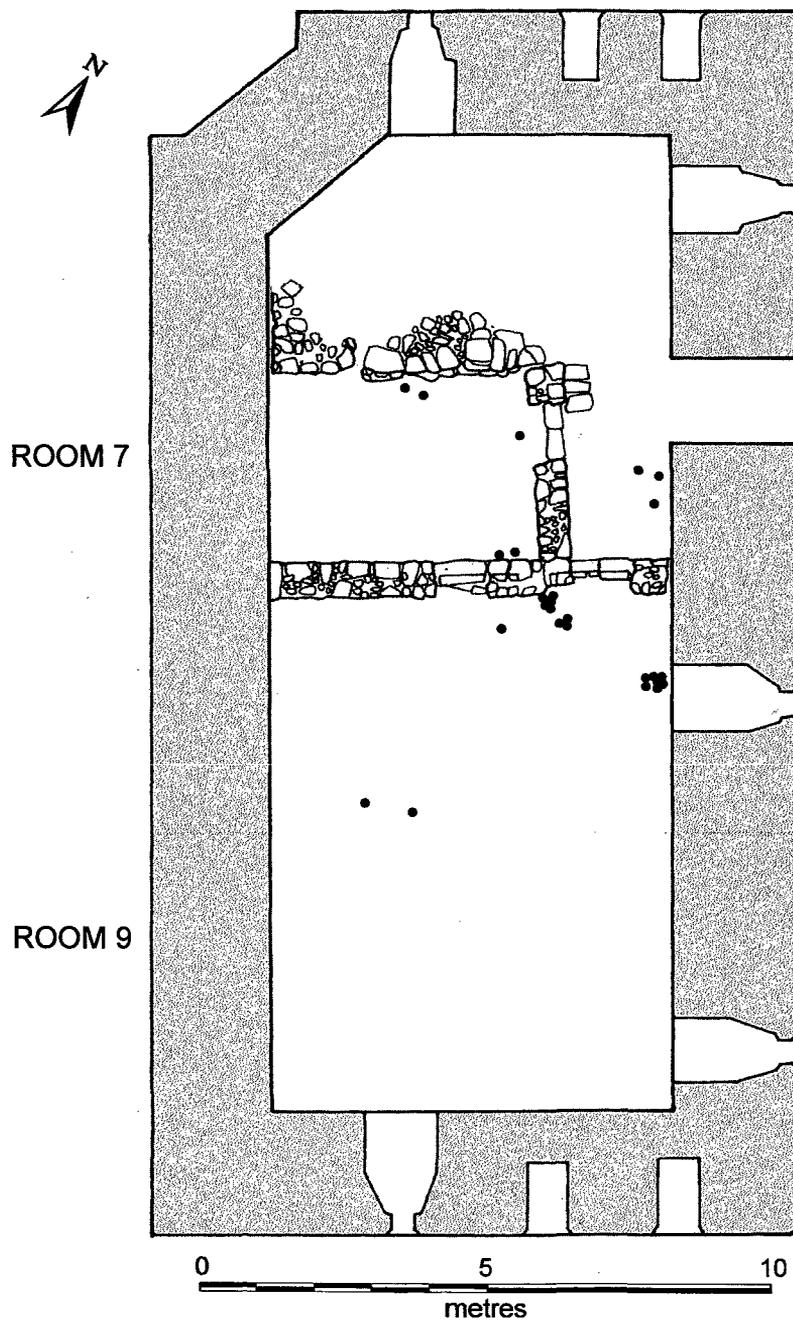
Frequency of cannonball & chainshot sizes

Diameter (in.)	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$3\frac{1}{4}$	4	$4\frac{1}{2}$	5
Quantity	12	1	3	2	1	7	6

Two guns still exist which are known to have been owned by the Campbells of Argyll, one from Dunstaffnage Castle, near Oban, the other still at Inveraray Castle. The bores of these two guns are $3\frac{1}{4}$ in. and $5\frac{1}{2}$ in. respectively. At Sandal Castle, in Yorkshire, where the Civil War cannonballs could be matched to their respective guns, the gap between diameters of balls and gun bores, known as windage, was found to vary according to size (Maynes & Butler 1983). The larger guns (7 in. & 8 in.) fired shot with a diameter about 10% smaller than the gun bores. The smaller guns (5 in. & 6 in.) fired shot 4–5% smaller. Given this, it seems unlikely that the $4\frac{1}{2}$ in. balls from Carrick could have been fired from the Inveraray gun, but the larger 5 in. balls could have fired from this or a similar gun, albeit with a relatively large windage at c 9%. None of the balls seems to fit the bore of the Dunstaffnage gun.

It does not appear very likely that any of the balls which were recovered are from the guns of the *Kingfisher*, the vessel which attacked the castle in 1685 under the command of Captain Hamilton. If cannonballs had penetrated the building, one would reasonably expect to find evidence of this in the condition of the walls; this evidence is not visible. In fact, none of the balls shows any signs of impact damage. Furthermore, most were found in such tight groups, the smaller balls especially (two were even corroded together), that they look far more likely to be remnants of a neatly stacked store. The three main groups in the central area of the castle (SF145, SF146 & SF162) include balls of the five most frequent sizes. The balls from the northern end are in more disarray, dotted around randomly, including the three odd-sized examples, of $3\frac{1}{4}$ in. and 4 in. These three are the most likely candidates for enemy balls, a fact which might be confirmed if details emerge of the size of the guns on the *Kingfisher*. Interestingly, the greatest number of roof slates also came from the northern end, suggesting there may have been a roof fall there.

The military assemblage as a whole is odd, mainly for its lack of variety. No parts of muskets were found, no caps from powder flasks, no spears or pikes, and no swords or armour



ILLUS 20 Distribution of cannonballs within the basement (Period 4)

(at least none from the 17th-century period). Possibly after the castle was bombarded its contents were looted, though it would have been odd to leave the rebellious Argyll with a quantity of heavy munitions, especially when these could also have been of some value to the Crown forces.



ILLUS 21 Examples of stone and metal objects, including incised slates, stone discs, the bell, Jew's-harp and polished quartz crystal

Even if this ammunition did not fit their guns it would have had a worth as scrap iron. Possibly it was the Campbells themselves who, knowing their impending fate, hurriedly salvaged what they could from their stores in the castle and were forced to abandon the remainder. Alternatively, these examples may simply be balls which had sunk into the muddy cellar floor during storage and were never retrieved.

ANALYSIS OF METAL AND INDUSTRIAL WASTE

Michael Cressey

The analysis of metal artefacts, smelting debris, associated metal slag and other residues may allude to metal-working practices undertaken within the site. Analyses of the finer fractions of industrial waste obtained from environmental samples can be particularly useful in determining what industrial processes were being undertaken such as the smelting of base metals or hot working around a hearth or forge.

Samples from excavations at Carrick Castle were individually examined using either a hand-held lens or, where appropriate, light microscopy with magnifications in the range of $\times 200$. All samples were weighed and their morphology fully recorded. No metallographic or chemical

analyses was undertaken on any of the metal finds or on the residues. Within the text 'clinker' refers to vitrified vascular material rather than cinders, which are more porous and are generally associated with ash from domestic hearths.

Results (illus 22)

The samples have been identified and sorted in relation to their proposed period in order to assess whether there are any radical changes in the frequency of a particular material over time.

Period 1 A single fragment of amorphous slag and two pieces of clinker.

Period 2 This assemblage includes iron nails, clinker, amorphous fragments of corroded iron and iron slag.

Period 3 A large proportion of the industrial samples are from features assigned to this period (41%). Many of the samples are dominated by lumps of corroded iron with large nail heads being most frequent. Residues from fires include clinker, coal and ash. Forging work is suggested by the presence of hammerscale and copper-alloy splash droplets. The latter tends to be spheroidal and consists mainly of slag with a green surface patina of copper oxide.

Period 4 This assemblage has more or less the same abundance of amorphous corroded iron work which dominates the Period 3 assemblage. Residues from forging work are attested by the amount of amorphous vitrified clinker that has been derived from coal burning. The hard vitrified nature of some of this material suggests that it may have been derived from fires (or a forge) fuelled by charcoal. Hammerscale and spheres of iron-rich slag are also present within this assemblage.

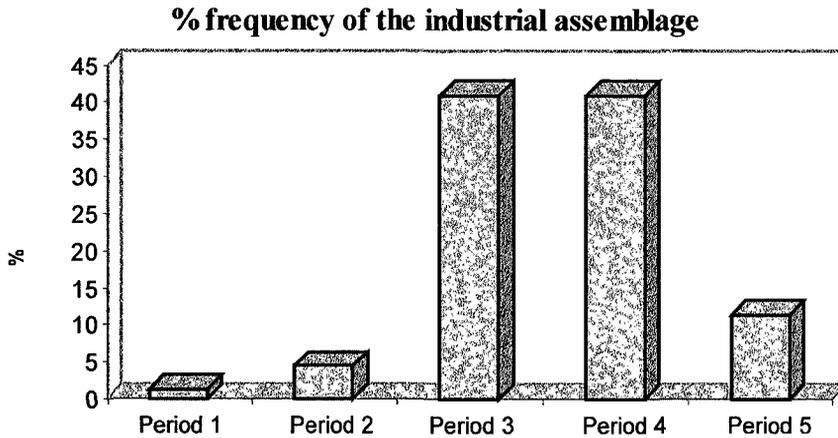
Period 5 This assemblage contained iron nails and an iron clasp measuring 100 mm by 10 mm, with a hole in one end, possibly part of a door latch. Part of a hinge plate was also identified. The industrial debris includes slag, clinker, coal and small spheres of copper alloy.

The bulk of the 'industrial' assemblage has been derived from the different periods of refurbishment and alteration. Periods 3 & 4 contain the largest amount of material (illus 22), most of which can be attributed to nondescript fragments of corroded iron work. A small proportion of this material consists of the heads of large iron 'rove' nails. Unburnt coal, coal shale and clinker (the latter derived from coal burning) is likely to be from domestic hearths. The presence of hammerscale in Periods 3 & 4 strongly suggests that iron may have been forged. Hammerscale is diagnostic of smithing iron and is often found within the vicinity of the smithing hearth and anvil. Hammerscale consists of small (typically 1–3 mm) fragments of oxide/silicate skin dislodged by mechanical or thermal shock when iron is forged. Spheroidal slag results from the solidification of liquid slag expelled from iron during hot-working. Similar material and other small droplets derived from working copper alloy were present in Periods 3 & 4, but in lower amounts in the Period 5 assemblage.

STONE OBJECTS

with geological identifications and a note on roof slate by Nigel Ruckley

Most of the stone artefacts recovered are of the local micaceous schist which forms the bedrock for the site. The sandstone used for a rotary hone (no 43) had no diagnostic features to identify it with a particular quarry, but it is almost certainly from the Clyde coast or Ayrshire. Two pieces



ILLUS 22 Percentage frequency of sample abundance per period

of quartz rock crystal were also examined but, in the absence of diagnostic features, could have come from anywhere in the world where this occurs (B Jackson, NMS, pers comm). The slate objects are all of the Highland Border series, the same source as the majority of the roof slates (see below).

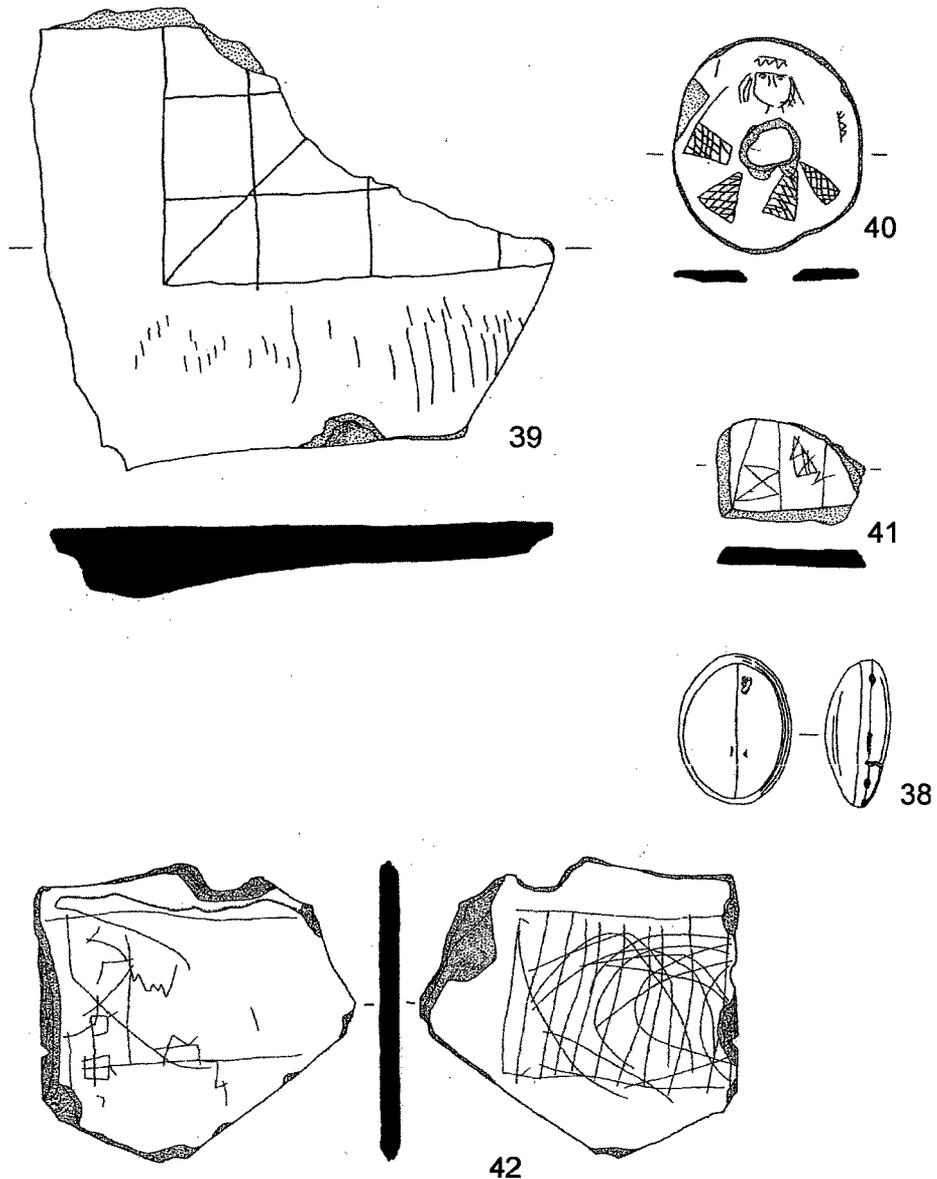
Rock crystal (illus 21 & 23)

Ridged back or 'hog's back' gemstones were a relatively common way of cutting stones in the medieval period. Large stones such as this are generally reckoned to have adorned books, crosses and other religious items. St Fillan's Crozier, for example, known to have existed since at least the 14th century, has a large ridged back crystal set into its hook end (Stuart 1878; Michelli 1986, illus 5). Most datable examples, whether from stratified layers in excavations or fixed into datable brooches or other settings, are from the 16th century or later and this has been attributed to the dismantling of church treasure in the wake of the Reformation. An almost identical stone from excavations at Battle Abbey was found in deposits dating to the dissolution of the monasteries (Geddes 1985, 147). A crystal from Kirkwall was from a layer dating to the 16th century (Caldwell 1982, 421); Caldwell (*ibid*) also cites other examples from around the Highlands and Islands, in various items of jewellery dating from the 16th and 17th centuries. It seems possible that the Carrick stone was destined for a similar fate at the hands of the famously Protestant Campbells when it was lost, but it should be noted that it was found in pre-Reformation deposits (Period 2). Furthermore, as a large (56 mm by 36 mm) raw quartz crystal was also found at a similarly early level (Period 2), it must be considered possible that the stone was cut on site.

38 **Polished oval quartz crystal** Clear rock crystal, well polished, with a ridged back and a shallow cabochon underside. Length 41 mm, width 30 mm, breadth 19 mm. F171. Period 2. SF318.

Incised slates (illus 21 & 23)

All the incised slates seem to be made from waste or fallen roof slate. Almost all were found in late features (Period 5) and so could have been made from fallen roof debris after the castle was reduced. Most are from the north end of the basement, where the majority of the unincised roof



ILLUS 23 Incised slates and polished quartz crystal (scale 1:2)

slates were also recovered. The hole in the disc (no 40) is of about the same size as a roof slate nail hole. It was possibly intended as a gaming piece, the hole being useful for piling counters onto a peg. Another stone disc almost identical in size and shape, but undecorated, was recovered by excavations in 1993 (not illus). The two smaller scraps (nos 41 & 42) have the appearance of doodles or practice pieces. The slate is all of the same Highland Border type as the majority of the roof slates.

