Excavations at Allt na Moine Buidhe and Allt Lochan nan Losgunn, Perthshire

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Introduction
Gordon J Barclay

On her death in 1986 the well-known and respected Perthshire archaeologist Dr Margaret Stewart (obituary, Taylor 1988) had not completed a number of excavation reports; some of the projects had been undertaken for Historic Scotland’s predecessor departments. In the 1960s and early 1970s rescue archaeology in Scotland was still undeveloped (Barclay 1997); locally based archaeologists frequently stepped into the breach to excavate threatened sites, sometimes with limited funding from government for the fieldwork, but usually with no financial support whatsoever for post-excaivation work (Barclay and Owen 1995). As part of the continuing attempt to deal with the backlog of unpublished excavations sponsored by central government in the 1960s and 1970s, it was decided to gather together Dr Stewart’s unpublished sites and to prepare them for publication. The first group, the prehistoric burial and ceremonial sites, was published in 1997 (Stewart and Barclay 1997). Dr Stewart had also undertaken work on rural settlements of medieval or later date. One of these excavations, on the site known as Allt na Moine Buidhe, was funded by Historic Scotland’s predecessor department. Of the others only in one case did the survival of archive material allow publication – the site variously known as Allt Lochan nan Losgunn, Allean Forest or ‘the Highland Clachan’; this project was funded in the field (and for some post-excavation work) by the Forestry Commission. In both cases Dr Stewart had done some post-excavation work and had prepared a draft report. Dr Stewart’s text is presented here, changed only to reflect additional information now available or to undertake those revisions that she would almost certainly have undertaken in later drafts. As far as possible throughout the sites have been reported in Dr Stewart’s own words, using original illustrations, or redrawings of them. New finds reports have been commissioned from SUAT and prepared or co-ordinated by Adrian Cox but little new commentary or discussion has been added. John Atkinson kindly provided broader discussion of the two sites. Any major insertion by GJB or JA is clearly marked. Unfortunately, no field or publication drawings for the Allt Lochan nan Losgunn site have been located. The report is therefore illustrated only by an annotated redrawing (to 1:1250) of the 1:2500 Ordnance Survey first edition map.

Allt na Moine Buidhe

Introduction

The site lies on either side of the B847 from Kinloch Rannoch to Trinafour two miles north of the junction with the B846 road from Kinloch Rannoch to Tummel Bridge (Illus 1). Though high (300-350 m

above Ordnance Datum) the site is protected on the south and the west. It lies open to the east where it commands a fine view of the west end of Loch Tummel. This site is not marked on the 1861 edition of the OS 1:10,560 sheet XXV III SE but attracted the attention of the late Mr O G S Crawford as it appears on his OS 1:10,560 working sheet. An estate map at Lochgarry House marks 'Ruins' across the site and gives it the name of Lionn Mhor which in Gaelic means 'large enclosed place'. The name Allt na Moine Buidhe means 'burn of the yellow moss'. The site was first recorded by the OS correspondent for Perthshire in 1960. The site, being bisected by the modern road, is now divided into an eastern portion (site A) and a western (site B), both enclosed by a boundary wall (Illus 2). Before excavation a number of foundations were visible in both areas.

In 1964 Dunalistair Estate applied for planning permission to extract mica by open-cast mining from the plateau (site A). This would have involved stripping the surface to a depth of over 3 m. In view of the archaeological interest of the area planning permission was delayed and a rescue excavation on behalf of Historic Scotland's predecessor department was begun in May 1969 and continued in May 1970. Fortunately, the proposed mining never took place.
Site A

The foundations of one short and two long rectangular houses built along the contour and two short rectangular houses with their axes across the contour were visible. Associated with these was a ruined corn-drying or lime-burning kiln, a garden or stackyard and a number of indeterminate foundations. In the southern part of this area was a denuded circular cairn now grass grown. At the southern end of the eastern boundary were two small badly ruined subrectangular foundations and further north a length of loose stony tumble which did not appear to be natural.

Site B

Here it was possible to identify a kiln, two very small rectangular foundations with rounded corners built along the contour (not unlike a type of central Perthshire shieling), and an area adjacent to the modern road which had been artificially embanked to south and west. A second embanked area lay against the southern boundary wall.

The boundary walls

The boundary wall around site A enclosed an area approximately 300 m by 140 m. It had originally been built of dry-stone boulders but was now very ruinous. It was not uniform in character. Along part of the eastern boundary it made use of outcropping rock but on the southern and south-western sides it followed the contour, dividing the grass pasture of the site from the surrounding coarser vegetation which sloped down to the edge of the Allt na Moine Buidhe. On the west the wall, for a short distance, changes to a retaining bank with boulders up to 1.3 m in length.

On the eastern boundary the wall stops abruptly just before the north-east corner and immediately thereafter the finer vegetation of the plateau spills out in a semi-circle on a chord of 27.9 m and for a distance of 20.3 m. From this point up to the main road the wall is not recognisable. There are scattered boulders and some heaps of stones but nothing which could be construed as built. On this northern side there is a natural steep fall to a burn whose sluggish flow has resulted in a considerable area of boggy ground. Definition as between
the types of vegetation inside and outside the perimeter is not as distinct here as it is on the southern side of the site.

Just below the modern road at least one boulder-edged track has approached the site from the north. These tracks are flat and wide, 3.65 m across, and are in marked contrast to a road which approaches the south-west corner of the site from a ford across the Alt na Moine Buidhe. This is a deep V-sectioned road with high banks on either side, which climbs steeply towards the boundary wall. The latter is not broken for access which suggests this road is earlier than the settlement. The road bifurcates and re-unites just before reaching the wall and this may reflect difficulties with a steep muddy gradient in wet weather. The two types of road characterise wheeled traffic and driven animals.

Site B is well defined by the slight turf wall which surrounds it and whose ends hinge on the B847 road. At the point furthest from the road the wall is broken to admit the passage of a track 2.35 m wide. The break shows that the wall here has had a stone core. Beyond the wall the track descends to a basin and then zigzags up the opposite hillside to the north-west and over the watershed to become the present day path to Glen Errochy. But after crossing the burn it is joined by a less well-defined path to the south-west which, following the narrow valley, leads to the back of Craig Rainich where a number of shielings were no doubt connected with the Lionn Mhor settlement.

Excavation

Site A was threatened by the mining operations. During four weekends in May 1969 excavation was undertaken on behalf of the then Ministry of Public Building and Works. This was done by members of the Breadalbane Archaeological Society and three employees of Dunalistair Estate.

Three house sites were partially examined:

House I, measuring 23 m by 4 m (the width is variously quoted as 9 m (before the 1970 season) and 5 m, but the excavation plans shows an internal width of 4 m - GJB); House VI, measuring 8.7 m by 3.5 m; House III measuring approximately 9 m by 5 m. The last example is built across the contour. In addition a complete examination was made of the circular cairn and the kiln within site A.

House I (Illus 2 and 4)

The southern 15 m of the house was deturfed leaving a median baulk 1 m wide on the long axis of the house. Only the eastern half of this area was excavated.

Structurally the house is interesting. First, there is no wall footing or bedding trench. Second, there appears to have been no inner or outer wall face. Third, the wall is exceptionally narrow. The house wall on the east side had been reduced to ground level. What remained was a scatter (averaging 1 m wide) of flattish boulders lying directly on gravel under 80 mm to 100 mm of top soil. At a point 4 m from the northern end the wall was interrupted by a paved entrance 1 m wide. At the southern end the east wall terminated in a well-built post-hole measuring 0.2 m by 0.25 m, and 0.3 m deep. There were several packing stones round the edge and an infill of dark soil. The southern wall was also interrupted by a narrow, paved entrance.

Apart from the post-hole at the southern end of the east wall there were three other sockets in the ground at the south end of the house. None of them had the appearance of built post-holes and they may well have been holes left after the removal of natural surface boulders. They form no recognisable pattern with other structural features. What remained of the floor of this house was uneven. The undisturbed hard gravel made a long central ridge which corresponded with the median baulk. To the west of this the ground dipped and there had been an attempt to fill the resultant hollow with small water-worn stones.

Immediately inside the footing of the east wall there was a strip 1.25 m wide on which there was no archaeological floor and where the gravelly subsoil lay immediately under the turf. Heather roots were very noticeable all along this strip and in the face of the northern cross section it could be seen that the heather was markedly confined. It did not appear over the wall footings and was equally absent from the interior of the house where the floor dipped sharply, became stony, with outcropping and was filled with dark sticky soil.

The walls of house I had never been anything other than flimsy. Today it lies wide open to the north and east and though 150 years ago there may have been more tree shelter winter gales must have whistled through a dry-stone wall 1 m thick. There was no evidence for internal clay plastering. Apart from this a dry-stone wall on such a narrow base could never have remained stable above 1.5 m - if that. Moreover such a thin wall is unlikely to have incorporated the uprights of a cruck built roof, but the strip of soil with rooted heather lying immediately inside the wall may represent an inner lining into which the cruck uprights would have been inserted. Heather turves would have been preferable to grass sods as being less likely to disintegrate and with the abandonment of the house these turves may have re-rooted in situ. This would account for the absence of any archaeological floor immediately inside the wall.