- 39 **Incised gaming board** The corner fragment of a slate slab has a smooth surface on one side incised to form part of a gaming board. This consisted of a rectilinear grid of incised squares (the surviving lines

form a row of four squares and a column of three squares extending from the same corner) traversed by a diagonal line to the corner. The squares vary in width from 23 mm to 35 mm across. There are some further score marks beside the board, rows of short parallel lines which could well be a score tally. Length 141 mm, width 121 mm, thickness 16 mm. F210. Period 5. SF314.

- 40 **Perforated incised disc** A rough slate disc with a central hole is incised with geometric motifs and what appears to be a crowned head. The geometric figures, on the opposite side of the perforation to the head, are four triangles infilled with cross hatching. A curved line extends from the base of the farthest left triangle up towards the head. Two of the triangles are missing their points as they extend over the hole. There is also the base of another triangle on the right hand edge. Maximum diam 58 mm, diam of hole 14 mm; thickness 3 mm. F039. Period 5. SF004.
- 41 **Incised slate** A corner fragment of a slate slab has two finished edges. Three lines are incised across one side, also a square with diagonal lines across the corners and a hatched triangle which could possibly represent a boat. Length 40 mm, width 28 mm; thickness 4 mm. F123. Period 3. SF079.
- 42 **Incised slate** Piece of slate with one finished edge and a muddle of incised marks on both sides. One side features a grid of parallel lines at roughly 5 mm intervals within a rectilinear frame. This is scribbled over with a series of curvilinear lines forming no pattern. The other side features a series of intersecting straight and curvilinear lines with small geometrical figures dispersed about. The letter 'M' possibly appears and one row of uneven zigzags might depict mountain peaks. Length 91 mm, width 82 mm. F200. Period 5. SF263.

Stone discs (illus 21)

Six flat stone discs were found, all of micaceous schist. The four smallest (23–37 mm) were all unmodified pebbles, but as they were all found together (Period 3) it is likely that they were collected for use as gaming pieces. They were found in the central area of the basement, some distance from the gaming board, but they are the right size to have been used with it. Two larger stone discs were also found in a Period 3 deposit, one roughly cut to a diameter of 85 mm, the other a natural flat pebble of 66 mm. They could both have been used as pot lids. Jug rims varied between 63 and 95 mm wide, averaging 82 mm.

Grinding tools (not illus)

The rotary hone (no 43) was the only complete object of this sort. Three pieces of possible quern stone were also found, all of micaceous schist. One large block had a hollow worn out of one surface, with a smaller hollow worn at the base of this. It was irregular in shape and was possibly used as a door jamb. There were two smaller pieces with a curved outer edge and these too could have been architectural fragments.

- 43 **Stone Rotary Hone** (not illus). Hollow cylinder of stone with pronounced peck marks on the interior and a smooth exterior. There are visible lines of wear about the circumference of the exterior; this is worn more in the centre, resulting in a concave surface. Diam 155 mm, width 92 mm, diam of hole 70 mm. Sandstone. F287. Period 2. SF416.

Roof slate (not illus)

In total, 111 pieces of roof slate were recovered. Most were scattered across the northern and central areas of the basement, in deposits of Period 4 or later. A sample of 14 fragments was examined in order to identify the source of the stone. The slates were predominantly from the Highland Border slate belt. Two slates appear to come from different geological formations; one from the Easdale slate belt and one schist (Dalradian) of possibly local origin.

Numerous possible sources for the production of slate exist in the area from the Isle of Bute eastwards to Dunoon and Rosneath, with direct sea access to the Clyde. The slate belt continues eastwards to Luss, from where finished slates could have been transported to Carrick either overland or via small boats down the Clyde for shipping to the castle. The quarries at Luss appear to date back to the 15th century, but local quarries with access to the Clyde would probably have been operational for local use from an earlier date. A band of graphite schist crops out in the neighbourhood of St Catherine's, Loch Fyne, but quarries in the area appear to be either epidiorite (used in the construction of the 18th-century Inveraray Castle, and later for ovensoles) or quartzite for aggregate. Further work will be needed to check quarry sites around Loch Fyne for their products.

Roof slates would have been fixed in place either by a wooden pin or iron nail and were usually bedded in a lime mortar. The pin has to be inserted firmly into the hole, with no play. Sometimes these slates were reused and a large nail with a broad washer would have been used instead of a wooden peg. When an iron nail was intended, the hole diameter would have been smaller and the nail fixed directly to a horizontal lath. All the slates would have been dressed by hand. The practice today would be to bevel any edges of the slates on one face only and lay this face uppermost to let the water run down onto the next slate. (Rainwater is less likely to be forced under the slates by strong winds if the edges are bevelled.)

At Carrick Castle, the slates may have been either nailed or pegged, with holes varying between 4 mm and 12 mm in diameter. The question of reuse must be born in mind as one of the sample group had traces of mortar in the peg/nail hole. The schist 'slate' had a hole diameter of 19 mm and was presumably pegged. This distinctive slate may represent part of an earlier roof, or it may simply have been introduced as part of a quick repair.

Cannel coal

A quantity of cannel coal was found. This was mainly from the rock-cut cistern/cesspit deposits (Period 3), but there was also a large spread within the centre of the basement (also Period 3). Harder than coal, with a concoidal fracture, this material was used as a poorer version of jet to make items of jewellery. There is no sign that any of it was worked. As the nearest source is in Scotland's central belt (N Ruckley, pers comm), it was most probably brought to the castle for some particular purpose. Its most likely use was as fuel.

BONE OBJECTS (NOT ILLUS)

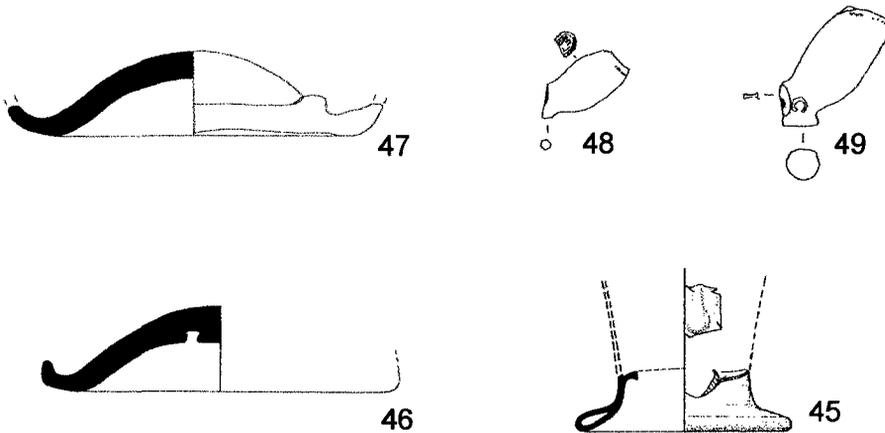
The bone finds seem to be makeshift objects, probably made on site. An implement handle made from a roe deer metapodial (SF196, Period 3) was only partly finished before being discarded. A small awl was also found; this was a piece of long bone, crudely shaped into a point (SF127, Period 4). Only a bead is described in detail here.

- 44 **Bead** Small round polished bone bead. Length 8 mm, diam 8 mm, diam of hole 3 mm. F092. Period 4.

GLASS (ILLUS 24)

with identifications by Robin Murdoch

In total, 33 glass sherds were recovered. All are vessel sherds and all but 12 of these are modern. Of these 12, only three were diagnostic pieces. The Venetian drinking glass (no 45) is a distinctly



ILLUS 24 Clay pipes and glass (scale 1:2)

luxury item and is almost identical to one found during excavation of the medieval episcopal palace at Spynie, near Elgin (Lewis forthcoming). The later bottle (no 47) post-dates the razing of the castle by Captain Hamilton in 1685, but points to some sort of presence in the building in the following decades.

- 45 **Base of drinking glass** Double-walled clear glass with moulded tear-shaped decoration. Probably Venetian, 16th century. F010/031 (Baker 1993). A sherd from the same vessel as found in F103 (Baker 1993). Period 3. SF045.
- 46 **Base sherd from bottle** Possibly English, square green glass bottle, 15th to mid 17th century. F103. Period 3. SF030.
- 47 **Base sherd from bottle** Wide green glass onion bottle, c 1700–20. F059. Period 5. SF009.

CLAY PIPES (ILLUS 24)

Of the 18 pieces of clay pipe recorded, almost all are from features post-dating the destruction of the castle in 1685. The only exceptions were two stem fragments from the fill of the rock-cut pit (Period 3). All the stem sherds had wide bores, indicating an early date, probably in the 17th or early 18th century. Of the three bowls, one was of 19th-century appearance but had no identification marks and is not described below. Only one of the bowls pre-dates the destruction of the castle (no 29), being of mid 17th-century date; this came from some way down the west coast of England. The other (no 30) was made nearer at hand, in Glasgow. Like the late glass bottle sherd (above), this example also indicates a presence in the castle in the early 18th century.

- 48 **Small bulbous bowl with spur** Stem side of bowl stamped with illegible initials inside a semicircular 'halo' frame. Bore 7/64 in. English, south Lancs type, 1640–60 (Davey 1985, 179). F076. Period 5.
- 49 **Large bulbous bowl with chinned heel** Heel unstamped, but initialled on either side 'I C'. Bore 6/64 in. James Colquhoun, Glasgow, early 18th century (Gallagher 1987, 45). F237. Period 5.

WOODEN OBJECTS

B Anne Crone

Some 149 fragments of wood were identified to species and any pieces displaying signs of woodworking were noted and measured. For descriptive purposes the assemblage has been

divided into two general categories: 'structural pieces' and 'roundwood'. Roundwood includes any material which shows little or no signs of modification from the round; conversely, structural pieces include any material which has undergone significant modification from the round. A small number of wooden artefacts were also found. Dendrochronological analysis was carried out on four oak planks but did not produce an absolute date. Most of the samples described below were recovered from Period 3 deposits in the rock-cut pit (formerly a cistern in Period 2; latterly a prison cesspit). A full catalogue of all pieces can be consulted in the archive of the project records.

Structural wood

Only three species, oak (*Quercus* sp), ash (*Fraxinus excelsior*) and Scots pine (*Pinus sylvestris*), were used for structural purposes.

Pine The pine invariably occurred as fragments of planking, much in a very spongy condition and some of it worm-eaten. The pine was rift-sawn; the majority of fragments have been cut tangentially to the growth rings. Although the planking is very fragmented the original surfaces generally survive and the signature marks of the axe are often visible. The pine planking was between 15 mm and 25 mm thick, although the majority of fragments were 19 mm thick. Some, at least, of the pine planking probably formed part of a door found in the rock-cut pit (below).

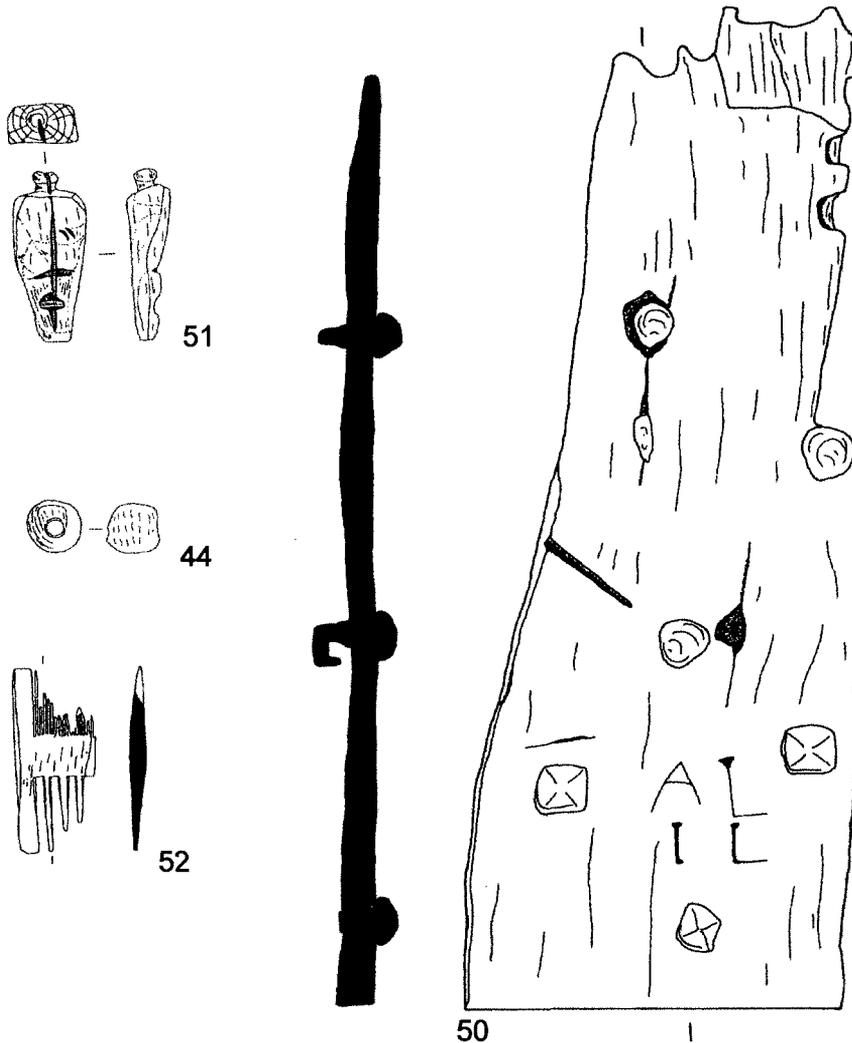
Four fragments of pine testify to the use of tongue-and-groove jointing. One of these also featured the remains of a possible locking mechanism. This consists of two roughly cut, rectangular holes, 18 mm by 9 mm, set 24 mm apart, between which there is a shallow concave groove, 20 mm wide, which runs down the length of the plank and stops abruptly some 150 mm below the holes. This groove does not appear to have been deliberately cut and was probably formed by a stick or baton being driven down between the mechanism which was secured to the plank using the holes.

Apart from the planking there are some small battens of pine, all roughly the same dimensions, and two squared stakes/pegs.

The predominance of planking and absence of branchwood suggests that the pine may have come into the castle as prepared planks. However, the presence of some small offcuts of pine, slivers with oblique chopmarks at either end, indicates that the planking was also re-worked within the castle.

Oak The oak was put to much more varied uses. There are many plank fragments but the surfaces of most are eroded and so it is not possible to derive the original dimensions. Where the surfaces survive the planking is between 17 mm and 21 mm thick. A number of larger plank fragments were clearly the remains of a door. The largest piece (no 50; illus 25) consisted of two fragments of the same plank which now measure 1002 mm by 382 mm by 19 mm overall. It was a rift-sawn plank which spanned the diameter of the tree; the oblique saw-marks are still visible on the back of the door. The wood was of poor quality: the oak was fast-grown (see below), knotty and the grain was skewed. The door was pierced by square, dome-headed clenched nails set in a roughly triangular pattern at approximately 100–120 mm intervals. Some of the nails are still bent over and stand proud of the surface of the oak plank by some 19 mm. Fragments of mineralized wood, with the grain lying at right angles to that of the oak plank, were attached to the stems of some of the nails and these were identified as pine. This suggests that the door was originally backed by pine planking nailed horizontally, presumably to strengthen the door and prevent the knotty oak planks from twisting. On the front of the door, the letters 'A L' and 'I L' were carved over each other.

Although there are no recognizable primary offcuts of oak, it was clearly being worked at the castle. Two offcuts retaining a nail-hole and the remains of drilled holes down the sides indicate the re-working of old structural timbers. Two oak trenails were found in the assemblage, although all that remains of one is the head. They are classic trenails, fashioned from radially split oak, with a pared shaft expanding slightly



ILLUS 25 Wooden objects, including (right) remains of an oak door recovered from the rock-cut pit (scale 1:2; except no 50 at 1:4)

into a dome-shaped head. Their shafts are 23 mm and 21 mm in diameter respectively and would have fitted the holes seen on the reused structural timbers.

Amongst the assemblage are three lengths of oak rods, carefully fashioned from a radially split section. These are 7 mm and 10 mm in diameter and the longest is 330 mm, but all are broken at each end. These pieces are probably dowelling, which could be cut to length for finer carpentry such as the manufacture of furniture and chests.

Again, most of the oak is either radially or tangentially converted, suggesting that the timber was rift-sawn.