The wall could be traced across the southern end of the house but the western wall was not located, apparently having been thoroughly
robbed. The lack of an end wall is a feature already noticed in the surface indications of a number of long houses in the deserted settlements of central Perthshire. It is possible that this feature might mean the use of the building as a cattle shelter since driving beasts in at one end of a narrow building rather than through an entrance in the long side might be easier. But all the indications at the Allt na Moine longhouse are that it had not been used for housing animals.

Lying just within the southern termination of the east wall, was an oval pit oriented north to south and cut into the underlying gravel. The pit was 0.72 m in length and averaged 0.7 m wide. It was completely filled with intensely black sticky material and when this was removed a number of boulders were found placed haphazardly on the bottom. Alongside this pit at its south-west corner was a flat heath stone, stained black and cracked by heat and separated from the lip of the pit by a narrow stone on edge. The long oval pit may have been a primitive oven. The hand-sized stones at the bottom may have been heated. The quantities of intensely sticky black residue may have resulted from animal portions put in to roast and covered by turves (Barclay 1983). The cracked heath stone may have been where the stones were heated.

In the same vicinity, 0.8 m from the southern section face and 0.45 m from the east face of the median baulk a grey-white sticky substance formed a layer not more than 50 mm thick which spread eastwards for 1 m and northwards for 0.7 m to end on the southern lip of the pit. This layer may have resulted from the decay of a stack of turves.

Alongside the east side of the median baulk 5.6 m from the southern end and extending northwards for 2.6 m was a well-paved area covered with black carbon-stained soil. Various small finds came from this part of the house including two pieces of harness and a clay loom weight while numerous pieces of corroded iron came from the vicinity of the pit.

Four post-holes were located down the centre line of the house. They were 3-4 m apart and all were circular and carefully built, with packing stones and, in one case, a base stone. A building with central roof supports is very unusual. As no trace was found of traditional cruck construction, we must assume that the roof was supported on these timbers.

House VI (Illus 2)

The foundations of this house lay immediately west and slightly uphill of the boulder-edged garden or stackyard. The west wall had disappeared completely and was possibly never more than a flimsy edging of small boulders along the lip of the ‘cut-back’ into the slope of the ground. Between the inner edge of this walling and the eastern margin of the house the interior measured 2 m across.

The north wall had been badly damaged. Enough remained of the lowest course of the east wall to reconstruct how it had been built while the south-east corner, which consisted of one very large triangular boulder strategically placed to form the return of the north/south and east/west walls, had been left in situ. The house builders had placed five or six large boulders averaging 1.2 m by 1.5 m at intervals along the east wall for a length of 8.7 m. The boulders had been laid directly on ground level but because of the natural slope some had been carefully packed with small stones along the outer edge to prevent any downward slip. Small stones had been packed between the boulders. Even so this wall base could not have been much in excess of 1 m wide.

Three large contiguous boulders are set on a length of 2 m of the south wall from the south-east corner. There the lowest course of the wall is intact. It is 0.85 m wide and has a well-built inner face.

Inside, a feature of the house was the extreme unevenness of the floor due to frequent rock outcropping and this, coupled with the total absence of an occupation level, suggests there may have been a levelling up of small stones under a floor of heather. Apart from the discomfort of an uneven surface, without some floor insulation the house must have been damp as it formed a catchment area for water draining from the higher ground behind. No doorway could be defined with certainty.

Relics from the house consisted mainly of pieces of characteristic early 19th-century thick green bottle glass and fragments of heavy brown glazed crocks. In addition there was a sandstone whetstone and a lump of iron slag.

House III (Illus 2)

This house lay across the contour on the northern fringe of the settlement area and somewhat isolated from the other buildings. The walls had been almost completely destroyed making definition of the structure difficult. The visible foundations were enclosed in a rectangle 12 m by 6.5 m and the eastern 7 m was deturfed. This exposed a close-set cobbled floor of rounded stones which at the east end lay against a single course dry-stone wall 1.65 m wide. On the outside the wall face on a length of 4.8 m consisted of large contiguous boulders not footed but with small stones rammed under them. At the south-east corner the wall turns south and was well and closely built for a length of 1.65 m. At this point there is a break in the south wall and from here across the width of the house an ambiguous inner face to the wall could be traced. The cobbbling against this face was
bedded in black sticky earth which had resulted from downhill drainage.

The gap in the south wall extends for 1.45 m and west of this the wall base is difficult to define, only two large boulders remaining in situ. What may have been footing for the wall consists of a band of tightly laid angular stones 0.55 m to 0.75 m wide which could be traced from this gap as far as the west cross-section.

The north wall had almost completely disappeared but the same footing of small well-packed angular stones could be traced on the approximate east/west line and, as on the south, averaged 0.75 m in width.

At the gap in the south wall, for which the term entrance could be justified, the cobbling ends in a semi-circular arc leaving a stone-free area in which the soil was markedly black. Here and there patches had been burnt a dark red.

The structure was possibly a byre or dairy and the effect of the wide sustaining wall at the east end was to mitigate the effect of the slope and make the cobbled floor more or less level. On the outside of this east wall there was a tumble of small stones and in the make-up of the interior of the wall fibrous material which might indicate the use of turves. The only relic was part of a base of a thick coarse clay vessel with a salt glaze.

The kiln (Illus 5)

The kiln had been built into the steepest part of the east-facing slope. The whole of the visible structure was enclosed in a rectangle of 6.4 m by 7.3 m. The perimeter of the kiln shows variation in construction and there is a certain amount of confusion between inner and outer wall faces.

In the south-east quadrant, from the point where the enclosing wall meets the south wall of the flue and for a distance of 4 m, very massive stones had been used to construct the outer face. This stretch of building ends in a recess in the outer wall face measuring 0.7 m deep by 0.45 m broad. The back of this recess is formed by an inner wall face which can be traced back for the full length of 4 m. At 0.65 m beyond the recess the inner and outer wall faces merge to form an inner wall face on the north-west quadrant. Here an outer wall face has been built for a distance of 2.8 m. Where this stops the inner face again bifurcates and very exiguous inner and outer wall face continues until squared off at ground level on the north side of the flue. By contrast the kiln perimeter wall on the south side ends in a long claw-like extension which may have been built to contain draught on the side of the prevailing wind.

All this massive wall building is more usual in a lime-burning than in a corn-drying kiln. Two other features emphasise the possibility of lime burning. One is the relatively narrow upright chamber and the very short flue beyond. For maximum usefulness the chamber of a corn-drying kiln should be splayed outwards so that as much grain as possible is carried on the drying grid and the longer the flue the less likelihood there is of a spark igniting the grain. On the other hand lime-burning kilns generally have larger chambers, the lintels in the flue step down instead of rising as they do here and there is generally no necessity for a flue extension beyond the line of the perimeter wall across the front of the kiln. There is also often a loading platform at the rear.

But there are two extraneous factors to be taken into account. First the quality of the grass on the plateau indicates either soil deriving from a limestone bedrock or else the use of lime as fertiliser. Secondly the external features of the small kiln on the western portion of the site makes it almost certainly a corn-drying kiln. It would be unusual to find two such kilns associated with the same settlement. This leads to the further suggestion that the plateau was mainly kept for grazing, whereas the western slope was used for growing cereals, a point which will be referred to again.

The cairn (Illus 6)

Before excavation the cairn appeared as a low circular mound approximately 12 m in diameter. Several large stones protruded through the turf covering.

The cairn was excavated on the quadrant system, the intervening baulks being 0.5 m wide and the east/west baulks being staggered. In the opposing north-west and south-east quadrants the whole area of the cairn was exposed in order to establish the presence or otherwise of a surrounding ditch or peristalith. As neither was found the remaining quadrants were only partially excavated.

In the north-west quadrant cairn material appeared 0.1 m below the turf. Water-worn stones were more or less of a uniform size of 0.1 m diameter but particularly through the centre of the cairn much larger stones were firmly bedded in a brown layer. Lying on the surface of the cairn material near the west face of the north/south baulk was a portion of a shale armlet (see below).

It was evident that the cairn had been built over a mound of morainic gravel in order to give an impression of height and from the apex of the monument the stones had fanned out for a distance of 3.9 m. The top of the mound had been flattened and the sides scarped in order to lessen the angle of rest and prevent the cairn material from sliding down.

The cairn material was removed from the north-west quadrant and on the underlying morainic gravel were two patches of black carbonaceous staining both near to the outer margin of the
Illus 5. Allt na Moine Buidhe: plan of kiln.

cairn. The first was c 40 mm in diameter and c 20 mm in depth. The second spread intermittently over an area of c 150 mm in diameter.

In the south-east quadrant larger stones were found up to 0.5 m in diameter and near the top of the mound they were firmly bedded in very black
soft loam. One particularly flat stone measured 0.6 m by 50 mm by 150 mm. There were signs of disturbance at this point and possibly suitable cairn material had been removed for later house building. In this quadrant the boundary between the upper scarping and the lower natural slope was
very pronounced especially on the south side of the east/west baulk where it occurred at 4.5 m from the top of the mound. When the cairn material was removed three patches of black carbonaceous material appeared on the surface of the undisturbed gravel. One of these calls for further description. It lay adjacent to the east side of the north/south baulk. A hollow 0.2 m by 0.15 m in diameter and 0.1 m deep had been dug in the subsoil and filled with black soil which included fragments of charcoal and chips of white quartz. This deposit had been covered by a flat stone slightly smaller than the diameter of the hole. Under the stone the carbonaceous soil was tightly and firmly packed.

In the south-west quadrant, to economise on time and labour, a diagonal was drawn across the quadrant at a point 3 m down each baulk from the apex. This area, which included a slight depression in the turf cover, was examined. When the turf was removed and under a thin layer of cairn material a disturbed short cist was exposed. The cover stone had gone and infill to the top of the side stones was cairn material mixed with soil.

The cist had been carefully built. The north side was a single slab very smooth and footed so that the level of the disturbed gravel inside the cist was lower than the outside. The slab measured 1.05 m by 0.35 m to the top of the undisturbed level 0.1 m thick. Against this the east end slab had been so carefully fitted that the blade of a pen knife could not be inserted between the edges of the two slabs. The east end slab measured 0.6 m by 0.45 m by 0.1 m thick. The west end slab measuring 0.7 m by 0.35 m by 0.15 m had been equally well set in position. The south wall by contrast was made up of three slabs.

The cist was dismantled before the cairn site was back-filled. When this was being done a tiny scrap of cremated bone was found inside the cist and packing stones had been placed on the outer margins of the east and south slabs.

The part of the north-east quadrant excavated revealed no additional evidence.

Reports on pottery, artefacts and animal bone

The material reported upon below is held by Perth Museum and Art Gallery (accession number 1998.399.1–43).

The pottery
Derek W Hall

There are 79 sherds of pottery from this excavation. Seventy-six of these date to the late 18th/early 19th centuries and represent a mixture of brown glazed earthenwares, china and a base sherd of salt-glazed stoneware. The remaining three sherds are very abraded and may be of medieval date. These pieces appear to come from a glazed jug and belong to the East Coast Redware tradition which is dated between the 13th and 15th centuries (Hall 1996, 126).

The artefacts
Adrian Cox

with a contribution on the coins by the late Anne Robertson and on the shale objects by Fraser Hunter

The artefact assemblage from this excavation includes a broad range of types, representative of a variety of activities both within the buildings and in their immediate environment. This diversity of finds provides insights into aspects of the daily lives of the inhabitants of the site. Rare evidence of the presence of a child or children survives in the form of a small leather shoe. A majority of the finds dates from the 18th and early 19th centuries but a shale bangle fragment is of earlier date.

A select catalogue is presented below. Measurements are generally expressed to the nearest 1 mm, except where they are less than this, when they have been expressed to the nearest 0.05 mm (clay pipe stem bores) or 0.1 mm (other measurements).

Non-ferrous metal objects. The two finds of non-ferrous metal from the excavation are a copper-alloy button with a plain, circular face (catalogue no 1) and a fitting from a leather belt or strap, either from clothing or horse harness (no 2). The latter is of roughly heart-shaped form with a rectangular terminal (Illus 7). The perforation through the terminal would have accommodated a clasp attached to the opposite end of the belt or to another strap. The notched edges of this perforation would have permitted the clasp to be locked into position. A small fragment of the leather belt or strap which this fitting terminated survives within it.

1. Button. Diameter 24 mm; surviving thickness 4 mm.
Copper-alloy button with a plain, circular face and its eye set within a conical boss. The eye is broken and the edges of the face are chipped and abraded. The entire surface has a white metal plating, probably of tin. (Not illustrated.)
Longhouse; Find no 44.

2. Strap end fitting. Length 44 mm; width 32 mm; max thickness 4 mm.
Tin or pewter strap end fitting with a heart-shaped plate, enclosing a double thickness of leather by means of three circular cross-sectioned rivets. A rectangular projection at the closed end incorporates a square recess within which is a notched, sub-rectangular perforation. Abraded and slightly scratched.
Find no 1.
Iron Objects. The iron artefacts from the site represent a diversity of functional types, including examples used in horticulture, textile manufacture and cooking. Structural fittings and horse equipment are also represented.

A plain, rectangular buckle of simple, utilitarian design (no 3) came from the longhouse. Probably of early 19th-century date, it probably served as a strap buckle. No 4 appears to be a thin, half-length horseshoe, corresponding to a type referred to as a ‘grass-tip’ (Hadfield 1981, 166), which protects the hoof wall in the region of the toe from splitting. It is worn by horses moving at a fast pace over grass.

3. Buckle. Length 28 mm; width 41 mm; thickness 10 mm. Plain, rectangular buckle, with the front edge of the frame slightly broader than the remaining edges. The pin was made from a tapering, rectangular cross-sectioned strip and is looped around the frame. (Not illustrated.) Longhouse; Find no 45.

4. Horseshoe. Length 83 mm; width 15 mm; thickness 4 mm. Probable half-length horseshoe, crescent shaped and tapering towards each end, with five rectangular nail holes, two near to each end and the other placed near the toe. One hole is occupied by a nail fragment. (Not illustrated.) Longhouse; Find no 41.

The presence of a blade from a sickle (no 5) indicates that the area was cultivated. Both the tang and the blade tip are missing from this example (Illus 7). Two sickles were recovered from an excavation of an 18th-century Highland longhouse at Lianach, Perthshire (Caldwell and Wingrove 1988, 313, illus 10, nos 30 and 31).

5. Sickle blade. Length 206 mm; max width 21 mm; thickness 5 mm. Sickle blade fragment with a smooth curvature. The width and thickness of the blade are almost uniform along the entire length of this fragment, the width increasing only slightly, from 20 to 21 mm, from one end to the other. Occasional pseudomorphs of wood or straw adhere to one side of the blade. Longhouse; Find no 2.

No 6 is an axe from a horizontal spinning-wheel, incorporating a crank with a bolt to connect it to a vertical wooden rod (a footman), which would in turn have been connected to the treadle footboard (Illus 7). Introduced in the 17th century, use of a treadle meant that the spinner had both hands free for drafting the fibres (Baines 1985, 11). Spinning-wheels were made in a great variety of forms, especially during the late 18th century, when this site was occupied. The great expansion in the linen industry in 18th-century Scotland was based on a trade and manufacture which was almost entirely rural and domestic, and in the 18th-century household, linen for bed and board is the most notable item appearing in inventories and testaments (Cheape and Sprott 1980, 16–17). No 7 also appears to be a component from a spinning-wheel, possibly part of a spindle assembly (Illus 7). It appears similar to components found on wheels with removable assemblies mounted on a turned post (eg Leadbeater 1995, 16).

6. Spinning-wheel axle. Length 198 mm; max width 9 mm; max thickness 8 mm. Axle in the form of a rectangular cross-sectioned rod terminating in a curved crank at right angles to the shaft. Moderately corroded. Find no 13.

7. Spindle component. Length 194 mm; max diameter 16 mm. Possible component of a spindle assembly from a spinning wheel, consisting of a circular cross-sectioned rod (an axle) with a flanged tube (a bush) mounted at either end. The axle probably originally rotated within the bushes, which served as reinforcements to allow the mechanism to be mounted in a wooden frame without causing excess friction and wear. The object is distorted and moderately corroded. Find no 12.

A heavy iron ring (no 8) is of uncertain function, although considering its weight and dimensions it may represent part of a structural fitting, such as a connector or collar for a wooden pipe, or a link from a cart or piece of machinery. A complete U-shaped staple (no 9) came from the interior of the longhouse. Staples of this type could have served a variety of functions as structural fittings within buildings. They were used in conjunction with hasps or hooks to secure doors, shutters and the lids of chests, for example. They could also have functioned in the same manner as eye bolts.

8. Ring. Diameter 100 mm; length 53 mm; thickness 7 mm. Ring with three evenly spaced linear flanges projecting from the outer surface. Heavily corroded. (Not illustrated.) Find no 15.

9. Staple. Length 66 mm; max width 32 mm; max thickness 9 mm. U-shaped staple with tapering arms, made from a rectangular cross-sectioned bar. (Not illustrated.) Longhouse; Find no 42.

Evidence of food preparation activities within the longhouse includes a fragment from the base of a tripod vessel of cast-iron (no 10) (Illus 7). This fragment, with one of the vessel’s legs intact, has an irregular, jagged edge, consistent with the normal fracture pattern of cast iron vessels. Abraham Darby developed and patented a casting method for three-legged iron pots, providing cheaper and tougher articles, which became a popular replacement for the brass vessels which
had hitherto been imported from the continent, especially from Holland. Darby’s company, established at Coalbrookdale, Shropshire in 1707, included a range of such vessels in their 1875 catalogue (Ames 1980, 10). This example is more likely to have been manufactured by one of the Scottish lowland iron foundries.

10. Vessel base fragment. Surviving height 112 mm; surviving width 157 mm; vessel wall thickness 3 mm. Fragment from the base of a cast-iron, three-legged vessel. One leg survives, 36 mm in length and approximately D-shaped in cross-section. The fragment has broken close to the position of a second leg. The fragment has an irregular, jagged edge. Slightly corroded.