Ash The majority of the 'structural' ash consisted of large, amorphous lumps with no original surfaces left to help determine their original function. Their dimensions suggest they are fragments of major structural elements; with the exception of the door fragments they comprise the bulkiest pieces found in the rock-cut

pit. They were all badly worm-eaten, hence the spongy, eroded surfaces, and must have lain around for some time before deposition in the pit. The largest object of wood found in the pit was a rift-sawn slab of fast-grown ash, measuring 910 mm by 430 mm by 80 mm and spanning the entire diameter of the tree. It was also very worm-eaten and the original surface survived only in patches. An oval, hand-sized hole, 85 mm by 40 mm, had been cut out to one side of the object, some 65 mm in from the original edge. It may have been a chest-lid or trapdoor.

Other objects of ash include a group of stakes or pegs, roughly fashioned from quartered stems of roundwood and with flat tops. The complete pegs measure 187 mm thick and 250 mm long. There were also some small offcuts of ash, slivers with oblique chops at each end.

Scattered throughout the assemblage were pieces of ash almost identical in size and cross-section. They were all chords, 40 mm wide, which had been cleft off an ash stem, 50 mm in diameter. Two of the fragments could be joined together to form a length of 330 mm. Another chord of ash of similar dimensions was pared down its length, presumably to remove the bark. Cleft chords of ash were commonly used to make hoops for barrels (Kilby 1971). The chords from Carrick have clearly not been used as there is no curvature to them, but it is possible that a cooper was working nearby, either making barrels or repairing them.

Roundwood

A greater variety of species was represented in the roundwood assemblage. Oak and ash were present, together with hazel (*Corylus avellana*), alder (*Alnus glutinosa*), birch (*Betula* sp) and a very small amount of willow (*Salix* sp). The material was usually very fresh-looking, invariably with the bark still *in situ*. The material varied from 5 mm to 70 mm in diameter. Lengths of up to 550 mm were present but none of the material displayed the characteristics of coppiced material (ie a straight-grown, branch-free morphology). Side branches and twigs had been trimmed off a number of fragments. The worked roundwood category consisted of small offcuts, either chords trimmed off small branches or triangular cross-sections which would have been removed during the shaping of stake tips. A simple stake of alder, with bark still *in situ* but trimmed to a point, was found in the well. The presence of trimming debris and roundwood with side branches trimmed off indicates that this type of material was probably intended for building purposes rather than as fuel. The most common use for such material would have been the construction of hurdle screens for walling, fencing and so forth.

Artefacts (illus 25)

Only seven artefacts, of a very diverse nature, appear in the wood assemblage. The first (no 289) is the sleeve, or valve, of a pumping mechanism, carved from a trunk of Elm (*Ulmus* sp). Elm is very durable if kept permanently submerged and hollowed-out elm trunks were commonly used as water-pipes in the post-medieval period (Edlin 1970, 210). The components of village water pumps were also originally of elm (*ibid*).

The remaining artefacts are objects of a more personal nature. A birch handle has a square socket for a whittle tang and would probably have held a knife blade; the pronounced angle of the face where the handle would have met the blade indicates that it was designed to exert downward pressure. Two pin tips have been carefully made but could have had any number of functions.

The only complete artefact recovered was a small wedge (no 51), 44 mm long and tapering from 24 mm by 12 mm to a thin edge, 10 mm by 2 mm. In the centre of the top is a small, crudely carved knob, 6 mm high. A second artefact has a similar wedge-shaped body and is virtually identical in size, but as the top is broken off it is impossible to say whether a knob was also present on this example. The surviving knob can just be gripped between thumb and forefinger and this, together with the small size of the objects, suggests that they were used for some delicate function.

The fragment of a comb endplate (no 52) is a finely carved example made from Boxwood (*Buxus sempervirens*). Box is a 'calcicole' plant, thus its natural distribution in Britain is restricted to the chalk downlands of southern England (Perring & Walters 1990, 98) and its status at Carrick Castle is definitely that of an import. It is a very hard, dense, fine-grained wood and was highly prized where detailed carving was required. In his *Sylva; or a Discourse of Forest Trees* (1664), John Evelyn listed its uses for the engraver, the carver, the mathematical instrument-maker, the pipe-maker, the cabinet-maker and, above all, the comb-maker. This preference for boxwood for comb-making is substantiated by the discovery that, of about 70 wooden combs retrieved from Roman and later excavations in the City of London, almost all are boxwood (I Tyers, pers comm). However, although it is recorded that native box trees (at Boxwell in the Cotswolds) were cropped to sell to 'the combe-makers in London' (Marren 1992, 100) it is likely that, because of the small stature and comparative rarity of the native box, much of the boxwood used was imported from Asia Minor (I Tyers, pers comm). We cannot, therefore, be certain of the source of the wood from Carrick nor of the place of manufacture. The comb may have been manufactured in England and sold in Scotland. 'Keames of box trie' are recorded in a 17th-century 'Table of the Valuation and prices of merchandise bought within the Realm' (Craigie & Aitken 1963b, 325). Equally, it may also have been manufactured in Scotland. 'Box peces for making of keames' are mentioned in 1612 in the 'Ledger of Andrew Halyburton, Conservator of the Privileges of the Scotch Nation in the Netherlands' (Craigie & Aitken 1963a, 385), suggesting that boxwood may have been imported into Scotland via the Netherlands. In 1662, two comb-makers were admitted as burgesses of the City of Edinburgh; it is clear from the record that this was a new trade in the city but it is not stated what material they were using (Wood 1940, 283).

- 50 **Fragment of an oak door** A single plank (two fragments) measures 1002 mm by 382 mm by 19 mm overall; seven smaller fragments were found. 18 square, dome-headed clenched nails were still in place. Fragments of mineralized wood adhering to the nails were of pine, suggesting pine planking nailed horizontally. On the front of the door were carved the letters 'A L' and 'I L'.
- 51 **Wooden wedge** 44 mm long and tapering from 24 mm by 12 mm to a thin edge, 10 mm by 2 mm. Small carved knob at centre, 6 mm high.
- 52 **Wooden comb** Finely carved in boxwood. Comb width 54 mm; 4 mm max thickness; surviving fragment 24 mm long.

Discussion

Despite the tracts of conifers that nowadays cover the shores of Loch Goil, the original woodland cover of the area was a mixed deciduous canopy (McVean 1964). The composition of this woodland can still be seen in the fragments of relict native woodland that survive throughout Argyll (MacKenzie 1987). Overall, the surviving woodland is primarily oak and birch, with some alder and ash, and very small amounts of pine, hazel, willow, juniper, rowan and aspen (*ibid*). The assemblage from Carrick Castle reflects this composition to a large extent but with two striking variations: the equal predominance of ash with oak and the quantity of pine present. The ash would always have grown at the lower elevations and it is possible that it was originally more predominant in the local woodland cover but, because of its accessibility, was over-exploited at an early date. The larger pieces of oak and ash from the castle are fast-grown, indicating growth in a relatively open woodland.

The pine would only have grown at the higher, less accessible, altitudes. I have already suggested that, because almost all the pine in the assemblage was planking and there was no pine branchwood to indicate trimming, it was probably brought to the castle already converted and

trimmed into planking. It may have been brought from much further afield, transported by sea from ports such as Ayr, Irvine, Glasgow and Dumbarton. Carrick Castle guarded one of the main routes between the Lowlands and the west Highlands, the boat journey from the Firth of Clyde up Loch Long to the head of Loch Goil being the safest sea route from the Lowland ports to Inveraray. There are a few records of timber being transported by sea along the west coast during this period, although this particular route is not specifically mentioned (Anderson 1967, 225). The box comb may have arrived as merchandise or, more likely, as the possession of someone travelling this route.

The composition of the assemblage suggests, therefore, that the occupants of the castle were exploiting the local woodland wherever possible but going further afield for more specialized needs such as thin planking. The wood assemblage found within a building would normally be interpreted in terms of its settlement and occupation, but it is clear that Carrick was often used as a depot or store, particularly for armaments and other military equipment, but also for more general merchandise (MacQueen 1977). It is possible, therefore, that much of the wood formed part of a general store. For instance, the presence of the oak dowels and the ash barrel hoops would normally suggest that carpentry and coopering were taking place at the castle, but these items may simply have been stored there. The pine planking may also have been in storage there, although the fragments of tongue-and-groove planking are more indicative of *in situ* timbering such as wall panelling, for instance.

There is a marked contrast between the condition of the roundwood and that of the structural wood. The former is still very firm, with bark intact and worked surfaces fresh, suggesting that it was dumped into the anaerobic conditions of the rock-cut pit immediately after being discarded. In contrast, the spongy, worm-eaten condition of much of the large structural debris suggests that this material had been lying about for some time prior to dumping. The wood assemblage forms part of the debris with which the pit was backfilled and its composition suggests that anything lying about which was no longer useful (ie old structural timbers, domestic debris and unwanted brushwood) was used for that purpose. The condition of the structural material suggests that parts of the castle, at least, were already in disrepair. The absence of a more substantial artefact assemblage, particularly of domestic artefacts, also suggests that it had not been inhabited for some time. MacQueen (1997) has suggested that between 1658 and 1674 the 'Keeper' did not reside at the castle and that, during this time, the fabric of the building may have been neglected. Perhaps the backfilling of the pit was part of a period of renewal and rebuilding as a result of the 'Keeper' renewing his residence there in 1674.

LEATHER (NOT ILLUS)

The Period 3 rock-cut pit deposits produced 86 pieces of leather which all appear to be pieces of shoe soles, with a few bits of uppers and laces. None was complete enough to give any exact evidence of style or date. Two of the larger pieces are possibly from clothing, though again these are incomplete. All the remaining stitching is of leather, though many pieces have empty stitch holes, possibly from where stitching of flax or some other fibre has decayed. There is no evidence for any iron nails or wooden pegs being used in construction. From the sole fragments present, at least four or five shoes are represented.

All were made using welts to fix the upper to the sole. This was the major shoemaking innovation of the late 15th and early 16th century. Earlier shoes, known as turnshoes, were made by sewing the upper directly to the sole and then turning the shoe right side out. The use of welts did away with the need to turn shoes. It was a strip of leather sewn around the upper which could

then be sewn, on the outside, to the top of the sole. It made for a stronger seam with less strain on stitching and leather and, with the seam away from the ground, it also made shoes more waterproof. Furthermore, as shoes now did not need to be turned, soles could be a lot stiffer. Shoes found in Coventry and others in Northampton Museum indicate that the change happened around 1500 in the English Midlands (Thomas 1980, 8; Thornton 1975, 11). In London, however, welted shoes have been found a little earlier, from the mid 15th century (Grew & de Neergaard 1988, 47).

THE FINDS: DISCUSSION

The finds present only tenuous evidence for any kind of pre-castle settlement on the site. There were no finds stratified in Period 1 features, but a few objects might date to that period. The arrowhead, crystal gemstone and bell could have been made before the castle's construction. The Saintonge polychrome ware almost certainly was. Equally, however, these small, portable and valuable objects could all have remained in use for a long period until brought to the castle after its construction in the late 14th century.

There is also a marked lack of finds from the earliest occupation of the castle, in Period 2. None of the imported pottery dates to the late 14th or 15th century. A few of the more datable small finds could date to this period, the Jew's harp and the brooch for example, but both were found in later features. The only finds of note stratified in Period 2 deposits are the gemstone and the stone rotary hone.

It is only in the early 16th century, after the castle ceased to be a lordly residence, that large amounts of finds, many of good quality, begin to appear in the stratigraphic record. High-class tableware from France and glass from Venice illustrate not only cosmopolitan trade links but also a considerable degree of wealth concentrated at Carrick in the 16th and 17th centuries (perhaps in storage rather than use), especially in the former century. The finds in this later period also attest to busy trade routes up from the Clyde, bringing more mundane materials such as planks, stone and fuel, and for another possible route up Loch Lomond and down Loch Long, bringing slate. By land the castle is virtually inaccessible, but by sea it is within easy reach of Glasgow, the Highlands, Ireland and onwards to western England and Europe. The preponderance of jugs, whether French or Scottish, also indicates trade and storage of goods. Jugs were used not just as tableware, but were also used for the transportation and storage of, wine, oil, water and other liquid goods. Bearing in mind the amount of material which is likely to have been lost from the castle, the original number of jugs present might have been many times greater than the present assemblage indicates.

The evidence for Argyll's military power is concentrated in the 17th-century deposits (Period 4). The cannonballs were presumably part of a larger arsenal stored in readiness for rebellious campaigns and sudden defences. The strategic importance of the site, on two lochs, is obvious within the largely seafaring world of the west Highlands. The presence of chainshot shows the importance of defence and attack from the sea as well as the land.

There is not much evidence for industry on site. There may have been coopering and, obviously, in the course of building work some woodworking went on. There was a small quantity of smelting slag, but this was presumably redeposited material as there was no evidence of a furnace within the castle and indeed this would have been both dangerous and unpleasant. There may have been some small-scale iron industry in the surrounding area. Some small items were possibly made on site. The bone implement handle appears half finished and the slate objects appear to have been improvised from waste or fallen roof slates. Generally, however, as far as

manufactured goods are concerned, the castle seems to have been used as a store rather than as a centre of industrial activity.

When exactly the rock-cut pit began to be filled is uncertain. Datable finds from the deposit are all of the 17th century (and are ascribed to Periods 3 & 4), but since these number only three cannonballs and two clay pipe stems they are hardly conclusive. All of these but one cannonball are from the upper fill, and it is possible that the build-up of material began earlier, in the 16th century. There is very little domestic rubbish evident in the finds from the deposits. Most of the wood and almost all the iron is structural. Other material such as brushwood and cannel coal was also found but this is not the stuff of typical domestic middens and only seven sherds of pottery, for example, were found. The fills are more likely the result of a period of major reorganization of the cellar space, as suggested by Crone in interpreting the wood inclusions (above). This may also have resulted in the dumps of building waste found at the southern end of the basement in Period 3.

A large proportion of the pottery and other finds came from the big dumps of material in the central area in Periods 3 and 4. Many of these finds-rich features correspond to dips in the natural bedrock, where domestic waste could have been dumped, along with other material, to level up the floor surface. Close links between the features of the central area from Periods 3 and 4 were evident from the number of sherd joins between them, indicating that these dumps were turned over or redeposited several times.

The castle was reduced by Captain Hamilton of the *Kingfisher* in 1685, but only a few decades after this there is evidence of human activity of some sort. A small group of early 18th-century finds clustered at the north end of the basement betrays the presence of squatters. One clay pipe, a wine bottle and possibly also the gaming board and incised disc might represent no more than a night's drinking rather than prolonged occupation.

MAMMAL AND BIRD BONES

Jennifer Thoms

METHODOLOGY

The animal bones described here are from excavations in 1996, but the analysis corroborates the earlier assessment of an assemblage from previous excavations (Baker 1993). The bones or bone fragments were retrieved by hand during the excavation but were also retrieved from processed bulk samples during processing. Due to the limited quantities of bones recovered from individual features, it is proposed to consider the assemblage in terms of periods, but with special attention to the rich assemblage from the rock-cut pit.

The mammal bone fragments were identified to species using reference collections at the Department of Archaeology, University of Edinburgh, and the National Museums of Scotland, and using atlases of animal bones (eg Schmidt 1972). Due to constraints of time only a random sample of the bird bones was analysed. These were identified to element using an atlas of bird bones (Cohen & Serjeantson 1996), then identified to species using the reference collection of the National Museums of Scotland.

The distinction between sheep and goat follows published morphological and metrical criteria (Boessneck 1969). The figures obtained for sheep are likely to be underestimates as the bones which were classed as sheep/goat were excluded from the totals for sheep.

All identifiable bone fragments were examined under $\times 4$ magnification in strong light for signs of butchery, pathological growth and any taphonomic indicators, such as gnawing or

burning. The butchery was classified following Binford (1978). Although no details of the butchery and taphonomic analyses are presented in this report, general observations are noted.

Two methods of quantifying the bone fragments were employed. The number of fragments identifiable to species (NISP) represents the number of positive identifications made, that is, the number of fragments identified to one species, rather than a range of species, such as sheep/goat. This method tends to lead to larger species being over-represented, as their larger bones are more likely to be broken into identifiable fragments than are those of smaller animals. Body part representation analysis for most species was not deemed worthwhile due to the small numbers of fragments retrieved, but the minimum number of elements was calculated for each species in each period. This was done to facilitate the calculation of the minimum number of individuals (MNI). This method of quantification tends to result in the relative over-representation of rarer animals in the assemblage. It was intended that a balance would be achieved by using both methods.