Longhouse; Find no 14.

Coins (by A Robertson). Four coins, of 18th- and possibly early 19th-century date, were recovered from the excavations. Three of the coins are catalogued below (nos 11–13); the fourth is a heavily corroded example. The coins were identified by the late Professor Anne Robertson, then of the Hunterian Museum, University of Glasgow. Her original imperial coin measurements are noted alongside the metric equivalents.


Find no 37.

12. Halfpenny? Illegible, but probably halfpenny of George II (1727–60). Copper alloy. Size 1.1” (28 mm). Weight 6.28 g. (Not illustrated.)

Find no 38.

13. Halfpenny? Illegible, but possibly halfpenny of George II (1727–60) or of George III (1760–1820). Copper alloy. Size 1.1” (28 mm). Weight 7.89 g. (Not illustrated.)

Find no 39.

Stone objects. Both wool and flax fibre were spun with the distaff and spindle. The latter was weighted by a spindle-whorl such as no 14, which is a complete but unadorned example, with polish on its surface indicating long-term use (Illus 8). Spinning by this method has been practised since prehistoric times and continued in more remote, rural communities into the early part of the present century. In Angus, use of the distaff and spindle by women was commonplace in the 18th century, and girls would take along their spinning when tending the herds (Cheape and Sprott 1980, 16).

14. Spindle-whorl. Diameter 32 mm; diameter of central hole 13 mm; thickness 19 mm. Spindle-whorl of flattened globular form with a central, circular hole. The surface is polished but undecorated, and is moderately abraded. Derived from fine-grained, calcareous sandstone.

Find no 16.

Several worked stones were retained by the excavators. Some appear to represent building stones, only crudely shaped around their edges. Three stones (eg nos 15 and 16) are roughly disc-shaped (Illus 8). Two of these exhibit no sign of any use-related wear, although one face of no 15 is exfoliating and hence any evidence of wear may have been lost. A slight indentation exists in one face of no 16, but appears likely to be due to naturally occurring differential hardness zones within the stone rather than to wear. No 17, a D-shaped fragment, appears to represent part of an originally oval stone.

Discoid stones could have served a number of uses, for example as pot stands, platters or vessel lids. Shaped stones may have been heated and then used in cooking. The lack of diagnostic wear traces makes it difficult to be certain of specific functions.

No 18 is possibly a fragment from a roof slate, and represents the only possible evidence for slated roofs on the site. The thickness and density of this fragment indicates that, in terms of its weight, this would have been a substantial slate (Illus 8).

The stone from which these artefacts are derived was most probably from a local source. A majority is derived from psammite (metamorphosed sandstone), composed mainly of quartz and often also including feldspar. The low proportion of mica in this rock type prevents it from splitting easily.

Geological identifications are by Dianne Dixon.

15. Disc. Diameter 149 mm; max thickness 15 mm. Crudely shaped disc. Both faces are slightly uneven and there is little sign of use-related wear on either. Derived from psammite. (Not illustrated.)

Find no 18.

16. Disc. Diameter 102 mm; max thickness 26 mm. Crudely shaped disc. One face is flat, but the other is lower in the centre than around the edge.

Find no 23.

17. D-shaped fragment. Length 123 mm; width 153 mm; max thickness 40 mm. D-shaped fragment of a shaped stone, probably originally oval in plan, with a convex face and a flat face. Neither shows evidence of use-related wear. Derived from psammite. (Not illustrated.)

Find no 19.

18. Roof slate? Length 71 mm; width 182 mm; max thickness 20 mm. Probable roof slate fragment of slightly uneven thickness, including the upper edge of the slate. The fragment has broken across a drilled, roughly circular hole.

Find no 28.
Shale objects (by Adrian Cox and Fraser Hunter). A fragment of an armlet or bangle, derived from oil shale (no 19), was recovered from the excavation of the cairn, from directly beneath the surface turf layer (Illus 8). The fragment, which is of D-shaped cross-section, represents part of a bangle originally of 70–75 mm internal and 85–95 mm external diameter. The context of this object would appear to indicate a probable Iron Age date, although early medieval bangles also exhibit this characteristic D-shaped cross-section.

Archaeological evidence for the use of jet, lignite and shale for the production of armlets or bangles has been found in both Britain and Ireland, from as far back as the Bronze Age. Evidence for the continuing production of jet artefacts in the Roman, Anglo-Scandinavian and medieval periods comes from excavations in York (Tweedle 1986, 186). As partly finished shale have been found throughout Scotland (e.g. Callander 1916, 234–7), the use of local rather than imported resources seems a strong possibility in many cases.

The presence of the narrow groove encircling this fragment, and the polished, rounded condition of its ends, indicates that it was re-used. It may have been intended for subdivision into blanks for making beads or pendants. Abrasion scars overlying the residual scars from the bangle’s manufacture stem from its re-use.

A semi-circular fragment (no 20) represents part of a bead or a spindle-whorl. The base of the fragment may represent the site of a fracture across an originally biconical object. Alternatively, it may represent an intentionally flat face, although now slightly uneven.

Both finds were submitted for analysis as part of the National Museums of Scotland’s research programme into the use of jet and related organic black lithic materials in prehistory. Analysis was by X-ray fluorescence and X-radiography using standard methods (Hunter et al 1993; Davis 1993). The analysis of no 19 shows that it is an oil shale, based on its high X-ray density. This implies that it is not local to the immediate area, which is dominated by Dalradian metamorphic rocks (Johnstone 1966); oil shales are typically Carboniferous. While the methods used cannot yet pin down sources, the nearest available outcrops are the Central Scottish coalfields (Gibson 1922). This implies that the bangle may have been exotic to the site, presumably making it of some value and partly explaining the attempts to re-use it after breakage. Such re-use is paralleled in an armlet from Auldhill, Ayrshire which was adapted for bead manufacture after breakage and was also shown analytically to be exotic (Hunter in Caldwell et al, in preparation). Analysis of no 20 shows this is a highly mineral shale, and there seems no reason to look beyond a local source for this material.

19. Armlet or bangle fragment. Length 48 mm; width 18 mm; thickness 18 mm. Fragment of an armlet or bangle, derived from oil shale. Approximately 16 per cent of the original object survives. Originally of D-shaped cross-section, part of the surface has broken away along one side. The ends of the object are slightly rounded and the entire surface appears polished. A groove encircles the object approximately half way along its length.
Cairn; Find no 6.

20. Bead or spindle-whorl fragment. Diameter 28 mm; thickness 6 mm. Semi-circular fragment, from either a bead or a spindle-whorl of conical or biconical form. Derived from carbonaceous shale.
Find no 17.

Glass bead. A faceted bead of blue glass (no 21) was recovered from the interstices of an area of paving sealed below the occupation levels of the longhouse, and is thought to have been deposited earlier than the sealing of the pavement. The bead has eight facets, although their edges are rounded, possibly through use-related wear (Illus 8).

The bead was examined by Mrs C M Guido, who felt it to be an example of Viking date, paralleled at such sites as Birka (Ambrosiani 1973). Faceted beads similar to no 21 are, however, also known from both earlier and later contexts. For example, a group of similar beads from an early Iron Age context is among the collections of Stavanger Museum in Norway (accession no 2256). Beads of similar form continued to be made until the 18th century. Examples include two finds of early 18th-century date from Southampton (Harvey 1975, 276, fig 249, nos 1960–1), and a similar bead found at Bertha, near Perth, is thought to be of 17th- or 18th-century date and of Dutch origin (M Hall, pers comm). Dr Julian Henderson (pers comm) of Nottingham University commented that the bead did not resemble the many Viking beads that he had examined, and that it was more likely to be of post-medieval date.

Given the context of this example and its relatively unweathered condition, it seems quite possible that it represents a 17th- or 18th-century find, although an earlier date cannot be discounted.

21. Bead. Max width 12 mm; thickness 7 mm.
Faceted bead of translucent blue glass, with a central, circular perforation (diameter 3 mm). There are eight facets, but their edges and corners are all slightly rounded, and the shape of the bead is slightly irregular.
Beneath longhouse floor; Find no 11.

Vessel glass. A total of 221 fragments of vessel glass was recovered from the excavation. Most are recorded as having been found in the longhouse;
the origin of others is not recorded. A wide variety of types is represented, although almost all the fragments are from bottles and none pre-dates the 18th century. The bottles represented include blown wine bottles of varying size, with kicked-up bases and rolled lips, and moulded vessels of a range of types.

The assemblage includes base and neck fragments from wine bottles of fairly squat form, representing the earliest glass present. No 22 is a neck fragment incorporating a feature known as a 'string ring', a ridged band below the rim to which a loose, tapering cork could be tied (Illus 9).

No 23 is a rim and neck fragment from a small rectangular or octagonal bottle, similar to types popular with chemists and druggists in the Victorian period, for storing medicines and for use as dispensing bottles (Illus 9). Although no evidence survives on this fragment, such bottles were often embossed with the chemist's name and sometimes with a note of the contents and dosages.

Also among the bottle glass are two conjoining fragments from a bottle with an applied lip (no 24) (Illus 9). The evidence of this particular method of manufacture can be seen in the broken section through the neck wall. Applied lips were introduced to conceal the irregularities of sheared lips. The latter were favoured when a jagged edge around the mouth of a bottle was acceptable, as this edge would bite into a loose-fitting cork, making a good seal, but the applied lip, moulded onto the bottle after it had been formed, strengthened it and allowed it to accept a tight-fitting cork. The fragments from this site probably date from the early to mid-19th century.

A neck fragment from a swing-stoppered bottle (no 25) was found, along with at least two other fragments which may be from the same or a similar bottle (Illus 9). Swing-stoppered bottles were in common use in the final quarter of the 19th century.

22. Bottle neck. Surviving depth 59 mm; external diameter at rim 28 mm; internal diameter at rim 19 mm.
Neck fragment from a bottle of fairly squat form, in slightly weathered, translucent green glass. There is a narrow, ridged band just below the rim.
Find no 8.

23. Bottle neck. Surviving depth 22 mm; external diameter at rim c 22 mm; internal diameter at rim c 12 mm.
Rim and neck fragment from a small, rectangular or octagonal bottle in pale green glass with a flaring rim. The rim diameters expressed above were calculated by projecting the surviving section of rim.
Find no 9.

24. Bottle neck. Surviving depth 40 mm; external diameter at rim 28 mm; internal diameter at rim 20 mm.
Two conjoining fragments from the neck of a bottle in pale green glass, with an applied lip. Application of the lip to the sheared top of the bottle caused stresses in the glass in this area, now evident as a series of irregular surface cracks on the internal surface of the neck. Only one of the two fragments has been illustrated, in order to show the broken section.
Find no 7.

25. Bottle neck. Surviving depth 39 mm; external diameter at rim c 29 mm; internal diameter at rim c 20 mm.
Neck fragment from a swing-stoppered bottle in pale green (almost clear) glass. The fragment includes a circular recess into which the wire hinge of the stopper mechanism fitted.
Find no 10.

Leather shoe. Fragments of a small leather shoe, including part of the upper, and of the sole (no 26), are among the post-medieval finds from the excavation, dating from the 18th or 19th century (Illus 10). Even allowing for a degree of shrinkage of the surviving fragments, the original shoe could have measured no more than c 150 mm in length when complete, hence it must have been made to fit a child. It was possibly discarded when the sole became worn through, or may have been concealed in the property - hiding a child's shoe for superstitious reasons is not unknown (Barclay pers comm).

26. Shoe. Surviving length (upper) 81 mm, (sole) 58 mm;
max width of sole 46 mm; thickness of sole 3 mm;
surviving height c 34 mm.
Part of the upper and part of the sole of a small shoe, both parts bordered by stitch holes (stitch length 3–4 mm). On the upper, the throat has a decorative and finely-stitched edging (stitch length 1–1.5 mm).
Find no 36.

Clay pipes. The assemblage of clay pipes from the site includes a bowl (no 27), a bowl wall fragment (no 28), a heel and stem fragment (no 25) and four plain stem fragments. The more diagnostic pieces are catalogued below.

No 27, the most complete bowl from the site, is of a fairly upright form typical of the late 18th and 19th centuries. The bowl fragment (no 28) is from a bowl of similar form and size. The rim diameter has been estimated from this fragment and appears similar to that of no 27, although the rim angle is slightly more horizontal. No 29, a heel and stem fragment, includes a short spur similar to that on no 27 but is from a smaller and more forward-leaning bowl. None of the pipe fragments is decorated but four of the seven pieces are fumed.

27. Bowl. Height 42 mm; external diameter at rim 22 mm;
bores diameter 2.05 mm (5/64")
Plain bowl of fairly upright form, with a slightly forward-sloping rim and a short spur. Internally and externally fumed.
Find no 3.
Illus 10. Allt na Moine Buidhe: artefacts, nos 26 and 27.
28. Bowl fragment. External diameter at rim c 22 mm.  
Fragment representing part of the wall and rim of a bowl of upright form. This fragment is plain. Internally and externally fumed. (Not illustrated.)  
Find no 5.

29. Heel and stem fragment. Surviving height 24 mm;  
length 38 mm; bore diameter 2.15 mm (5/64").  
Plain heel and stem fragment with only part of the base of the bowl surviving, including a short spur.  
(Not illustrated.)  
Find no 4.

**Textile.** A small, irregular fragment of textile (no 30) possibly represents part of a garment.  
Although it has deteriorated somewhat, parallel bands of coloration (probably red or reddish brown) survive on this fragment. The characteristic dress of Highlanders during the 17th and 18th centuries, surviving into the early 19th century in some areas, was the belted plaid, which could be dyed with a range of colours.

30. Textile fragment. Length 37 mm; width 23 mm; max thickness 7 mm.  
Fragment of irregular outline, torn along its edges, with some soil adhering. One edge may be folded, forming a double thickness, although one side has deteriorated. Parallel bands with a reddish coloration have been woven into the textile. The original pigmentation may have been red. No stitching survives. The weave appears to be a simple 2:1 twill.  
Find no 47.

The examination of two samples of ‘industrial waste’ from Allt na Moine Buidhe  
E Photos-Jones

**Aims.** Two bags of unstratified material ALTM1 and ALTM2 each consisting of one lump of unidentified material were presented to us for examination and analysis. The aim was to characterise both on chemical and mineralogical grounds in order to establish whether either of them was metallurgical slag or had an association with metalworking practices. The detailed analysis is not reported upon here; a full copy is lodged in Perth Museum with the finds and in the National Monuments Record for Scotland, with the site archive.

**Discussion.** Since sample ALTM2 was shown to be a natural rock, an amphibole, the present discussion will concentrate on the nature and origin of the formation of sample ALTM1 (to include subsamples).

The chemical and mineralogical analyses of ALTM1a and ALTM1c show complete lack of a metallic or metal silicate component; as a result it can not be claimed that this sample was formed within a metallurgical furnace or that it was part of a metallurgical process despite its texture (vitrified), porosity, colour (grey-black) and density.  
The presence of iron- or titanium/iron-rich phases can be misleading. It is not presently clear whether these phases are occurring in the natural rock or are formed artificially as the result of firing at high temperatures or indeed they were present in the original rock, were melted and subsequently recrystallised as a result of firing. Further work is required along this direction. However, it should perhaps be noted here that similar phases have been observed in both vitrified and unvitrified stone obtained from vitrified forts, and in particular An Dun, Gairloch (analysis prepared by Photos-Jones). Despite the above sample ALTM1 shows clear evidence of having been exposed to high temperatures and has to be associated with the only industrial features present at Allt na Moine Buidhe, namely the lime- or corn-drying kiln.

ALTM1a and ALTM1c consist of a glassy matrix (displaying fine crystallinity only at places) as well as partly reacted/cracked quartz grains. Indeed, the XRD pattern reveals only quartz but the slight hump in the middle of the spectrum suggests the presence of a glassy phase. One can only speculate on the original nature of the material. There are three options:  
a) it is a vitrified fire brick originally part of the wall of the corn-drying/limestone-burning kiln;  
b) it is the vitrified waste product of a lime-making process;  
c) it is the vitrified stone originally part of the wall of the corn-drying/limestone-burning kiln.  
Each of these options is examined separately. Refractory bricks or fire bricks are made up of fireclay which must contain a substantial amount of alumina (presumably no less than 30 per cent). This level of alumina is not present within the two sample examined since they consist of quartz grains and a silica rich (65 per cent SiO$_2$) glassy matrix with only c 10 per cent Al$_2$O$_3$ in the glass. Given the ‘early’ date of the settlement and the extent archaeological evidence it is unlikely that fire bricks were used on site. Fire bricks became an integral part of kiln construction only in the mid-to late 19th century (Douglas and Oglethorpe 1993).

In reference to the second option, the waste product of a limestone burning operation would have to be calcium-rich. Yet both samples ALTM1a and ALTM1c contain only a small amount of calcium, not exceeding 3 per cent CaO. Therefore this option also seems unlikely.

It is therefore suggested that the sample represents the vitrified stone originally part of the wall of the corn-drying/limestone-burning kiln. Deducing the type of rock from its vitrified counter-
part is not a straightforward task and requires an understanding of local stone and associated building materials. Reference is made to the stone used in the construction of House I in section A as being granite or blue whin (above). Indeed granite would have been the original rock but further investigation is necessary.

The composition of the rock is only the first stage in the characterisation of this material. The next question to address is the temperature and conditions within the kiln which would have caused the melting of the rock. The design of limekilns and corn-drying kilns has developed over a number of centuries with many variations both in Scotland and elsewhere in Britain (Fenton 1987; Atkinson 1997). From the simple clamp kiln, constructed on a ring of stone and turf with a single entrance, and fired in one go over a prolonged period of time, to the large-scale draw kilns fed continuously, conditions varied. Yet in both cases conditions are regulated by the decomposition temperature of limestone c 850°C resulting in the production of lime (CaO) and carbon dioxide (CO₂). Given the integral mixing of limestone and fuel (more often than not coal with a higher than charcoal calorific value) and the silica and/or other impurities within the limestone it is almost certain that the kiln operated at temperatures in excess of 1000°C. This much can be deduced from the reaction of the quartz grains by the glassy matrix in the samples examined. Pure quartz melts at c 1700°C but, as is known from glass making, even small amounts of fluxing agents can reduce the melting point substantially. Therefore, we would tend to argue that temperatures in excess of 1000°C would be less likely to exist within a corn-drying kiln than in a limekiln.