RESULTS

TABLE 3
Mammal bones

Period	Frequency expressed as MNI					Frequency expressed as NISP and (<i>below</i>) as % of relative frequency of identifiable bone				
	1	2	3	4	5	1	2	3	4	5
Badger <i>Meles meles</i>	–	1	1	1	1	–	1	2	4	1
						–	2.1	0.4	1.3	0.3%
Cattle <i>Bos taurus</i>	–	2	10	11	7	–	35	290	229	245
						–	72.9	62.4	73.6	72.5%
Dog <i>Canis familiaris</i>	–	–	2	1	1	–	–	45	9	–
						–	–	9.7	1.9	–%
Goat <i>Caprus hircus</i>	–	–	1	3	1	–	–	14	5	4
						–	–	3	1.1	1.2%
Horse <i>Equus ferus</i>	–	–	1	–	1	–	–	2	–	1
						–	–	0.4	–	0.3%
Pig <i>Sus scrofa</i>	–	1	2	1	1	–	4	11	2	8
						–	8.3	2.4	0.6	2.4%
Red Deer <i>Cervus elaphus</i>	–	1	2	2	4	–	2	31	11	18
						–	4.2	6.7	2.4	5.3%
Roe Deer <i>Capreolus capreolus</i>	–	1	2	2	1	–	1	9	6	7
						–	2.1	1.9	1.9	2.1%
Sheep <i>Ovis ovis</i>	–	1	5	4	6	–	5	61	45	54
						–	10.4	13.1	14.5	15.9%
Totals	–	7	26	25	23	–	48	465	311	338

Taphonomy & butchery Bone fragments exhibiting signs of gnawing were present in every period and the rock-cut pit (F283 & F289) contained bones which had been gnawed by rodents. Very few bones showed signs of burning or blackening, hence there is no faunal evidence for deposits derived from hearths. All fragments were examined for signs of butchery and from the significant number of bones found to display butchery marks it was concluded that the deposits represented domestic waste.

Table 4

Bird bones

Period	Species present in each period				
	1	2	3	4	5
Domestic fowl <i>Gallus gallus</i>	yes	–	yes	–	yes
Duck <i>Anas</i> sp.	–	–	–	yes	–
Goose <i>Anser</i> sp.	–	–	yes	yes	–
Heron <i>Ardea</i> sp.	–	–	yes	–	–
Pheasant <i>Phasianidae</i> (<i>cf Phasianidae colchicus</i>)	–	–	yes	–	–

Body parts In the case of the majority of species the quantity of bone retrieved was too small to warrant any body part representation analysis. However a few general conclusions can be drawn. There was nothing in the figures obtained for the minimum number of elements to suggest that any of the species represented had been butchered or processed off-site, as most body parts were represented for most species. The body part representation analysis indicates that the deposits excavated from the castle contained normal domestic waste. For cattle, all main body parts were represented in all four periods which produced mammal bones. The presence of meat-bearing bones such as the femur, ribs, vertebrae and humerus, as well as non meat-bearing bones such as the hooves and the skull, suggests that cattle were butchered and consumed on the site.

Age at death of cattle & sheep There were bones of neonatal cattle in all four periods which produced mammal bones, indicating that cattle were reared on or near the site throughout the occupation of the castle. Bones of older cattle, over 3.5 to 4 years, were also present in all four periods. Insufficient mandibles were retrieved to allow a more detailed analysis of the age at death of the cattle. Neonatal sheep bones are also present in the assemblage, but insufficient teeth were retrieved to permit a detailed analysis. There were also bones of mature sheep, older than 3–3.5 years.

Birds The bird bone assemblage was primarily comprised of domestic fowl (82%), with a few bones of duck, goose, pheasant and heron also present. As only 56 bird bones were identified to species from a random sample of the identifiable bird bone, the proportions of other species present are not listed in the accompanying table.

The heron bones all derive from the wings and shoulders and suggest that the feathers were being used. The possibility of heron being eaten cannot be ruled out however. Pheasants are believed to have been present in Scotland since before the 16th century, either feral or as domesticates, so their presence at a high status site such as Carrick Castle is not surprising. Similarly, the castle's proximity to the sea makes the exploitation of duck and geese very likely, whether in a wild or domesticated state.

Representation by period

Period 1 The one fragment identifiable to species from Period 1 was a humerus from a domestic fowl, showing no signs of butchery.

Period 2 Here, the vast majority (73%) of the bone identifiable to one species was from cattle. The relatively high proportion of pig bone in this period (8%) is likely to reflect the small quantity of identifiable bone overall, rather than greater exploitation of pig at this time. Three of the four fragments of pig derived from the same feature (F287) and may represent one individual, a pig killed in its first year of life, as would be expected in an animal bred for food. At least one mature red deer was also present in this period: two bone fragments were retrieved from two features (F158 & F287). There was one fragment each of badger and roe deer.

Period 3 In this period there were 51 features containing animal bone; these yielded 1001 fragments of identifiable bone. Again, the majority of bone fragments were from cattle (62%), with red deer, roe deer and sheep also represented. Bones from dog comprise 10% of the assemblage, but this figure is artificially high, as it includes one complete dog retrieved from the rock-cut pit (F289). Indeed, the pit fills (F283 & F289) produced a large proportion of the remains in this period and other animals represented were goat, cattle, sheep, domestic fowl, pheasant, and grey heron. Of the 306 identifiable fragments retrieved from the pit, 56 displayed butchery marks (18%), roughly comparable to the proportion of butchered bones in the site as a whole (16%). The animal bone evidence suggests therefore that the pit contained domestic refuse. The presence of a large number of rodent bones in the pit supports this suggestion and further suggests that the material in the pit accumulated slowly, rather than in one episode of deposition.

Period 4 In this period a total of 657 identifiable fragments derived from 46 features. Cattle bone comprised 74% of the bones identifiable to species, sheep made up 15% and other mammals were poorly represented, at less than 3% each. A butchered badger scapula was also identified; the marks were near the articulation of the bone, suggesting the carcass was dismembered.

Period 5 Here, 764 fragments of identifiable bone were recovered from 45 features, of which 338 were identified to species. Again the majority were of cattle, at 73%, and around 16% were sheep.

CONCLUSIONS

The animal bones from the castle represent general domestic refuse. Cattle and sheep were reared on or near the site; other domesticates were goat, pig and fowl. Red and roe deer were hunted. The presence of goose, duck and heron suggests the exploitation of other birds, but whether the bones are from wild or domestic birds cannot be determined in all cases. The scarcity of horse remains confirms the domestic nature of the faunal material, the consumption of horse being more or less taboo in Britain since medieval times.

INSECT REMAINS FROM THE ROCK-CUT PIT

Clive L M Warsop & Peter Skidmore

All organic deposits recovered from the rock-cut pit were evidently *in situ* and sealed by subsequent deposits. They appear to have accumulated incrementally in the pit. Two Period 3 deposits (F283 & F289) were extremely rich in insect remains and in some cases preservation was exceptional (Tables 6 & 7). A large quantity of Coleoptera was present in both contexts, with a considerable diversity of species. The presence of a range of fly puparia, both hatched and unhatched, indicates that a breeding population was present. In addition, the remains of a bumble bee (*Bombinae* indet.) and two pupae of a parasitic wasp (*Campopleginae* indet.) were also recovered. In addition, a Period 2 context from the pit (F292, the basal fill) also contained

invertebrate remains, but these were relatively few in number and had been recovered by eye from oven-dried samples when processing for other environmental remains. They were included in the analyses, however, as they are the only available entomological evidence for the early history of this feature.

Overall, the insect assemblage recovered from this pit strongly supports the interpretation that it was periodically used as a cesspit and was also used for the disposal of domestic rubbish in the form of carrion and plant material.

BEETLES

Clive L M Warsop

The most striking element within both Period 3 contexts from the rock-cut pit (F283 & F289) was the presence of vast numbers (1000+) of *Tipnus unicolor*, a spider beetle. Although there appear to be slightly fewer of this taxon in deposit F289, they still vastly outnumber other species. The large number of *T. unicolor* and the presence of many articulated exoskeletal parts suggest this species may have been part of the *in situ* fauna. *Tipnus unicolor* is largely synanthropic (ie it survives in association with man) in the northern part of its range (Buckland 1994). It has, however, been recorded in oak leaf litter in south-west Scotland by Crowson (1962). It was noted by Zacher (1933) that *T. unicolor* appeared to feed largely upon the faeces of rodents and the fact that it has frequently been recorded in barns, in straw and hay waste (Koch 1970), as well as in cereal debris (Howe 1955), may indeed be indicative of its association with small mammals. Although the presence of rodents in this context is demonstrated by the faunal remains (Thoms, above), the record of *T. unicolor* here suggests an alternative explanation. Osborne (1983) has posited the view that, in archaeological contexts, it is more regularly recovered from features interpreted as cesspits. Moreover, Greig (1981) has stated that it is usually found in large numbers in medieval deposits which seem to have been cesspits but is a comparatively rare insect today: thus, the decline and virtual disappearance of this means of disposing of human sewage has contributed to the increasing scarcity of the beetle by removing one of its major habitats. Buckland (1994) recovered relatively high numbers of *T. unicolor* from a medieval feature interpreted as a cesspit.

Some of the Carabids favour fairly dark and dank environments. *Laemostenus terricola*, for instance, is also of a synanthropic nature and can be found in cellars, stables and other ancillary buildings (Lindroth *et al* 1973). Others were probably part of a fauna introduced with gathered vegetal resources, such as *Trechus rubens*, which is found under tall weeds such as dock (*Rumex* sp) (Lindroth 1945). Included in the general fauna are a number of predatory species, many of which live in dung and other pabula. Both contexts contained a number of Staphylinid species, for example *Philonthus politus* and *Quedius mesomelinus*, which were probably living principally on the dipterous larvae. The relatively strong presence of species of *Catops* probably reflects the existence of carrion in the pit, confirmed by analyses of both the animal bones (Thoms, above) and the diptera (Skidmore, below).

Many beetles of this genus also favour decaying fungi and drier types of rotting material (Harde 1984), as does *Ptinus fur* (Lindroth *et al* 1973). The inclusion of this pabulum is certainly indicated by the records of the mould-feeding Cryptophagids and Lathridiids, widespread in a range of mouldy plant debris rather than in human waste. The deposit seems not to have been sufficiently fluid for the flies Psychodid or *Eristalis* sp. to have been present (P Skidmore, pers comm) and it is possible that straw was placed in the pit at intervals to absorb excess liquid and odours. Alternatively such material used as floor covering may have found its way into the pit.

TABLE 5

Beetle fauna from the rock-cut pit. Taxonomy follows that of Lucht (1987) and Silverberg (1979)

		Period 2 F292	Period 3 F283	Period 3 F289
COLEOPTERA				
Carabidae	<i>Carabus violaceus</i> L		1	
	<i>Leistus spinibarbis</i> (F)		2	
	<i>Trechus rubens</i> (F)		3	
	<i>Bembidion</i> sp			1
	<i>Harpalus</i> sp		1	
	<i>Pterostichus nigrita</i> (Payk)		2	
	<i>Pterostichus gracilis</i> (Dej)			1
	<i>Pterostichus madidus</i> (F)		5	
	<i>Calathus</i> sp		1	
	<i>Laemostenus terricola</i> (Hbst)		2	1
	<i>Agonum muelleri</i> (Hbst)		3	
	<i>Agonum fuliginosum</i> (Panz)		2	
Histeridae	? <i>Hister</i> sp		1	
Catopidae	<i>Catops fuliginosus</i> Er		6	4
	<i>Catops</i> sp		2	1
Staphylinidae	<i>Phyllodrepa</i> sp			1
	<i>Omalium</i> sp		1	
	<i>Xylodromus concinnus</i> (Marsh)		2	1
	<i>Xylodromus</i> sp		1	1
	<i>Philonthus politus</i> (L)		1	1
	<i>Philonthus cephalotes</i> (Grav)		1	
	<i>Philonthus</i> sp			1
	<i>Ocypus</i> sp		1	
	<i>Quedius mesomelinus</i> (Marsh)		2	1
	<i>Quedius boops</i> (Grav) group		1	
	<i>Quedius</i> sp			1
	<i>Tachinus</i> sp		2	1
	<i>Aleocharinae</i> gen. indet.			3
Elateridae	<i>Agriotes obscurus</i> (L)	1		
	<i>Ctenicera cuprea</i> (F)	1		
Cryptophagidae	<i>Cryptophagus acutangulus</i> (Gyll)		2	2
	<i>Cryptophagus scutellatus</i> Newm		2	1
	<i>Cryptophagus</i> sp		4	1
	<i>Atomaria</i> spp		7	3
Lathridiidae	<i>Lathridius</i> spp		2	1
Mycetophagidae	<i>Mycetophagus</i> sp		1	
Anobiidae	<i>Hemicoelus fulvicornis</i> (Strm)		3	
Ptinidae	<i>Tipus unicolor</i> (Pill)		1202	1088
	<i>Ptinus fur</i> (L)		5	3
Scarabaeidae	<i>Aphodius prodromus</i> (Brahm)	1		
Curculionidae	<i>Otiorhynchus</i> spp	1	2	1
	<i>Phyllobius</i> / <i>Polydrusus</i> sp	1		
	<i>Sitona</i> spp	3	1	3
	<i>Tropiphorus</i> sp	1		
HYMENOPTERA				
Ichneumonidae				
Campopleginae			2	
Apidae				
Bombinae			1	

The occurrence of a number of weevils, which are phytophages, presumably represents local vegetation and vegetal resources that were brought into the castle (*cf* Pelling, below): species of *Otiorhynchus* are commonly associated with grassland where they feed on a variety of herbaceous plants and some species of *Sitona* may be serious pests of leguminous plants (Jones &

Jones 1974). The few insect remains recovered from the basal fill would seem to have had a similar source, possibly representing sweepings into the pit.

DIPTERA

Peter Skidmore

The dipterous material was also extracted from two deposits within the rock-cut pit (F283 & F289). The number of specimens present was 140, belonging to 13 taxa (Table 6). It was possible to identify several of these to species, thanks to the presence of fragments of adult flies inside unhatched pupae/puparia, and to the generally good state of preservation. Again, the overall inference from the taxa present suggests an environment rich in carrion and faeces.

Taxa

Table 6 lists the taxa represented, and the number of specimens of each which were present. The following gives details of the specimens present and also gives a short account of the species concerned. The most comprehensive accounts on the biology of the immature stages of British flies are by Ferrar (1987) and Smith (1989).

TABLE 6

Diptera from the rock-cut pit

	Period 3 F283	Period 3 F289	Total
DIPTERA			
Trichoceridae			
<i>Trichocera</i> sp	1		1
Scatopsidae			
<i>Scatopse notata</i> *	13		13
Sciaridae			
sciarid gen.sp.indet	1		1
Heleomyzidae			
? <i>Tephrochlamys rufiventris</i>	2		2
<i>Heleomyza captiosa</i> *	40	10	50
Sphaeroceridae			
<i>Ischiolepta ?pusilla</i>	1		1
Thoracochaeta zosteræ	6	1	7
<i>Spelobia</i> sp*	c 30		c 30
<i>Telomerina flavipes</i> *	c 22	3	c 25
white limosinine puparium		1	1
Carnidae			
? <i>Meonura</i> sp	1		1
Calliphoridae			
<i>Cynomya mortuorum</i>	1*		1
<i>Calliphora vicina</i>	3	4	7
HYMENOPTERA			
? <i>ichneumonid</i> cocoon	1		
Totals	122	19	141

* identifications on adult characters

***Trichocera* sp** One larval head-capsule. These breed in a wide range of decaying organic matter including humus and carrion.

Scatopse notata Thirteen pupae, some containing the genitalic segments of male and female adults. These flies are unusual among Nematocera in that the larval skin is not shed prior to pupation and hence pupae are normally found still enclosed in the larval skin. The specimens from these contexts were rather unusual in that there was no sign of any larval skins. Larvae of *Scatopse notata* again breed in a wide variety of decaying organic media, including carrion and faeces.

Sciaridae A single pupal fragment including one wing sheath showing the characteristic wing-venation. Sciarid flies are commonly known as 'fungus-midges'. They breed in a wide range of media, often in association with fungal mycelia and moulds.

Tephrochlamys rufiventris A single empty, incomplete heleomyzid puparium clearly differing from *Heleomyza* may have belonged to *T. rufiventris*. This species breeds in decaying animal matter and cess.

Heleomyza captiosa The most abundant species in the sample. Many of the puparia contained fragments of male adults with their highly distinctive genital surstyli. *H. captiosa*, *serrata* and *borealis* breed in decaying carrion and excrement and are typical inhabitants of cess (Skidmore 1995).