At Hilderston in the Bathgate Hills, five limekilns were in operation in the 1700s and 1800s (Photos-Jones et al in press) and are still visible today albeit in an advanced state of decay. We visited them in order to look closely at the nature of their building materials. At Hilderston, local stone, in this case chert, dolerite, and sandstone was used in combination with mortar. Numerous fragments of partly vitrified stone can be seen in the immediate surroundings of the collapsed kilns, thus corroborating our suggestions about the nature of the Allt na Moine samples. The Hilderston vitrified rock fragments show quite clearly a gradient in vitrification and colour. In the case of dolerite, the rock goes from grey (high temperature and vitrified) to red (low temperature and simply heated). It is presumed that at Hilderston coal was the fuel used to fire the kilns since coal seams were mined in the immediate vicinity at the same time.

To conclude, ‘early industrial’ building materials used in the construction of high-temperature-sustaining industrial installations, need to be examined in the context of the industries they make an integral part of and the locally available raw materials (stone, clay or turves) used in the construction of domestic establishments. Because at Allt na Moine and similar rural places in Scotland, the emphasis must have been in the ‘exploitation’ of locally available materials, considerable insight can be gained by the parallel examination of local building materials.

The animal bone
Catherine Smith
A few fragments of animal bone (25 in number) were retrieved from the longhouse. All of the fragments were calcined by intense heat and were small in size. The bones all appeared to be mammalian in origin. One came from a long bone, most likely of sheep, but unfortunately no further identification could be made. The bones probably represent the remains of a meal, which were thrown into the fire to dispose of them.

Discussion
MECS and JA
Dr Durno examined a pollen column from the locality at the time of the excavation, but it was not calibrated using radiocarbon dating and GJB feels that the conclusions drawn, in the absence of a secure chronology, cannot now be sustained.

The excavated cairn on the Allt na Moine plateau must confirm the presence of people in the area in the earlier Bronze Age. North of the settlement area and east of the B847 there is an extensive area of what on the surface appears to be settlement of the 18th and 19th centuries. Corn-drying kilns, field systems and longhouses are numerous. One corn-drying kiln appears to have been built inside a pre-existing circular cairn whose dimensions would have been not unlike those of the cairn on the Allt na Moine plateau. Iron Age and later occupation hinges mainly on the find of a fragment of shale armlet. The finds report above suggests that the armlet could be of Iron Age or medieval date. Other evidence of occupation within this period is extremely tenuous but the points are worth making:

The spindle-throw or loom weight could as well be from an Iron Age as from a 19th-century occupation. The four circular stone discs can be paralleled among Professor Watson’s meagre collection of finds from ring-fort or dun of Brench on Loch Tummel. They have also turned up in the excavation of another similar site at Litigian above Coshievie (Taylor 1969).

The final settlement of Allt na Moine probably dates from before the introduction of sheep and prior to the forfeiture of the Struan estate after
1745. The walled-in plateau points to a cattle-rearing economy as there would be no call to enclose a sheep walk. The plateau area has obviously been heavily fertilised, probably by dunging, and closely cropped. By contrast the area on the west side of the road, if kept for cereals, was small. The kiln on the eastern plateau does not appear to be an orthodox type of corn-drying kiln but if for burning lime it has two basic disadvantages. Not enough limestone could be burnt in the chamber of these dimensions to make the production of lime for fertilising economical. Secondly it would be difficult to extract the end product. However, it is still possible that the Allt na Moine kiln is an early essay in limestone burning using as a basic model the earlier corn-drier.

Excavation within the structures at Allt na Moine has confirmed occupation at the site as occurring between the early- to mid-eighteenth century and the early nineteenth century. Evidence, in the form of the ceramic assemblage, in all three structures excavated supports this interpretation. The results from structures (Houses) I, III and IV allow tentative interpretations to be develop. House I, the largest in the group, with its paved entrance, central hearth and two dry-stone cells clearly functioned as a byre dwelling, whilst structures (Houses) III and IV, given their limit dimensions, are more readily distinguishable as out-buildings within the farmstead. The lack of a formal floor deposit in structure IV and its location on the edge of the steadings may imply its use as a byre, whilst the extreme narrowness of structure III (c 2 m) and its sloping floor could be interpreted as a small store or ancillary building.

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**Allt Lochan nan Losgunn (Allean Forest)**

**Gordon J Barclay**

The site (which lies at NGR NN 854602) appears as a group of unroofed structures on the first edition 1:2500 Ordnance Survey map (Illus 11). The map seems to show four rectangular buildings and a further complex structure made up of a rectangle and a circle; this complex seems to be what is labelled 'Old Limekiln' by the surveyors. The buildings are associated with three small fields or yards. A wall runs from the kiln to the Allt Lochan nan Losgunn; another wall runs westwards from the westernmost yard, to meet a major NW-SE trending boundary, apparently dividing pasture from rough pasture/woodland. The OS surveyors seem not to have noted the (?corn-drying) kiln to the east of the settlement. The site had been badly damaged by the construction of a forestry road before excavation, and was extensively reconstructed by the Forestry Commission after the excavation, and remains open to the public.

**Survey**

[Not all of the features noted by the OS surveyors survived for MECS to note - GJB] Before excavation identifiable structures consisted of three houses, the gable ends of another of which the central portion had been destroyed in making the forest road, an open-ended byre and a kiln. In addition there was a walled garden, an enclosed area of flat ground and some indeterminate ruins.

*House I.* This house lies along the contour, advant-
found in the west wall. Both doorways had been provided with handsome threshold stones, that in the east wall measuring 0.82 x 0.37 m.

House III. This house lies on the east side of the forestry road with its long axis against the contour. It was not excavated. [This structure not located in 1998 – GJB.]

House IV (remains of). Only the gable ends of this house remain to east and west of the forestry road. Originally built along the contour it measures 17.2 m x approximately 4.2 m. Externally the existing gable ends are well built with large squared corner blocks and a slight inward batter. At the east end the gable stands on the foundations of an earlier house lying N/S across the contour. It is possible to identify the doorway of this early house.

If the two gable ends belong to one house [the OS first edition map shows that they do] then it must have been the most imposing of the four houses in the clachan. By comparison Houses I and II are a mere 10.5 m in length.

Open-ended byre. The northernmost structure lies along the contour and consists of an elongated rectangular foundation without a west wall. This belongs to a group of open-ended buildings which were first recognised by the writer in the survey of a settlement site on the golf course at Kinloch Rannoch. The suggestion was then made that these structures were byres where animals could be quickly and easily penned in by means of a wicker screen erected across the open end. Subsequently, similar structures have been noted in a number of deserted settlements in central Perthshire. [This structure is shown as having a west wall on the first edition map – GJB.]

This building has not yet been examined. One of the indeterminate ruined structures lying to the south of House I may also be open-ended. It was de-turfed but there was no time to make further examination except to establish that the east wall had not been built.

Kiln 2. [This kiln is numbered 2 to distinguish it from the larger kiln which seems to have been destroyed – GJB.] This was a narrow-bottomed
inverted cone with a short flue facing north-east. There were signs that the original structure had undergone reconstruction. An open section of the flue had been created by the addition of lateral building and the flue opening itself had been narrowed. Both alterations would have resulted in increasing the draught. It also looked as though several stone courses had been removed from the upper part of the cone in the north-east quadrant thus facilitating access to the interior. At the bottom of the cone there was a quantity of burnt and unburnt limestone but in all probability the kiln had originally been built for corn drying and the structural alterations were aimed at making it suitable for burning limestone. In the account of his excavations at Lix, Doctor Fairhurst (1969, 193) suggests that limekilns developed out of corn drying kilns. Evidence for this was found by the writer in a kiln excavated on Moulin Moor near Pitlochry.

‘Garden’. The making of the garden south of House I looks as though it belonged to the second period of occupation of the clachan for in its making a house against the contour at right angles to the east end of House I had been destroyed. It also seems reasonable to suggest that by the time the garden was envisaged the open-ended structure south of House I was in ruins and that all but its big foundation stones had been taken to build the walls of the garden.

To the west of the clachan an area of flat ground is bounded by a dry-stone dyke which hinges on the north-east corner of House II and sweeps westward in a wide arc to meet the south end of the west wall of the garden.

Considerable trouble has been taken to stabilise the south-western corner of this boundary wall at a point where the contour suddenly drops steeply to the loch. This must have been one of the rare patches of flat ground on the hillside and with a southern exposure would lend itself to the cultivation of small plots of cereal crops. It is significant that care has been taken to block any access on the northern margin where cattle emerging from the open-ended byre might so easily have damaged growing crops.

The excavation

House I

The floor of this house was completely de-turfed and vegetational debris cleared from the walls. An inwash of sandy clay at several points in the interior may have come from an attempt to fill up the interstices of the dry-stone inner wall face. There was also a fair amount of soil among the wall stones but it was impossible to decide whether this was adventitious or due to a deliberate inclusion of turves.

The north wall had been built against an earth bank which had been dug back to accommodate the lower courses. For a height of 0.4 m from the house floor this wall was built of comparatively small stones and had a pronounced outward batter - no doubt following the slope of the bank which could not be cut at a right angle for fear of collapse. Above this height and up to ground level larger stones were laid with a vertical rise.

In the south wall there were two openings for the springing of crucks. The best preserved is 5.1 m from the SW corner. It is 0.29 m wide at the base which is 0.69 m above the remains of a paved floor. The second cruck opening is 2.25 m from the SW corner. It is 0.35 m wide at the base which is 0.6 m above floor level. This leaves a distance of 2.85 m between the openings. Nothing comparable is visible in the north wall but possibly the roof timbers sprang directly from the wall head which here coincides more or less with the ground level outside. The height of the north wall to ground level is 1.24 m. It is significant that the equivalent height on the south wall corresponds with the top of the cruck opening.

There is no evidence of windows but these could have existed in the now ruined upper parts of both walls. Among the relics from the house were several fragments of window glass.

The east gable is low, the angle of rise being less than 45°.

The unusual position of the doorway has already been commented upon. The reason became apparent after a close scrutiny of the east gable. This showed discontinuity in the building 2.32 m from the NE corner extending southwards for 0.8 m. The height of the infill is 0.54 m. This had at one time been a low entry to the ruined rectangular annexe. It was still possible to see on the farther side of the east gable of the house the lintel stone whose length of 0.6 m would have spanned the top part of the opening. Clearly then there had been two periods of use for the building. In the first period there had been provision for both animals and humans. By entering at the corner of the house the animals, possibly pigs or goats, would have turned right into the small pen while the humans would have turned left into the house. During the second period animals were excluded and the pen became ruined possibly because by then the garden to the south of the house had been created.

The doorway is provided with a threshold stone measuring 0.7 x 0.55 x 0.08 m thick. On the east of the doorway in the corner between the south and east walls is a socket 0.1 x 0.1 m in diameter and the same in depth. It may have held a wooden post to which the door was secured when shut. A flat stone lying adjacent to the socket had a groove such as would have been made by the foot of a door continually scraping across it.
From the vicinity of the door came a broken hone. There had at one time been a central fire. The hearth-stone was still in situ and also one side of the kerb formed by a thin stone 0.55 x 0.08 m and set on edge.

Adjacent to the hearth and extending up to the south wall was a paved area which began 3.9 m from the SE corner and extended eastward for 2.5 m. It varied in width but at its widest was 1.2 m across. It was covered by a layer of soil 0.05 m thick heavily impregnated with burnt material and organic matter.

Relics from this area included pieces of corroded iron, fragments of window and bottle glass and cream glazed china. The paving stopped 2.25 m from the east gable and from this point to the edge of the drain near the door there was an area 0.75 x 0.8 m of cobbling consisting of close set rounded water-worn stones. On the cobbling was a dense concentration of heather roots which must represent a pile dumped on the left of the doorway. Heather was conspicuously absent from the remainder of the interior of the house.

There is a curious drainage system in House I whose purpose is not clear. Close to the NE corner a broad open shallow gutter cut in the hard gravelly sub-soil emerges from under the east gable and runs due west for just over a metre to meet a north/south channel of similar dimensions. The latter seems to come from under the north wall but it was impossible to examine the relationship in more detail because of a collapse of the dry-stone walling at this point. The north/south gutter is 0.3 m wide and is open for 2.4 m from the point where it leaves the north wall. It ends in a built section 0.7 m in length before turning slightly west to pass under the south wall and emerge at ground level through a triangular opening 0.27 m wide. The built section consists partly of thin stone carefully laid on edge across the width of the gutter.

The alignment of the north/south gutter does not coincide with the outlet in the south wall and had to swing westward in order to make contact with it. Was this an error of judgement or was there a time factor involved? Was the built outlet part of the original structure or was the drainage system cut later for the purposes of the second occupancy whatever it was? If the gutters were cut to drain off water seeping through the earth bank at the back of the north wall, there is the possibility that the house was intolerably damp, especially in winter and at an early stage was abandoned for domestic purposes.

It is worth pointing out that a similar triangular drain outlet is visible at the east end of the north wall of the destroyed house which originally lay across the line of the present forest road.

To the west of the north/south gutter and connecting with it is another sloping at an angle of 45° towards the north wall. It measures 3.24 m in length of which the west-most 1.14 m is carefully stone lined. It is likely that the whole length had, at one time, been stone filled as loose stones were removed from the eastern section before their significance was appreciated. At either end of the built section was a stone-edged post-hole; that to the east measures 0.10 x 0.11 m in diameter x 0.135 m deep; that to the west measures 0.14 x 0.12 m in diameter x 0.2 m deep. The distance between the inner edges of the post-holes is 0.9 m. From the area of the post-holes and the stone-filled section of the drain there were several pieces of corroded iron. To the west of the western post-hole there were signs of intense heat. Below the surface patches of loamy clay washed out from the wall there was a band of bright-red burnt soil, large pieces of carbonised wood and a layer of black sticky heavily carbonised material. This stratification covered an area of 0.75 x 0.8 m and extended to a depth of 0.4 m adjacent to the north wall.

In the north-west corner of the house there was a concentration of black fibrous vegetable material which had the appearance of a decayed peat stack. It lay directly on the hard surface of the underlying loam which had come to be recognised as the basic floor level in the house. The divisive line was very distinct and was readily recognised by the insertion of a trowel blade. To the south of the stack and against the mid-way point of the west gable there were two or three stones stained black along with a good deal of carbonised material indicative of fire. The absence of heat or smoke stains on the stones of the inner wall of the gable may mean the fire was intermittent rather than regular.

In the vicinity of the SW corner there was a setting of five small post-holes whose arrangement can be seen on plan. The holes averaged 0.05 m in diameter and were from 0.06 to 0.15 m deep. No I sloped down towards the NW indicating that the post was taking an outward strain. The socket was stone lined with a stone at the bottom.

All the post-holes were identified by an infill of loose dark earth against the harder reddish loam.

The following interpretation of the evidence from House I is tentative. Such evidence as we have may be capable of more than one explanation. However, two periods of use may be safely assumed. In period 1 the building was in use as a house with an animal pen attached to the east gable. Humans and animals used a common entry at the east end of the south wall. Paving along the south wall of the house, cobbling west of the doorway and the central hearth belong to this period and possibly also the scanty domestic relics such as the glazed china, the bottle glass and the iron heuck. But the house, built as it was against an earth bank, must always have been damp and in winter, perhaps intolerably so.

From a soil section across the interior of the house it looks as though, after being initially occu-
pied, it was abandoned for a short period before being used again.

Above the subsoil there is a thin layer of black earth heavily impregnated with organic material which must represent the earliest occupation level. Above this is a band of sterile loamy clay representing an in-wash of the material used to seal the interstices of the inner wall face. This layer contained no occupation debris. The second period was associated with an industrial use which left a thick bank of heavy black carbonised material over certain parts of the house superimposed on the sterile loamy clay. At this stage the central hearth was partly dismantled and probably also the northern part of the paving. The doorway to the animal pen was blocked and the pen itself became ruinous. A drainage system was cut in the eastern end of the house though a proviso may be necessary.

The east/west and north/south gutters may have been cut in the first period in an effort to deal with water seeping through the north wall but certainty about this must wait until the pen outside the east gable has been examined. But the western part of the drainage system and the stone-lined post-holes are part of the secondary use of the building. It was in order to accommodate them that the hearth was partly dismantled and paving probably removed. Whatever was going on involved spillage and heat and the suggestion is made that this was wool dyeing. The dyes would have been prepared in an iron receptacle in contact with heat. The hanks of wool would hang on a frame supported by posts in the stone-lined sockets and from this position they would have dripped conveniently into the drain below.

After dripping they could have been dried and teased on a wooden frame set up in front of a fire occasionally lit against the west gable and fuelled from the peat stack in the NW corner. Such a very feminine occupation is, perhaps, underlined by the discovery of two blue beads, one from a high level in the vicinity of the west gable.

Elsewhere in the clachan there is evidence of a two-period occupation, the earlier of which probably ante-dates the introduction of limestone burning for fertiliser in the second half of the 18th century. Sheep rearing on an extensive scale with the introduction of Border strains, Border shepherds and rectangular sheep tanks was a feature of the policies inaugurated by the Crown Commissioners for the Forfeited Estates after the failure of the 1745 rising. But previous to this the Highland clachan communities had, along with black cattle, a few small sheep kept no doubt primarily for their milk and wool.