Ischiolepta pusilla The single empty puparium agrees well with this species as described in Skidmore (1993), but as not all members of the genus are known in the puparial stage, some uncertainty must remain regarding the true identity of this specimen; it is, however, most likely to belong to *pusilla*. *I. pusilla* has been reared from decaying compost, horse dung, manure and from birds' nests.

Thoracochaeta zosteræ The puparium of this species is highly distinctive (Skidmore 1993) but since all in this collection had emerged, confirmation by adult characters was not possible. This species is very common in archaeological contexts where it was formerly mistaken for the 'urinal fly', *Teichomyza fusca* (Belshaw 1989). In such situations it is believed that it bred in the urine-soaked cess which typifies the habitat of *Teichomyza*. Today in Britain *T. zosteræ* is known only from coastal areas where it breeds in accumulations of decaying seaweed.

***Spelobia* sp** Several puparia contained unhatched male adults but, while their surstyli clearly showed that they belonged to this genus, their condition was inadequate for precise species identification. The prospiracular processes of *Spelobia* puparia are much longer than in *Telomerina flavipes*, which they otherwise resemble in size and shape (Skidmore 1993). *Spelobia* are eurytopic in decaying organic matter.

Telomerina flavipes Several of the puparia contained surstyli of fragmented adult males, thus confirming species identity. *Telomerina flavipes* typically breeds in carrion and faeces with an animal protein component, often in dark situations. It was a very common eusynanthrope in Norse settlements in Iceland and west Greenland, and has been found in many archaeological contexts in Britain (Skidmore 1993; 1995).

White limosinine puparium A single incomplete specimen, this differs from the three described white limosinine puparia (ie *Coproica pusilla*, *Pullimosina heteroneura* and *Spelobia bifrons*) (Skidmore 1993). However, many limosinine puparia remain undescribed.

***Meonura* sp** The single incomplete puparium referred to this genus had hatched, so confirmation by adult characteristics was not possible. *Meonura* breed in carrion and excrement with animal protein content.

Cynomya mortuorum The single fragment was part of the head of a male adult. The species breeds in carrion.

Calliphora vicina The identification of these puparia was based on the shape of the spicules on the ambulatory welts as described and figured by Erzinclioglu (1985). According to Erzinclioglu (1996) records of *Calliphora* breeding in anything other than carrion require confirmation. He also notes that, contrary to common belief, they often penetrate very dark situations for purposes of oviposition, despite their general propensity for strong sunlight.

Interpretation

One of the major advantages in studying the dipterous remains from archaeological contexts is that the specimens studied almost always belong to the immature stages. This means that the matrix from which the specimen was taken was the larval pabulum. Pollen may drift for vast distances; immature diptera in contrast are extremely sedentary.

The sample size in this collection was rather small for a detailed interpretation, but the overall impression is of a habitat in which carrion constituted the main component, though some faecal material, probably of human origin, was also present. This conclusion arises from the following details. While the majority of the taxa present could collectively point to an accumulation of protein-rich faeces, *Calliphora* requires pure carrion (Erzinclioglu 1996). Most of the other taxa contained in the assemblages from these contexts could equally develop in carrion, but the presence of *Thoracochaeta* points to either an accumulation of decaying seaweed, or to urine-soaked cess. Since there were no other indicators of seaweed, despite close proximity to a rocky shore, *Thoracochaeta* indicates an input of liquid cess.

Telomerina flavipes and *Heleomyza* species were the most abundant indicators of human domestic middens in early medieval Iceland and west Greenland, where they evidently bred in the fouled floor coverings of Norse homesteads (Skidmore 1995). In Britain also, these figure very prominently in assemblages from many archaeological excavations, from Roman through medieval times.

Heleomyza captiosa was distinguished from *H. serrata* (Linnaeus) in 1962 by Gorodkov, who found small but consistent differences in the male genitalic surstyli of some individuals then referred to *H. serrata*. He erected the name *captiosa* for one of the two forms. It has been found that *serrata* replaces *captiosa* in more northerly parts of the temperate region of the Palaearctic. Thus, *captiosa* is the common species in Britain and most of Europe south of the Baltic, but in Iceland and parts of Scandinavia it is wholly replaced by *serrata*. The British status of *serrata* requires clarification. In central Europe *H. serrata* is regarded as a glacial relict in the Krkonose mountains (Martinek 1969). The most widespread species is *H. borealis* which occurs throughout Europe as far north as the north coast of Spitsbergen.

FISH REMAINS

Ruby Cerón Carrasco

METHODOLOGY

The fish remains from Carrick Castle were recovered by hand on site and by sieving through a 1 mm mesh size. A total of 83 contexts produced fish remains. Identification of species was made using the modern comparative reference collection of fish bone in AOC (Scotland) Ltd and by

reference to standard guides (Rosello-Izquierdo 1986; Watt *et al* 1997). The recording of 'state of preservation' was based on two characteristics: texture on a scale of 1 to 5 (fresh to extremely crumbly) and erosion on a scale of 1 to 5 (none to extreme). The sum of both was used as an indication of bone condition; fresh bone would score 1 while extremely poorly preserved bone would score 10 (after Nicholson 1991).

All fish bone elements were examined and identified to the highest taxonomic level possible, usually to species or family group, and were otherwise classed as unidentifiable (these consisted mainly of broken fragments). Nomenclature follows Wheeler & Jones (1989, 122–3).

Where appropriate, all major paired elements were assigned to the left or right side of the skeleton. All elements were examined for signs of butchery and burning. The colour of burnt bone was recorded to allow investigation of the nature of burning (eg cooking, rubbish disposal, etc).

Measurements were not taken on the identified elements; instead, elements were classified into size categories for total body length. This was done by reference to modern specimens of known size. For the Gadidae family group, some elements were categorized as 'very small' (< 15 cm), 'small' (15–30 cm), 'medium' (30–60 cm), 'large' (60–120 cm) and 'very large' (120–150 cm). For the non-gadoid species a classification as either 'juvenile' or 'mature' was made. This approach in most cases will provide a sufficiently accurate picture of the size of the species present (Jones 1991).

Table 7 offers a summary of the results. A more detailed inventory of the fish remains can be consulted in the archive of the project records at the National Monuments Record of Scotland.

TABLE 7

Fish bones: numbers of elements by species per period

Period	3	4	5	6	7	8
<i>Species</i>						
Gadidae (Cod family)		7	63	144	5	3
cf Gadidae		2	2	3		
<i>Gadus morhua</i> (Cod)	3		8	56		1
cf <i>Gadus morhua</i>		2	3	5		
<i>Melanogrammus aeglefinus</i> (Haddock)			1			
<i>Pollachius virens</i> (Saithe)			13	8		
cf <i>Pollachius virens</i>				2		
<i>Pollachius pollachius</i> (Pollack)			3	2		
cf <i>Pollachius pollachius</i>				4		
<i>Pollachius</i> (Saithe/Pollack)			7			
<i>Gaidropsaurus mediterraneus</i> (Shore rockling)			2	4		
<i>Merluccius merluccius</i> (Hake)				23		
<i>Clupea harengus</i> (Herring)	1	17	89	266	3	4
cf <i>Clupea harengus</i>		1	2	18		8
<i>Limanda limanda</i> (Dab)			5	2		
<i>Raja clavata</i> (Skate)		14	1	3		
<i>Pagellus bogaraveo</i> (Red seabream)			5	3		
cf <i>Dicentrarchus labrax</i> (Sea bass)		1				
<i>Conger conger</i> (Conger eel)			1			
cf <i>Eutrigla gurnardus</i> (Gurnard)						1
cf <i>Gasterosteus aculeatus</i> (Stickleback)				5		
Salmonidae (Salmon/Trout)			42	10		
Unidentified fragments	2	11	175	190	10	6
Total	6	55	439	741	18	23
Elements per litre	0.2	3	1.7	1.9	0.4	0.5
Total volume sieved	26	18	250	379	37	43

RESULTS

The fish remains were found to belong to mainly marine species, dominated by herring and Gadidae. Salmon/trout was the only freshwater species present.

Herring was most commonly represented in all periods. Herring (*Clupea harengus*) was represented by elements from the head and post-cranial skeleton as well as by vertebrae. This may reflect the good preservation conditions of the site, as vertebrae are usually in much greater proportions to other elements, being the most robust element.

The importance of herring fishing in Scotland can be traced over centuries, with documents showing an early export trade with Holland, although by the Middle Ages the Dutch were fishing in Scottish waters themselves and were probably the first to gut and salt herring while still at sea (Lockhart 1997). The west coast islands and mainland benefit from a variety derived from Atlantic sources during winter months (Gray 1978). The Carrick Castle herring remains may have been supplied from a variety of sources, the most likely being Loch Fyne, due to its importance as an early fishing station and proximity to the site. The Loch Fyne herring fishery may be traced back to the Middle Ages. French vessels caught herring in its waters long before Scottish boats began to engage in such trade (Anson 1950).

The Gadidae group was generally represented by 'small' specimens and mainly by haddock, pollack and saithe. Some elements from 'large' cod were also recovered; some of these were large enough to be hand-retrieved on site. Cod, haddock, saithe and pollack also have a long history as important sources of food. Some, in particular cod and haddock, may have been either consumed fresh or as salted, dried or smoked products, as attested by the recovery of elements from large Gadidae with cut-marks which suggest these fish had been processed. The industry of salting and/or drying fish had been practised in Scotland from at least Norse times.

The concentration of fish bone is relatively low in this assemblage although large amounts of soil were sieved. This implies that the deposits were formed of mixed materials of which the fish remains make a minimal contribution. The fact that some fragile elements survived in good condition also implies that the deposits must have accumulated quite rapidly. In the samples from most periods burnt bone was recovered. This was mainly burnt white or only partly burnt; this is usually interpreted as evidence of rubbish burning.

Periods 5 and 6 contained the largest variety of species representation and had comparable element concentration. Herring and cod family fishes were equally important in both these periods but with highest concentration in Period 6.

PLANT REMAINS

Ruth Pelling

METHODOLOGY

In all 179 soil samples (variously 2 to 43 litres in volume) were processed from Carrick Castle were processed for the retrieval of charred plant remains. These were processed on site using a bulk water separation machine hired from York Environmental Archaeology Unit. Organic material was floated on to a 1 mm mesh and allowed to air dry slowly. Waterlogged deposits were sub-sampled for subsequent processing and analysis in the laboratory.

Dried flots were sorted at the University of Edinburgh under a binocular microscope at $\times 10\text{--}\times 20$ magnification. A total of 41 samples contained charred remains (Table 8). The sorted seeds and chaff were identified at Oxford University Museum. Identifications were based on

morphological characteristics and by comparison with modern reference material held at Oxford University Museum. Nomenclature and habitat information follows Clapham *et al* (1989).

In addition, waterlogged deposits were recognized in the Period 3 cesspit in the vaulted prison (F283 & F289). Sub-samples of 0.5 kg were processed at Oxford University Museum using a simple washover technique. Flots were collected onto a 0.5 mm mesh and scanned under a binocular microscope at $\times 10$ – $\times 25$ magnification while still wet. Any plant remains present were provisionally identified as described above and an estimation of abundance was made (Table 9).

RESULTS

Charred remains A small quantity of charred cereal remains was present in 41 samples, from Period 1 to Period 4. The principal cereal crop is *Avena* sp (oat). Grains were present in each period. A single floret base was recovered from Period 3 but was not sufficiently preserved to enable identification to species. All remains of *Avena* sp have been recorded as cultivated. Although this means that there is the possibility of some wild oats being recorded as cultivated, this provides the best available means of assessing relative abundance.

TABLE 8

Summary of the charred plant remains

Period		1	2	3	4
No of samples with remains		1	4	23	13
<i>Triticum</i> sp	free-threshing wheat grain	–	–	–	1
<i>Hordeum</i> sp	hulled barley	–	2	5	20
<i>Hordeum</i> sp	barley	–	–	2	1
<i>Avena</i> sp	oats grain	1	24	233	99
<i>Avena</i> sp	oats floret grain	–	1	–	–
Cerealina indet.	indet. grain	1	–	48	8
<i>Corylus avellana</i>	hazel nut shell fragments	–	1	1	–
<i>Rubus idaeus</i>	raspberry	–	1	1	4
<i>Rubus</i> sp		–	–	2	1
<i>Ranunculus acris/repens/bulbosus</i>	buttercup	–	–	5	–
Chenopodiaceae		–	–	1	–
<i>Rumex</i> sp	docks	–	–	–	1
<i>Polygonum</i> sp	knotgrass	–	–	–	1
Polygonaceae		–	–	–	6
<i>Rosa</i> sp		–	–	–	1
<i>Plantago lanceolata/media</i>	plantain	–	–	–	2
<i>Sambucus nigra</i>	elderberry	–	–	–	1
<i>Vicia/Lathyrus</i> sp	vetch/vetchling	–	–	–	2
cf. <i>Chrysanthemum segetum</i>	corn marigold	–	–	1	2
Compositae		–	–	–	1
<i>Carex</i> sp	sedges	–	1	–	2
Cyperaceae/Polygonaceae		–	–	1	1
Gramineae	small seeded grass	–	–	1	9
Gramineae	large seeded grass	–	7	7	7
Indet weed		–	–	2	11

Grains of *Hordeum* sp (barley) were present in Periods 2, 3 and 4. The majority of the grains display clear longitudinal ridges characteristic of hulled barley and some grains retained attached fragments of the lemma and palea. A single grain of free-threshing *Triticum* sp. (wheat) was recovered from Period 4. *Hordeum* sp (barley) is the most commonly found cereal within archaeological contexts in Scotland and continues to be so throughout the medieval period until the present century (Boyd 1988). It is likely that *Hordeum* was the staple for bread throughout the history of Carrick Castle. *Avena* sp (oats) are also commonly recorded in Scotland from the Iron Age onwards, for example during the excavation of medieval deposits in Perth (Robinson 1987). *Avena strigosa* and *Avena sativa* both appear to have been cultivated in

Scotland since the Iron Age, *A. strigosa* on the poorer soils. It was not possible to establish which species were represented in the present samples, however, given the absence of well-preserved floret bases. The *Triticum* (wheat) grain may have been an import.

There is some evidence for the collection of wild fruits and nuts. Fragments of the nut shell of *Corylus avellana* (hazel nut) were present in two samples. Charred seeds of *Rubus idaeus* (raspberry) and *Rubus* sp were also present. Waterlogged seeds (not quantified) of *Rubus idaeus* and *Rubus fruticosus* agg (blackberry/bramble) were present in small quantities in several samples, and were numerous in the rock-cut pit fill (eg F283, Period 3). These wild resources are likely to have been easily available in local hedgerows and scrub or woodland undercover.

Occasional weeds were present in the samples. Ruderal/arable species which are ubiquitous in archaeological assemblages include seeds of Chenopodiaceae, *Rumex* sp (docks) and *Polygonum* sp (knotgrass). *Plantago lanceolata/media* (plantain) is a species commonly found in grassy places, but may also have been growing within the immediate area of the castle. Some indication of the local cultivation regime is provided by possible seeds of *Chrysanthemum segetum* (corn marigold), an arable weed of light acid soils.

Waterlogged remains The two samples from the rock-cut pit which were processed for the examination of waterlogged remains (F283 & F289, Period 3) were dominated by the fronds of *Pteridium aquilinum* (bracken). Bracken is a widespread species which most readily favours light acid soil and forms the dominant ground cover under woods on acid soils. Such large quantities within archaeological contexts must be the result of deliberate collection, for example for floor cover or for stable litter. *Potentilla erecta* (tormentil) is again common on light acid soil and is a species of grassland, heaths and bogs. *Prunella vulgaris* (selfheal) is a grassland species while *Ranunculus acris/repens/bulbosus* (buttercup) is also common in damp grassland. Most of these species may have been collected with the bracken. *Urtica dioica* (stinging nettle), *Stellaria media* (chickweed) and *Atriplex* sp (orache) are all common ruderal species which may have been growing within or around the castle.

TABLE 9

Summary of the waterlogged plant remains

Context		F283	F289
Period		3	3
<i>Vitis vinifera</i> L	grape (mineralized)	1	-
<i>Rubus idaeus</i> L	raspberry	3	-
<i>Rubus fruticosus</i> agg	blackberry/bramble	-	1
<i>Corylus avellana</i> L	hazel nut shell fragments	-	1
<i>Pteridium aquilinum</i> (L) Kuhn	bracken fronds	++	++
<i>Ranunculus acris/repens/bulbosus</i> L	buttercup (charred)	-	1
<i>Ranunculus</i> subgen <i>Batrachium</i>	crowfoot	2	1
<i>Stellaria media</i> agg	chickweed	2	-
<i>Atriplex</i> sp	orache	1	-
Chenopodiaceae		1	-
<i>Potentilla erecta</i> (L) Räuschel	tormentil	-	1
<i>Urtica dioica</i> L	stinging nettle	1	-
<i>Prunella vulgaris</i> L	selfheal	-	1
<i>Carex</i> sp	sedges	3	-
Herbage (straw/twigs etc)		-	+++

Occasional fruit remains were present within the deposits including a single pip of *Vitis vinifera* (grape). Finds of grape have been very rare from Scottish sites and include a single example from a mediæval context at Aberdeen (Fraser & Dickson 1982). The seed from Carrick Castle is therefore an important find and perhaps reflects the high status of the castle. While grape must have been imported, the remaining fruits and nuts are likely to have been collected locally. *Rubus idaeus* (raspberry), *Rubus fruticosus* agg (blackberry) and *Corylus avellana* (hazel nut) are all represented.

CONCLUSIONS

Small quantities of charred remains were recovered from all periods of occupation at Carrick Castle, while some waterlogged deposits were also present (especially in Period 3). Oats and barley appear to have been the staple cereal crops throughout the history of the castle, as is consistent with other medieval and post-medieval sites in Scotland. Wheat may have been imported. Fruit remains were also recovered, notably raspberry and blackberry/bramble. An interesting find was a single grape pip from a Period 3 sample. Bracken appears to have been deliberately collected and brought into the site, possibly for flooring or for stable litter.

MARINE SHELL

Stephen Carter

A small assemblage of marine shell was derived from hand-collection and from sieved sample retents. The shells were identified using standard keys and guides (Campbell 1994; Tebble 1976). Numbers of Gastropod species were calculated as shell apices; Bivalve species were calculated as valve hinges (with two hinges per individual). Nomenclature follows Seaward (1990).

Thirteen taxa were identified, represented by a total of 503 shells. Four taxa account for 85% of the shells identified: *Ostrea edulis* (oyster), *Mytilus edulis* (mussel), *Littorina littorea* (winkle) and *Littorina littoralis* (flat periwinkle). The following were also present, though in smaller quantities: *Buccinum undatum* (whelk), *Nucella lapillus* (dog whelk), *Patella* sp (limpet), *Cerastoderma edule* (cockle), *Venerupis pullastra* (carpet shell), *Artica islandica*, *Mya* sp (gaper), *Chlamys* sp (scallop), *Venus* sp (venus).

The marine shell dated predominantly to the later periods (Periods 4 & 5). Only *Ostrea edulis* (oyster), *Mytilus edulis* (mussel) and *Buccinum undatum* (whelk) were present as large shells, suggesting that they may have been deliberately collected for food. The majority of the remaining marine shells were introduced with beach gravel used as levelling for floor surfaces in the basement.

GENERAL DISCUSSION

CARRICK BEFORE THE CASTLE (PERIOD 1)

Carrick Castle is not mentioned as a fortified site in records until 1529, when the entry *castrum et locum de Carrick* appeared in a document recorded in the Register of the Great Seal of Scotland (RMS vol III, no 826). But bearing in mind the importance of the Loch Goil route between the Lowlands and the West Highlands, the site was probably always of some significance. The evidence for a pre-Campbell stronghold at Carrick consists of circumstantial historical evidence combined with the remnant structures which underlie the present tower and enclosure. Furthermore, it has been suggested that the rocky outcrop occupied by the present castle and enclosure was only one element of a larger promontory fortification, defended on its landward side by a ditch and rampart (RCAHMS 1992, 226). This evidence, together with the strategic importance of the site on a long established trade route, suggests that the earliest structures date from at least the late 13th to early 14th century, and may have been part of the aggrandizement of the Stewarts in Argyll, possibly culminating in the building of a hunting lodge (MacGibbon & Ross 1889, 192). The acquisition of the site by the Campbells in the later 14th century may have been a result of their ongoing policy of supporting Stewart interests, ultimately allowing them to capitalize on the Stewarts' ascent to the throne.

The association of Carrick and Cowal with the Stewarts is of some antiquity. In the late 1190s Alan, son of Walter Fitzalan (the first Steward of Scotland) gained possession of Bute, and by the end of the 1220s the family were patrons of Cowal. The family may have acquired the latter as a result of Alexander II's expedition of 1221/2, by which he tried to assert royal authority in Argyll. Little is known of this expedition, but there may have been a number of results: the granting of Cowal to Walter Stewart, the construction of a castle for him at Dunoon and the building of the first phase of Tarbert Castle. It was the Stewarts who were responsible for the building of Rothesay Castle in this same period (Barrow 1981, 114). It is also known that by 1297 James Stewart controlled the barony and castle of Glassary and that he could call on the services of men and galleys from Bute and Cowal. The records are silent about Carrick, however, but this silence may tell us something about the early status of the site. In general, all major Scottish castles are found in records pertaining to the period of the wars with England; that Carrick does not appear in these records suggests that, prior to 1368, it was of little military significance.

At some point in the 14th century the Stewarts must have granted Over Cowal to the Campbells, for in 1368 David II confirmed to Gyllespyk, the son of Colin Campbell, the barony of Over Cowall, which included the parish of Lochgoilhead (OPS 1854, 80). Unfortunately, we do not know when the original grant was made (the granting of lands in Cowal by the Stewarts to family members and Campbell vassals seems to have been ongoing throughout the 14th and early 15th centuries). Robert III (1390–1406) granted to his natural son, John Stewart of Auchingowne, the lands of Stron in the barony of Cowal (RMS vol I, app ii, no 1874). He also granted to Colin Campbell 'certain lands in Neather Cowell, whilk pertained to John Stewart of Auchingowne (RMS vol I, app ii, no 1822). The use of Campbells as the king's men in Argyll really began under Robert I. In 1382 Argyll was appointed king's lieutenant and in 1458 the family patrimony was raised to the status of an earldom. The potential importance of a castle at Carrick in guarding the route to the Campbells' main messuage at Inveraray would have been appreciated almost as soon as the Campbells received the property in 1368.

As intimated above, MacGibbon & Ross (1889, 192) suggested that Carrick was used as a hunting lodge by Scottish kings. This would explain the absence of references in early sources to Carrick as a site of military or strategic significance. Though the site would rise to prominence when it became valuable as a staging post for the centre of Campbell power at Inveraray, the Stewarts themselves may have felt little need for a major castellated structure in Carrick: the strongholds of Rothesay, Dunoon and Dumbarton would have been sufficient to support and bolster Stewart power (and later royal authority) on the west coast while the use of the most important local family as lieutenants in Argyll was an effective way of controlling the region.

AN EARLY HUNTING LODGE AT MEDIEVAL CARRICK?

The suggestion that Carrick was an early Stewart hunting lodge has much to commend it (MacGibbon & Ross 1889). Apart from the evidence of plant remains from the castle itself (see Crone, and Pelling, above), a variety of other evidence supports the likelihood that the area was well wooded in the medieval period. The 13th-century Glen Massan Manuscript, which tells of the wandering of Princess Deirdre, was found in the 'house of a forester' who probably held hunting rights in Glen Massan by the forest of Benmore (Geddes *et al* 1976, 16). In 1661 a document registered under the Great Seal links Carrick Castle, the office of Captain/Keeper of the Castle and an early forest in the region. There were certainly ancient forests at some time: the Statistical Account for Lochgoilhead and Kilmorich records that 'in all the mosses in this country,

even in those on the tops of the hills, stumps of trees of various kinds are found and there is no doubt that this country was much covered in timber' (Stat Acc 1792, 169). In this document James Marquis of Montrose was granted 'the lands and Lordship of Cowal, with the forest of Benmore belonging thereto, with the manor place, mills etc, fishings, teinds, rights of patronage etc, along with the hereditary office of keeper of the Castle of Carrick, within the said lordship, with the fess and emoluments thereof' (RMS vol XI, no 119).

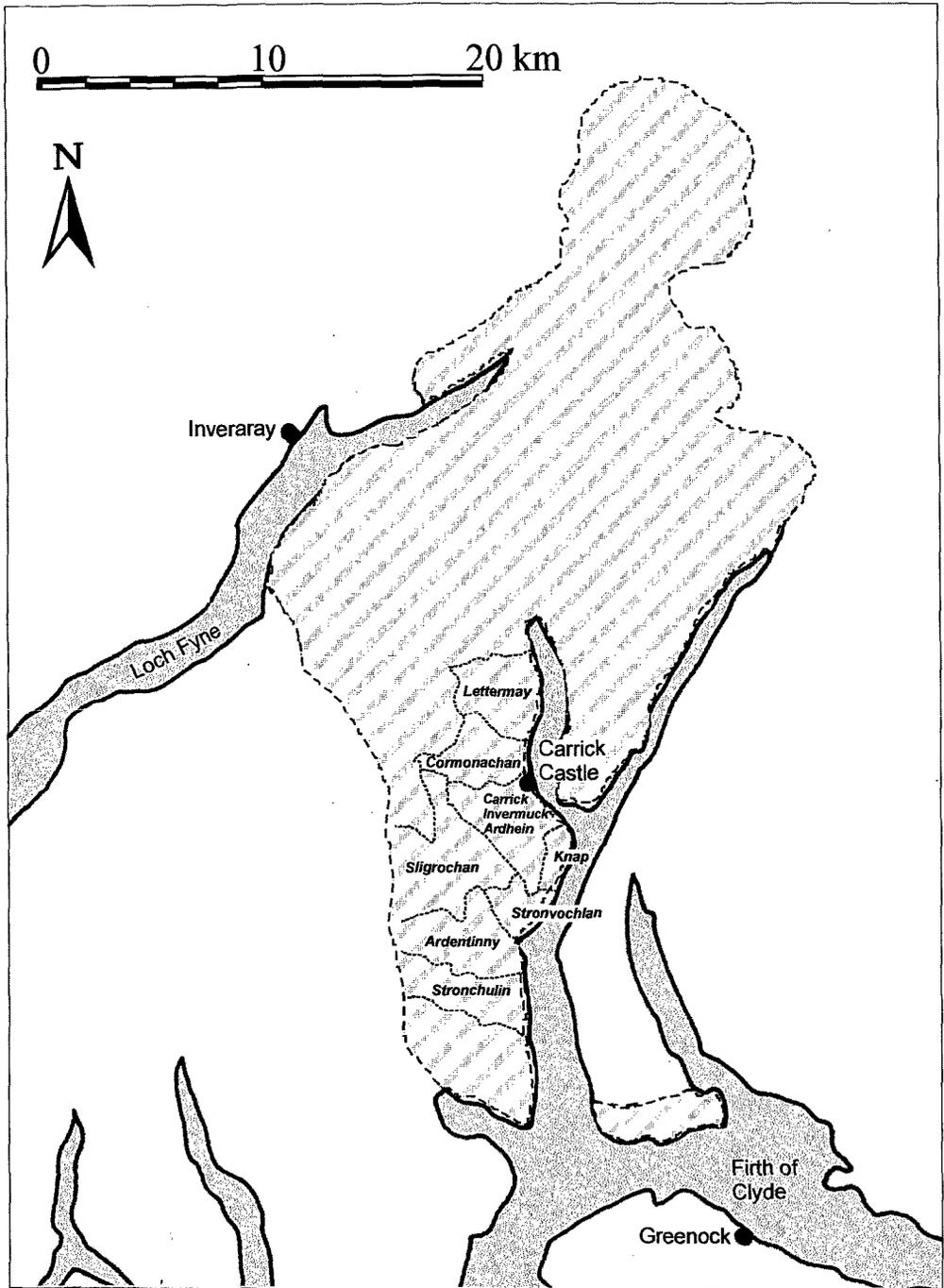
The archaeological evidence for an early hunting lodge at Carrick consists of remnants of a timber and masonry building which underlie the present tower and enclosure. This was a straight-sided building, with long walls of timber construction with wattle or clay infill; the southern limit of the building was defined by a crudely built stone gable, in turn abutted by an outer wall of massive drystone construction. These structural remains suggest an early timber hall within an outer enclosure. The Carrick hall compares well with other remains of early medieval timber buildings, such as those excavated on mottes at Straughan (Yeoman 1984), Peebles (Murray & Ewart 1980) and Robertson (Haggarty & Tabraham 1982), and on early medieval sites at Craggleton and Auldhill, as well as on sites associated with early Stewart occupation on the west coast, such as Dundonald Castle (Ewart 1994). In virtually all the examples of timber halls so far excavated, the dimensions and layout of the buildings themselves owe as much to the constraints of the available space and the limitations of materials as they do to preconceived or imported formulaic designs. At Carrick, it is clear that the outcrop itself dictated the alignment of the earlier building, which followed the strike of the bedrock, thus facilitating the cutting of post settings. (This contrasts with the efforts of the Period 2 builders to realign the outcrop, particularly on the south and west edges of the promontory.)

The massive drystone walling visible beneath the Period 2 tower wall is comparable in size and build to a short section of walling defining the western side of the harbour (illus 9 & 26). These massive walls are interpreted as elements of some sort of outer defensive wall at the limits of the outcrop. The hall itself occupied the largest available flat area on the summit, with the south gable wall erected along the limit of that area to the south, and a rock face (later exploited as the sunken north chamber in Period 2) forming the northern limit. A lower fracture line in this sequence of faults defined the extent of the outer defensive line. It is likely that the route presently used to approach the Period 2 enclosure doorway saw similar use in Period 1, and that there was some form of courtyard alongside the hall on its eastern side, later redefined as the Period 2 barmkin enclosure.

STEWART LANDS IN COWAL

In 1363 King David II granted a charter in favour of Archibald Campbell, confirming an earlier charter granted by Marie Countess of Menteith of the lands of Kilmun in Cowal (RRS vol VI, no 304). It is likely that the Menteith claim on the barony of Kilmun came through the Stewart line. It is clear that the Menteith Stewarts had retained rights over certain areas of Cowal and Kintyre. In 1262 Walter confirmed a charter granting Paisley Abbey the patronage of St Colmanel and the chapel of St Columba near Skipness castle (Young 1990, 22), again reinforcing the point that Cowal must be seen in the context of Stewart aggrandizement in the 13th and 14th centuries.

Early links between the Stewarts and Campbell of Loch Awe are important, since they paved the way for the later Stewart reliance on the Campbells in Argyll. In 1333 Robert Stewart's ancestral estates in Ayrshire, Renfrewshire and Cowal were granted by Edward Baliol to David of Strathbogie. In preparing to regaining control of his lands, the Stewart went to Dumbarton Castle from where he enlisted the support of Dougall Campbell of Loch Awe. In early 1334



ILLUS 26 Lands of Carrick

Stewart's Campbell supporters advanced down Loch Fyne 'till wyn his land, And to mak it his awyn fre'; the retaking of Dunoon castle in Cowal encouraged the inhabitants of Bute to rise and kill Strathbogie's sheriff (Boardman 1996, 5). Later in the same year Stewart issued a charter in favour of Uwar Campbell of the castle and bailliary of Rosneath. This has been interpreted as a reward for his part in the attack on Dunoon (*ibid*, 5).

The Campbell rise to prominence must have been greatly aided by the Stewart's elevation to the crown. With this event Stewart was unavoidably removed from direct control of his old territories and would have relied heavily thereafter on local supporters to ensure that his authority was established on the ground. The Campbells of Loch Awe had supported the Stewarts throughout the 14th century and as a result were well placed to fill the vacuum left by the waning of the McDougalls' power. As Boardman (1996, 182) points out, 'by 1395 the Campbell chief often regarded himself as regional overlord in Argyll, and as heir to the political hegemony which had been exercised by the MacDougall "lords of Argyll" before their eclipse in the Wars of Independence'.

It is in this political and military context that we must see the emergence of Carrick as a fortified site. When Stewart was crowned he relied increasingly on the Campbells of Loch Awe to ensure his power in Argyll and Cowal. With the increase in the area under their control, the Campbells found it necessary to relocate their main seat of power from Loch Awe to Inveraray, and this in turn placed a greater emphasis on the old trade and pilgrimage route between Loch Fyne and Loch Goil to the Clyde ports and the Ayrshire coast. With this development, there was a pressing need for a castle to protect the route through Loch Goil and to oversee the military security of Over Cowal (a function latterly vested in the office of Captain of Carrick).

THE STRATEGIC IMPORTANCE OF CARRICK

Since earliest times, the route through Loch Goil would have been an important communication link between the Lowlands and the Highlands and Western Isles. As Dawson (1992) observes, the relative merits of routes 'depended upon a range of variables — weather, season, safety, urgency and the size and quantity of goods being transported'. With reference to these four criteria it is clear that Loch Goil fitted the bill. The route offered the traveller a relatively safe and easy journey which avoided having to round the southern tip of the Kintyre peninsula. Crucial to the maintenance of the Argyll power base was the use of sea power. The Campbell castles on the coast, with the exception of Skipness, had excellent facilities for galleys and the earls of Argyll kept resident families of shipwrights on Loch Awe and on Loch Fyne (*ibid*). Good communications were vital to the continuing survival and prosperity of Clan Campbell. The earls had frequent contacts with the Clyde burghs of Ayr, Irvine, Renfrew, Dumbarton, and Glasgow, and maintained houses at Perth, Stirling and Edinburgh. The maintenance of their power rested on secure communications and since the main route between Inveraray and the Firth of Clyde was through Loch Goil, it was inevitable that the route should be secured by the construction of a castle.

The political and territorial expansion of the Campbells supplied one context for the importance of Carrick and Loch Goil. Another development in the later medieval and early modern period which added to the importance of this route was the emergence of the livestock trade with the Lowlands and beyond. The Highlands and Western Isles exported goods to the Lowlands throughout the medieval period (in particular the Clyde ports, such as Ayr and Irvine), including hides, wool, timber and other commodities. In the 16th century there was an increase in the number of cattle being transported south. After 1603 this trade was greatly increased with the

opening up of the English markets. This emphasis on the livestock trade encouraged the development of an extensive network of drove roads. As these roads tended to follow established local (and wider) communication networks, it must be significant that one of the early drove roads follows the course of Loch Goil. Indeed the area of land on the shore of Loch Goil opposite Carrick Castle is known as 'Argyll's Bowling Green', allegedly a corruption of the Gaelic for a 'sunny cattle enclosure'. This points to the antiquity of the Loch Goil communication route and to the increasing mercantile importance of the route in a new export market. It is interesting in this context to bear in mind that in 1685, once he had been released from prison, John Campbell, the Captain of Carrick, tried to regain 330 head of cattle which had been stolen from him while he was incarcerated (RPC vol XI, 122). The numbers suggest that these cattle were not simply for local supply, but were intended for the export market. The Captains of Carrick were thus engaged fully in this trade, a trade in which Loch Goil provided a crucial link to the important Lowland market fairs.

Drove roads also provided ideal opportunities for merchants, and this would fit well with our knowledge of the use of Carrick as a store for cadgers' goods while they visited the surrounding country. Loch Goil, therefore, was an extremely important link in a long-established chain of communication.

One other important enterprise which secured the importance of the routes between Argyll and the Lowland burghs was the fishing industry (see Cerón Carrasco, above). Fish were essential to the maintenance of the Lowland burgh fairs. Loch Fyne was central to the trade and the Campbells played a full and active role in the industry. The Captains of Carrick too were keen to ensure that they maintained rights over the industry in Loch Goil and Loch Long, and it was defending these rights that brought them into conflict with the Duke of Lennox in the late 16th and early 17th centuries (Appendix 1). Again, the focus of the fish trade on Loch Fyne and its importance to Lowland markets serves to emphasize the importance of trade routes and in particular the passage down Loch Goil.

There is other evidence which indicates the importance of the route as a link between Inveraray and the Firth of Clyde. In the early 1700s one John Miller, a joiner from Inveraray, was employed by Argyll to carry out work at Rosneath Castle. Miller's accounts for the work include an '*Item for my expense the other men and boats fruaght from Lochgoilshead to Portkill with my work lomms*' (SRO RH15/2/41). Evidently, in normal circumstances, even craftsmen would not consider transporting goods down Loch Fyne and through the Sound of Bute. Loch Goil was the safest, fastest and cheapest route available.

CARRICK CASTLE IN THE 14TH AND 15TH CENTURIES (PERIOD 2)

Although the castle is not mentioned as a fortified site in records until 1529, much of the present tower is thought to date from the later 14th century (RCAHMS 1992, 236). The castle was probably built after 1368 (Period 2), when Lochgoilhead and presumably Carrick itself were in Campbell hands. Its construction therefore owed much to Campbell investment, doubtless encouraged by the importance of the site on the route from the south into the Campbell heartlands in Argyll.

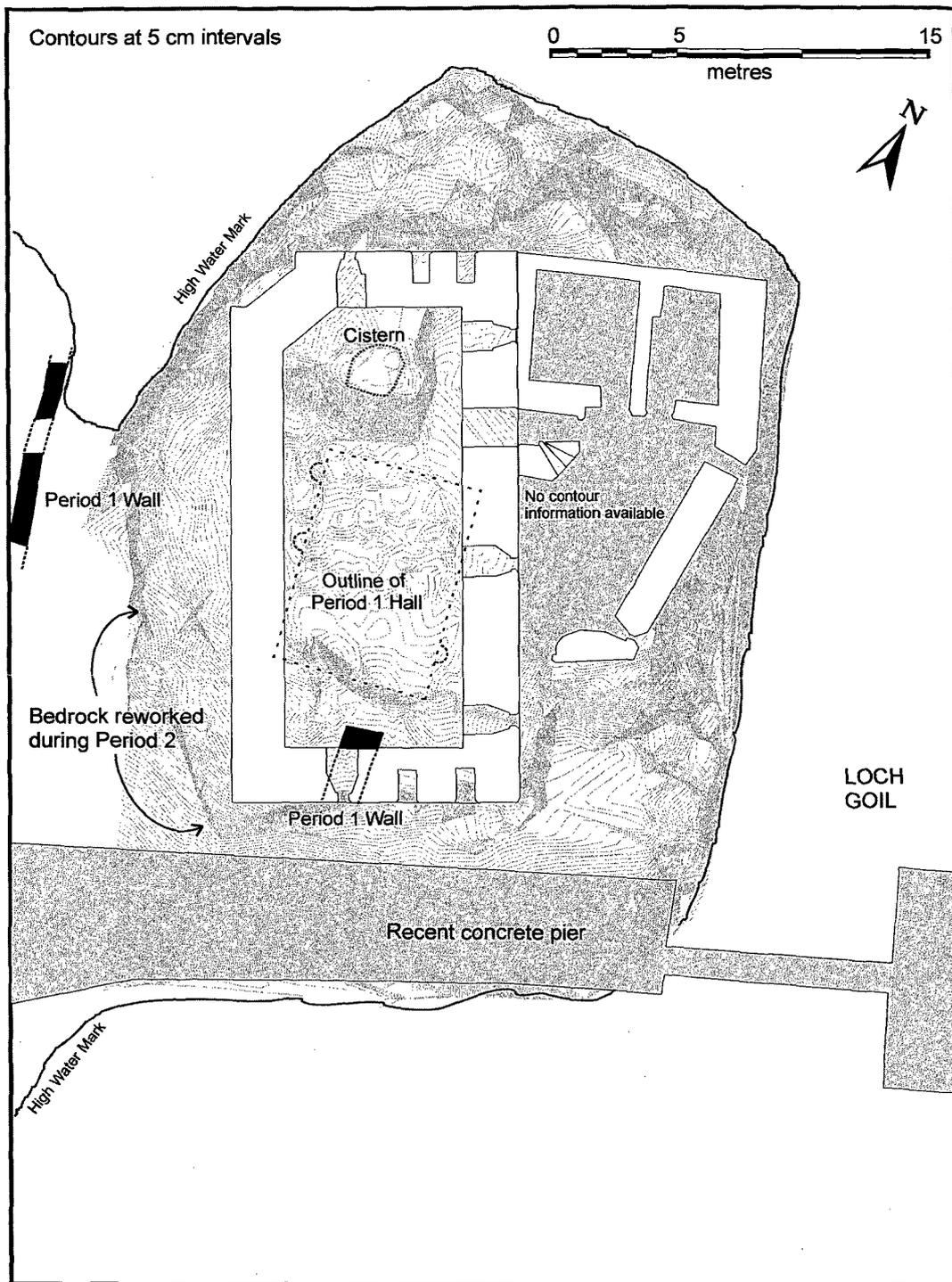
The castle was dominated by a massive tower (illus 2 & 5), aligned to maximize the available space on the upper and lower terraces of the rock outcrop, and to lie parallel to the shore, creating the maximum visual impact when viewed from the loch. The unusually large size of the finished tower may be the result of a change in design during its construction, and there is some structural evidence to suggest that the building was not intended to be raised to its final

height. The rocky outcrop was clearly quarried and regularized to conform to the new NW/SE alignment of the tower, most obviously on the western and southern edges. The pronounced wear on the bedrock along the south edge of the reworked outcrop suggests that access to the south enclosure gate exploited this part of the rock, although this would have necessitated some form of timber bridgework or platform to approach the door.

Excavation of the basement identified three chambers, probably corresponding to a division between three different zones of activity: a service area in the southern chamber, a public room or 'hall' in the central chamber and a domestic room in the north chamber. (No hearth was positively identified in any chamber.) The structural arrangements were customized to both cope with and exploit the severe drop in level at either end. In the southern chamber or 'service area' there was evidence of a joisted timber floor. This simply projected the general floor level of the basement, but retained a small open space at the south wall (to a maximum depth of 1.5 m). Two small drain holes opening from the void beneath the timber work indicate that waste was sluiced out from this area. In the northern chamber, the rock-cut cistern (later a prison cesspit) and the position of the garderobe illustrate how the natural drop from the summit of the rocky outcrop to the next terrace below was exploited on the north side of the site to form a sunken room. This drop in floor level was a consequence of the natural form of the building platform, therefore, and not the expression of any desire to create an 'oubliette' or prison at this early stage of the castle's history. The rock-cut pit, although virtually impossible to date securely, may best be interpreted as part of the service structures within the Period 2 basement, providing a water supply for the household, despite its later adaptation as a prison cesspit in Period 3. The great effort required to dig out the shaft in the first place, and its location at the occupation end of what was generally service and domestic space, do not suggest its primary use as a latrine, or even a more extreme prison accommodation than that afforded by the later vaulted prison itself. The water would have been supplied by fissure flow from the rock-head and represented a secure supply for the household and garrison in times of siege.

There is evidence, in terms of *in-situ* masonry and archaeological fragments, that the basement was originally to have been vaulted (illus 7), but this was never completed. In addition there was a door at first floor-level on the west façade of the tower which must have been accessed via a forestair. The overall dimensions of the basement were reminiscent of hall-house plans elsewhere in the west Highlands. Thus, in its original or intended form, the Period 2 structure would probably have comprised a two-storey hall-house, perhaps with extended hall-like rooms. It is clear, however, that the planned two-storey structure was never completed, as there was no obvious break in the build of the present tower, which stands to a height of three storeys with additional garret space above. Furthermore, the creation of a longer axis facilitated subdivision of the structure, in contrast to the single-roomed arrangements more typical in early tower houses. The proposed domestic role for the northern chamber would compare with other west Highland hall-houses. The location of the latrine here is also typical of the hall-house plan. The first floor door indicates a separation between the lower and upper halls. This may be significant in terms of the separation between basement and residential space in the completed tower, but is also possibly an inheritance from the adapted hall-house layout. In summary, although a hall-house may have been projected, a tower house was actually built. The hybrid nature of the resulting structure resulted in one of 'the largest buildings of its class in Scotland' (Dunbar 1981, 54), well suited to its subsequent multi-purpose role as residence and stronghold.

The tower is clearly the most significant structure in the castle complex, and was intended to act as a self-sufficient unit on the evidence of the water supply. There was, however, evidence for an outer enclosure on the eastern side of the tower, possibly similar to the barmkin in Periods



ILLUS 27 The extent of the rock outcrop occupied by the castle, including earlier (Period 1) features and the modern (Period 5) pier

3 and 4. The outer wall was at least 1.3 m thick. The present south door, providing access to the later barmkin, was adapted from an earlier doorway which probably dated to Period 2. Despite the massive outer wall, the scale of defences may have been relatively slight, as the rock itself would have formed a natural barrier to attackers. Thus the main role of the outer enclosure may have been to offer an adjunct to the basement space, extending the service area of the tower, and it is likely that the present doorway into the basement was established at this time. There may well have been a kitchen in the enclosure, and by providing direct access to the basement, a full separation of lordly and service space would have been achieved, with separate points of entry to each.

THE CASTLE IN THE 16TH AND 17TH CENTURIES (PHASES 3 & 4)

The tower and barmkin were remodelled during the 16th and early 17th centuries to refine the role of the castle as a defended stronghold, rather than as a lordly residence. Within the basement, separate store rooms were established by the construction of cross walls, with a vaulted prison at the north end. The barmkin was refortified to accommodate artillery, and may have formed a simple gun battery, defending the site from seaward attack. These developments echo closely both the activities of the Captains of Carrick (Appendix 1) in the maintenance of regional control and the wider role of Carrick in the full-scale rebellions against the crown by the earls of Argyll in the 17th century.

Access to the vaulted chamber was via a stone shaft at one end (illus 10). This chamber replaced an earlier 'sunken' room, but the simple barrel-vaulted roof and access arrangements clearly date to the later occupation of the site (Period 3) and were almost certainly designed as a prison. Environmental evidence from the rock-cut pit suggests its use as a cess and rubbish pit in this period, rather than as a cistern to supply the castle. It was not possible to determine whether access to the Period 2 garderobe was still possible during the later period in which the vaulted prison was in use (the problem was compounded by extensive disturbance to the basement deposits by earlier excavators).

Documentary information regarding the generally aggressive stewardship of the area by the Captains of Carrick (Appendix 1) confirms the use of the site for incarceration of prisoners. In 1639 the 8th Earl had Sir Lachlan Maclean of Duart imprisoned for over a year in Carrick and Dunstaffnage:

It was reported that . . . [the] captain of the castle of Dumbretton, upon his deathbed, reveilled ane plott devysed for takeing the lives of the earle of Argyle and some other nobles. Whereupon he causes take Maclean and ane other, and wairds them in the castle of Carrick whyle the matter should be tryed' (Spalding 1828, 195).

A few years later, on 24 October 1645, the following recommendations are recorded in the minute books of the Committee of the Estates:

The committee thinks it necessary that some prisoners be put in the castle [ie Carrick], and therefore orders the marquis of Argyll to put a garrison of 24 men in it to be entertained at the expense of the state (Stevenson 1982, 10–11).

Moreover, in an account of the Campbells' retributions against the Lamonts we learn that:

The said George Campbell justice under the said Marquis [Argyll] still continuing in his former cruelties and oppression, in the month of [] 1647 years . . . having taken Patrick Lamond fiare of Escog, and John Lamond of Auchingylle out of the said castle of Escog, after they had rendered the said castle upon the capitulation above mentioned, having detained them prisoners, the one in the castle of Carrick, and the other in the castle of Inchoneill, for the space of a year and three quarters (SRS 1914, 227).

Throughout the 17th century, documentary sources refer mainly to two Argyll castles as prisons: Dunstaffnage and Carrick. It is interesting to note that the Committee of the Estates clearly envisaged that a considerable number of prisoners might have to be housed in Carrick and that the state should pay for the upkeep of the garrison of 24 men. It may have been that the anticipated number of prisoners required major internal alterations to the castle and that these were financed by the state.

The number and variety of cannonballs and shot, apparently left on the sudden abandonment of the castle at the end of the 17th century, testify to the role of the site as both an arsenal and an artillery fortification, as also attested by the refurbishment of the barmkin enclosure in Period 3. The castle is known to have been a base for the control of mercantile traffic along the Loch Goil route, but it was also a military supply base for the activities of the 8th and 9th earls in their abortive rebellions in the 17th century. The use of the site as an arsenal is also referred to in contemporary accounts. In April 1651 a member of the Campbell family who was at that time resident in Dunoon wrote to John Campbell of Drumsynie, Keeper of Carrick:

We have directed the bearer Johne Mcartour younger at the kirk of Dunoon to receive from you upon our band ane hundereth weight of poulder or and berrell w[eight] twelve stane leid and ane dussan of match for the use of the parish of dunoon according to my lord of Lorne his letter promising the same (SRO SC54/22/26).

In an undated document (probably 1651) Argyll wrote to John Campbell:

You shall receive and safely put up in the house of the Carrick two huxter trunks and two takes and two halts dichin thrie tuo pair of boots, with other fur sumster trunks and tuo hampers all of them roberied with helches skinne, with tuo cadgers with thrie scoir eighteen pair of pistols with hulsters and belts w[hich] you shall be carefull to put in some secure place (SRO SC54/22/26).

Finally, there is preserved among the Argyll papers an order of 12 May 1652 from Archibald, Marquis of Argyll, to John Campbell of Drumsynie, Keeper of Carrick, ordering him to transport from Carrick to Dumbarton Castle 40 barrels of powder, with all the match, and also the musket balls obtained from Quintin Mure (Hist MMS VI, 616a, no 70).

These sources indicate that Carrick was not simply used as a store in transporting military supplies northwards, although it was also used in that capacity. Primarily, the castle was used as a major arsenal supplying forces and garrisons to the north and south of Loch Goil. At various

points in the struggles of the 17th century it must have held considerable quantities of military equipment, so much so that it supplied major strongholds such as Dumbarton Castle. The evidence cited does indicate the range of military stores held at the castle. The documents also provide an insight into Argyll's military capabilities even after the struggles of the 1640s; the purchase of 78 pistols plus holsters is of particular interest since these were undoubtedly intended for cavalry units.

The importance of Carrick in the ill-fated campaigns of the 9th Earl is further implied by the Crown's need to reduce the castle before it could be used to supply Argyll's forces. In 1685, the Marquis of Atholl, in preparing the defence of the area against the 9th Earl, considered occupying Carrick as a garrison. However, these orders were revised, and it was decided to destroy the castle instead. In May of that year, Captain Hamilton of the *Kingfisher* did attack and burn the castle. According to his own testimony, the castle was also 'demolished', although the damage may actually have been limited to the burning of the roof; clear evidence for this was recorded in the excavation of the north range, where quantities of burnt debris were recovered.

THE CASTLE IN THE MODERN PERIOD (PERIOD 5)

Deposits representing the long decline of the castle after the attack by *Kingfisher* indicate a generally messier environment, suggestive of casual use of the building, perhaps as some sort of sheil or store. Slight timber partitions or screens suggest reuse of the basement chambers as storage areas for coal and fish.

The last significant works on the site were associated with the activities of the Loch Goil & Loch Long Steamboat Co, and were begun in 1878 when the Board of Trade issued The Carrick Castle (Loch Goil) Pier Order. The stated purpose of this was 'the construction, maintenance, and regulation of a pier in Loch Goil, near Carrick Castle, in the County of Argyll' (SRO SC54/22/117). The pier (illus 27) was built to accommodate the passenger steamboat market. This was emphasized in the Order, under Clause 18, which stipulated that 'no vessel or boat, except steamboats or pleasure boats embarking or disembarking passengers and their luggage, shall be moored alongside the Pier, without the consent of the undertakers or their Piermaster' (*ibid*). The construction of the pier, and subsequent work by the Royal Navy, has effectively obscured the natural topography of the headland, by revetting the east side of the rock against the sea, and by landscaping the area in general to level up the ground for vehicular access.

Interest in the site was rekindled by the visit of MacGibbon & Ross in the 1880s, and by the efforts of the Loch Goil & Loch Long Steamboat Co. This in turn led to the clearance and consolidation of the tower in the early years of the present century (RCAHMS 1992, 226). It has now been restored by the present owner and is once again inhabited.

APPENDIX 1

THE CAPTAINS OF CARRICK IN THE LATE 16TH AND 17TH CENTURIES

Bill MacQueen

In the 16th and 17th centuries the Campbells of Carrick appear with ever-increasing regularity in the sources for the period. The military activity of the Captains attests to the power they could wield in the Firth of Clyde and also illustrates the mechanics of exercising authority on the ground. The following instances from the documentary record for this period indicate that the Captains of Carrick performed a crucial function in protecting a major communication network

based on Loch Goil, Loch Long and Inveraray; they could raise a considerable body of armed men; they could act in defiance of the central courts with impunity; and at the same time they held government office such as Commissioner for Excise.

The exploits of Duncan Campbell of Carrick are especially well recorded. The first indication we have of troubles in the region is on 1 July 1596, when Sir George Elphinstone of Blythwood and Andrew Danielston laid a complaint before the Privy Council to the effect that in 1595, while Sir George was executing the king's commission 'for taking up and lifting of the dewtie of the assise-hering and for halding of courtis', Duncane Campbell, Captain of Carrick, Parlane McWalter of Auchinvennell, and Allaster McCaula, son of Patrick McCaula in Kirkmichael

persewit the saidis complenaris of thair lyves, shoit arrowis at thame, and shoit the said Andro Danielston through the craig with ane arrow, stoppit and debarrit thame fra the effectuating of the commission fairsaid and his Majesteis special charge and directioun concredited unto thame. Andro appearing for himself and for Sir George, the defenders for not appearing are to be denounced rebels (RPC vol 5, 297–8).

One of the longstanding feuds conducted by Duncan Campbell of Carrick was against the McAulas of Ardincaple. Although the struggle drew in the Duke of Lennox and Highland mercenaries, the conflict remained polarized around these two individuals. The origins of the feud are unclear, but hints of trouble first appear in 1598 when Duncan Campbell of Carrick registered a bond to the value of 300 merks for each of his followers in Rosneath, lest they should harm 'Awlay McCaulay of Ardingapill'. At the same time, Robert Sempill of Foulwood registered a bond for Duncan Campbell of Carrick of 2000 merks for the latter not to harm McCaula (RPC vol V, 1700).

The feud took on an added dimension the following year when the Captain of Carrick became embroiled in conflict with supporters of the Duke of Lennox. This dispute centred on the Campbells of Drongie who were close supporters of Duncan Campbell of Carrick. In 1599 the Duke of Lennox had obtained a decree before the session to evict Donald Campbell of Drongie and his sons, John Campbell and Robert Campbell, from his 14-merk land of Mamoir, Mambeg and Forlancarry, in the shire of Dumbarton. They had been evicted lawfully and the Duke had already entered his tenants and servants in the lands. However, in September 1599

while they were 'pasturing thair bestiall and guidis upoun the gress thairof', the said persons, with their accomplices, all armed with hagbuts and pistolets, came to the said lands, and there threatened some of them, 'hurt and dang' others, and vowed to take their lives if they laboured in the said lands thereafter. 'For feir quhairof the said dukis tennentis durst not remane upoun the saidis landis and biggings thairof, bot hes removit thairfra, sua that the siaids persois hes maist violentlie and wrangouslie ejectit him furth thairof aganis all eautie and justice, and hes layd and haldin the same waist (RPC, vol 6, 69–70).

The feud continued, and on 3 April 1600 the Captain of Carrick initiated an action against Lennox's tenants in 'Furloncarrie'. On that occasion, the Captain assembled a large body of men in the House of Rosneath. From Rosneath they made their way to Forlancarry during the night. However, Lennox's tenants managed to evade them, and so Campbell was simply left to carry off

the fishers' nets and cut the rest: 'none dar fishe in the said salmond draucht sensyne for feir of thair lyve is' (RPC, vol 6, 111). It was also charged that the Captain of Carrick and Campbell of Drongie held waste the Duke's land of Mamoir, Mambeg and Forlancarry (*ibid*).

At a session of the Privy Council held in Edinburgh on 27 May 1600, the Duke of Lennox's case was presented by his procurators, Aula McAula of Ardincaple and Henry Keir. Following the Council's consideration of the evidence, all the defenders (who did not appear to answer the charges) were denounced rebels (*ibid*).

Despite rebel status, Campbell of Carrick adopted a more direct approach in dealing with the problem of McAula of Ardincaple in the autumn of 1600. According to the evidence presented by McAula himself at a session of the Privy Council on 25 November 1600, it was claimed that on 24 September of that year, and under the direct instruction of the Captain of Carrick 'Archibald McGlaschen, Donald McGlaschen, his brother, and . . . Mclucas & Donald McCilvie', servants of the Captain, came at night to Ardincaple's 'thinking to have fund him thair about and to have slain him'. When they could not find McAula they attacked his servants Andrew Quhithill and Malcolm Galbraith. In the case of the latter they beat him so violently that he did not recover. The two were then bound head and foot and Carrick's men 'careit them as prisoners . . . quhair they plesit'; Galbraith was beaten so violently that he did not recover (RPC, vol 6, 178-9).

With the failure of the first attempt on Ardincaple's life, Campbell of Carrick decided to entrust his intentions in this matter to 'Neill Campbell in Drumsinen, Johnne McLauchlane, Gilbert McNeill . . . Glasch, servitors of the said Neill, Patrik Boill, Johnne Mcilchallum Gar McDonhill Var, Archibald McGlaschen and Donald McGlashen'. On learning that Ardincaple was staying at Nether Greenock, they made their way to the house at night and there, through a window 'with a long gun', they shot Ardincaple, Patrick Dennestoun, one of Ardincaple's servants, and Archibald Connel. Once again, the Council found in favour of Ardincaple and denounced the Captain of Carrick and his followers as rebels (*ibid*).

The severity of Ardincaple's injuries is unclear, although he was certainly well enough to travel to Edinburgh on 24 November 1600. Duncan Campbell was still determined to remove him, and at the end of that month over 100 followers of the Captain of Carrick 'armed with hagbutts, pistolets, bows, darlochs and habersshons', came at night to the woods of Ardincaple, where they 'plantit themselfis and remanit dernit and quyet quhill the morning, awaiting quhill the said Aula [Ardincaple] should have cummit furth of his hous, that then they might have persewit him of his lyfe'. While they hid in the woods near Ardincaple, they captured four servants of the Duke of Lennox who had come to visit the house of Ardincaple (*ibid*). In the morning Carrick's men nearly made a fatal mistake. Seeing a man riding towards the house of Ardincaple and presuming him to be McAula 'they all ruscheit out of the wod and with acquebutts and bows maist feirsleie persewit him of his lyfe' (*ibid*). They would have slain him had he not revealed himself. It was not Ardincaple, but one Patrick Campbell, servitor to the Earl of Argyll, the Captain of Carrick's superior. After remaining for some time in the woods the company decided to withdraw. On retiring, they 'spuilyeit the houssis of John Dow McAula in Garelocheid and Patrik McCaula in Aldonit' (*ibid*). The same force descended on Lennox's lands of Stron and Achingaith and 'reft from his tenants thereof 32 horses and mares and 24 kye and barbarously houghed 8 kye' (*ibid*). All were denounced rebels by the Council.

This brief episode of factional struggle over a one-year period was followed by the registration of a series of deeds of caution for each of the protagonists. It is not known how the situation was resolved in the short term. References to the feud disappear from the records for some years, but Campbell of Carrick's dispute with Lennox and Ardincaple was never far away. In 1612 the Duke of Lennox, Sir Alexander Drummond, and Aula McCaulay [McAula] of

Ardincaple complained to the Privy Council that ‘although the privilege of holding Admiral Courts in all parts of the kingdom belongs only to the said Duke and his deputes’, yet Archibald Campbell of Glencaridaill, Duncan Campbell, Captain of Carrick and others, usurping the privilege of the Admiralty have, under pretext of ‘ane simulat gift and commissioun of Admiralitye’, been in the habit of holding Admiral Courts on the lands next to the lochs, calling the local fishermen before them, and ‘under colour of justice, they have exacted from the said fishers such sums of money as they pleased to impose’. In the full narrative of the complaint examples were given of the activities of Campbell’s men. For example in October 1612, Archibald Campbell of Glencaridaill with Archibald Campbell, commissioner of Argyll and others ‘came under cloud of night to the loch of Lochgoyll, wher the said Callum McIntailyeour’s boat was lying, and reft and took away with them ane pair of plaidis, ane pan, ane number of fische, with certane geir’. In the same month, these individuals held an Admiral Court on the lands of Treechan, ‘called the fishers and boatmen before them, gave decreets and sentences against them, unlawed some, and fined others’. The complaint continued that Arthour and Dougall Campbell, brothers of the Laird of Straquheir, ‘daily molest the poor fishermen of Lochlung and Lochoyll by taking from them their herring and silver’.

Archibald Campbell, who appeared before the court to answer the charges against him, maintained that he acted under lawful authority from the Earl of Argyll who ‘being his Majesteis takkisman of the assyse hering of the west Illis and Lochis of this Kingdome, and be vertew of his tak haveing sufficient warrand, pouer, and prevelidge be himselff, his deputis, and substitutis to hald courtis for keiping and halding of the floit undir obedience and for observing of good reull betuix the fischaris and merchantis’, had assigned his ‘said tak, with the said power of holding said courts to the said Archibald’ (RPC vol 6, 506–8). The lords found in favour of Archibald Campbell.

The Captains of Carrick continued to become embroiled in local disputes and to pay little heed to the authority of the central courts based in Edinburgh. A chain of events in 1623 illustrates the level of disdain that Campbell of Carrick and his supporters held for central authority, and demonstrates how power and authority was exercised by the local lairds. In that year Clement Russell, a merchant burges of Edinburgh, employed the messenger Robert Glen to poind certain goods of John Chalmers and John Hunter, both in Rosneath. In December, Robert Glen poinded nine oatstacks from John Hunter and two oatstacks from John Chalmers. He tried to sell the goods in Dumbarton in order to realize the debts. On 13 December, Robert Glen returned to the barns of the debtors in order to apprise further goods. However, on that occasion they were met by a large body of armed men, including Colin Campbell of Carrick. All were armed with ‘swordis, lochaber axes, spearis, lancis, corne forkis, steil bonnettis, plait sleivis, targis, bowis, darlochis’, and other weapons; and when the messenger ‘medlit with the saidis cornis’, they violently ‘strak and dang him and these whome he haid brought thair with him frome the saidis cornis’, presenting charged hagbuts and pistolets, and threatening the messenger and his men with death if they ‘steiret any’ of the grain and malt (RPC, vol 8, 162–4). Robert Glen threatened to complain to the Privy Council and in a revealing response the accused ‘cried oute, saying thay cairit nather for king nor caiser, and wald not acknowledge the king nor his lawis, nor na utheris bot thair maister’ (ie Campbell of Carrick or his master, the Earl of Argyll). While this episode may have been embellished for the benefit of the court, there can be little doubt that the narrative of events reflects a general disregard for the authority of the central courts.

Apart from the threat of direct violence, the accused had other means of defying legal authority and ensuring compliance with their own wishes. After assaulting Robert Glen and his men, they sent directions ‘to all the oistleris and utheris inhabitantis within the said Ile that they

sould not ressett the said messenger nor his company nor ressave thame in hoispitalitie, avowing with mony horribill aithis, gif any person did the same, that they sould sett thair house in fyre aboute thair luggis' (*ibid*). Robert Glen and his followers were then left to make their own way out of Rosneath without help from any of the local inhabitants. Badly beaten and in some distress, they would have had to make their way unaided from Rosneath on foot. It was claimed that they were almost dead from famine before they could win out of the area.

This has some relevance for the Campbells of Carrick and the merchants who tried to realize Campbell's debts in the 17th century. In the example of Clement Russell we can see how difficult it could be for merchants to secure payment from individuals in Rosneath, and one suspects that it would be more difficult (and dangerous) to attempt to apprise the goods of the Captains of Carrick in Loch Goil. If Campbell was not in a position to meet his debts, then it is highly unlikely that effective apprisings were carried out against him. The Captains of Carrick were therefore free to act as they wished (as long as they had the support of Argyll) and there was very little that the central courts could do to keep them in check. In the long run it was easier to co-operate with the Captains of Carrick, and this is exactly the pattern we find in the sources.

Although denounced a rebel in 1609, the Captain of Carrick was soon back in favour with the central courts and in June of that year he was among those listed to serve as Commissioners for the Peace, appointed by the Crown. The Captain of Carrick was the Justice of the Peace for Argyllshire. The commission was renewed in 1623 (RPC vol 13, 350). In 1664 John Campbell was appointed a Commissioner of Excise in the Sheriffdom of Argyll, and in 1686 he was appointed by the Crown to uplift taxes and dues in Argyll. In a commission which John of Carrick gave to one Robert Fleming he referred to himself as 'I John Campbell Captaine of Carrick Collector appointed by his majestie thesaurer and excheqr' (SRO SC54/12/2/5). Perhaps the king was now using those individuals who had been Argyll's men as Crown agents in the west, perhaps as a counter-balance to the power vested in the Earls of Argyll themselves. Alternatively, the political vacuum and social instability which followed the collapse of Argyll's rising in 1685 left the Crown little choice but to rely on the support of local officers who had first-hand knowledge of the west, and at the same time who could demand loyalty and support from their own followers in the region.

The Captain of Carrick also fought on behalf of the Crown, against the Clan Gregor. The records of the Privy Council on 31 January 1611 record that a letter was to be sent to Duncan Campbell, Captain of Carrick, ordering him 'to remove all the boats from Lochlong and Lochegoyll so that the clan Gregour may have no passage of these lochs' (RPC vol 9, 124–5). Similarly, in the 1670s century the Captain of Carrick was employed against the McLeans. In 1678 the Captain received a renewal of a commission licensing 'fire and sword against Lachlan McLean of Broleiis and others' (RPC, vol 6, 46). Clearly the military importance of the Captains of Carrick was recognized by the central courts, and although relations could be strained, the courts could also employ their military capacity to their benefit.

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