House II

This building was archaeologically disappointing. Since one of the two doorways opens directly on to the cultivated area west of the clachan the inference is that the building had some use in the processing of the cereal crops. If both doorways are contemporary then they could have produced a through draught needed for winnowing grain and this suggestion is strengthened by the fact that the doors are in line with the prevailing wind. But there is no proof that the two doors are contemporary. The two halves of the house probably represent two successive building periods and the doors may be associated accordingly.

Evidence for a two-period use is to be found in the realignment of the walls and in the contrasted building techniques of the northern and southern halves. The very large stones forming the lowest course of the northern walls is completely at variance with the small boulder building of the southern half of the house. The former has a primitive appearance in keeping with the siting of the building across the contour.

The original purpose of House II does not seem to have been domestic. There is no evidence of a hearth or indeed of fire and no occupational level. Though there is a fairly even distributional scatter of domestic debris, which includes the usual fragmented bottle glass and glazed china as well as about a quarter of the body of an iron cauldron, the way in which this material was found gives the impression the building has been used as a casual rubbish tip.

The floor consists of a poorly cobbled surface of small water-worn stones with roughly laid larger paving at the northern end. Along the west wall 1.35 m from the NW corner southward for 2.8 m and with a width of 0.65 m the cobbles is separated from the wall by a thick band of laid clay. If the building had been used for animals the clay might indicate the position of a water trough. It might have been laid to prevent the accumulation of urine against the walls or simply to provide a stable base for some built superstructure.

At 4.2 m from the NW corner extending to 4.73 m and with a width of 0.3 m out from the west wall there were thin wooden slabs in the final stages of decay.

In order to test the suggestion that the building had undergone reconstruction two sections were cut through the floor. One was cut along the inner face of the south gable for a width of 1.22 m. This showed that at the east end the gable and the SE corner had been erected on a foundation 0.26 m deep of hard packed small stones. Below this there was 0.17 m of dark earth on top of the undisturbed gravel. But in the western half of the section the small stones and dark earth gave way to large boulders from 0.25 m to 0.4 m in length which looked like stones re-used from an older wall. In both cases the southern half of the house had been built on made-up material compensating for a drop in ground level. It is impossible to say
whether this was an elongation in the reconstruction of the building. A section cut between the two doors exposed a rather less depth of made-up material below the cobbled floor.

A curious built feature appeared in the SW corner. Three flat stones approximately 0.42 x 0.35 m were superimposed on one another, the lowest one held in place by small stones placed along the top and bottom edge and by larger slabs placed on each side. When raised it was found to cover the mouth of a pit measuring 0.67 x 0.75 m in diameter x 0.45 m deep dug in the underlying hard gravel. The pit was unlined, had no outlet and the infill was not markedly different from the surrounding made-up soil.

Kiln 2

The circular kiln had been made by digging into a slope and lining the resultant cone with boulders. At two points rock outcrops had been skillfully incorporated. At ground level a thick collar of dry-stone building surrounds the aperture sloping with the contour towards the NE where superimposed lintels cover a short narrow flue emerging just above the fuel level at the bottom of the cone. Burnt and unburnt limestone was found in the kiln but it is very unlikely that this had been the original purpose of the structure. The amount of limestone which could be burnt at any one time must have been minimal and there must have been great difficulty in extracting the burnt residue.

These facts allied with the evidence for alterations to the structure which have already been commented on suggest that originally the kiln was for drying corn on the sheaf. Most of the deserted settlements in central Perthshire are provided with corn-drying kilns but as a result of agricultural advances initiated at the beginning of the 19th century these structures became obsolete.

As part of their survey of the settlement pattern in Strathtay, the Breadalbane Archaeological Society have been able to show that with higher yield from better seed, earlier sowing and summer harvesting, leading to the appearance of a properly organised stackyard, the corn-drying kiln became a ruinous appendage. But in the more remote parts of the Highlands introduction of limestone burning as part of the improvement schemes of the Crown Commissioners led to the older kilns being adapted.

Limestone could have been brought from the vicinity of Loch B'hadhach not far distant as the crown flies across the watershed to the north of the clachan and there may well be small outcrops nearer at hand. Distributed at the current rate of only 2oz to a square yard the inhabitants might well have considered the inconvenience of production worthwhile for their small patches of cultivated cereals.

Findings from Allt Lochan nan Losgunn

Adrian Cox

The finds described below are held in Perth Museum and Art Gallery (accession number 1998.215.1-4; 1998.398; 1994.425). This group appears to represent only part of the total assemblage recovered from the excavation. Context information is rather scant, but where present it has been noted below.

The largest component of the surviving assemblage is pottery, all of which is recorded as having been recovered from the piggery. This term may refer to the animal pen attached to House I in the initial phase of its use. A total of 55 sherds is present, although these may represent the remains of as few as ten vessels. One of these, represented by two adjoining rim fragments and possibly a handle fragment and body sherd in the same fabric, was a steep-sided bowl with a flaring rim (external rim diameter c 180–200 mm). It was made from a hard-fired, red to brown fabric and had a dark brown glaze both internally and externally. A further five sherds, from probably two other vessels, have a similar fabric and glaze type.

The finest fabric recovered is represented by nine sherds of white china, from a fine tableware vessel (probably a shallow bowl or saucer), decorated internally by a complex pattern in blue. In addition, three earthenware sherds are decorated by hand-painted designs. A majority of the remaining sherds are of plain, white-glazed earthenware vessels. The assemblage appears to span a date range from the around the mid-18th century to the early 19th century.

A fragment of a wooden spoon (length 118 mm; width 57 mm; thickness 3 mm) was also found. The bowl and part of the handle survive, although the wood has split, particularly on the underside of the bowl. Spoons used by humbler folk were made from wood and sometimes from horn, although metal spoons were in common use in wealthier households.

The finds assemblage includes twenty small fragments of burned or fired clay, with a total weight of 422g. The fragments are of orange to dark red or brown coloration and are moderately coarse, with numerous voids indicating the former presence of quantities of organic temper. At least two have a glassy, vitrified coating on their slightly curved surfaces. This material would appear to represent pieces of kiln lining, although no context has been recorded. A sample labelled 'limestone from kiln' also survives. This contains angular fragments of stone within a buff-coloured, lime-based matrix.

A flint flake (length 26 mm; width 19 mm; max thickness 5 mm) of pale brown coloration was recovered from House I. This residual find would
appear to relate to prehistoric activity in the vicinity.

The animal bone
C Smith

A small assemblage of animal bone from the excavation at Allt Lochan nan Losgunn was rediscovered in 1998 in the collection of the late Dr Archie Young. Since the bones seemed to be in their original box and wrappings (newspapers dated 1974) it has been assumed here that this is the entire assemblage recovered from the site.

The box is labelled ‘Clachan. Tummel Forest. Area IV’. Only one group of bones is bagged and contains a label, while the remainder of the bones are wrapped in separate, unlabelled, newspaper parcels. These parcels of bones are described in their original groupings as they were found.

Bones from kiln. [Kiln used for burning limestone for fertiliser] (original label). This bag contained 16 fragments of bone from a very young lamb, mainly from the skull and lower jaws. Two fragments from the right half of the pelvis, the ischium and pubis, as well as the proximal half of the left tibia, were also present. On the basis of the dental evidence, the animal was probably between two and six months old at the time of death, since there was some slight wear on the lower deciduous third molars and the first permanent molars had not yet erupted through the bone of the jaw.

Since the bones of this lamb were not butchered, it is quite likely that the animal was not used as food by humans. It is also notable that although the bones were found in a kiln, there was no trace of burning on them. Possibly the carcass was dumped in the kiln after it was no longer in use, or the animal died while sheltering inside.

Parcel 1. This bundle contained two bones from a small adult horse or pony, the articular part of a scapula and the distal end of a metapodial. Both of these bones appeared to have been burnt, but there was no label to indicate whether they had come from the kiln.

Parcel 2. Seven bones from adult sheep, including a pair of slim tibiae and an intact metacarpal, were noted. Possibly only one individual was represented.

Parcel 3. Fourteen sheep vertebrae, presumably all from the same individual, were present. These were: 3 cervical, 6 thoracic, 2 lumbar and 1 sacral and 2 fragments.

Parcel 4. This contained 33 fragments of long bone, 15 rib and two sternal fragments, all of sheep. The long bones were mainly whole, although the epiphyses were unattached in some cases. One adult and one immature sheep appear to be present.

Discussion. The remains of at least one adult, one immature and one very young sheep are present. Since the long bones are fairly intact and there are no evident signs of butchery, it is possible that these animals were natural casualties and were not consumed by the occupants of the site.

Calculation of the withers heights (ie height measured at the shoulders) of the live animals from the intact sheep long bones (using Teichert’s (1975) factors) indicates a range of 53.6 cm, based on the tibiae, to 59.5 cm in height, based on the humerus. A modern male Soay sheep skeleton used for comparison had an estimated withers height of 59 cm. The range of withers heights for medieval sheep from excavations in Perth is estimated to be from approximately 46 cm to 66 cm, so the specimens from Allt Lochan nan Losgunn were of similar small stature to the medieval type. Indeed, many animals sold in the markets of Perth were raised in the burgh’s hinterland, which included Highland Perthshire.

Interpretation
John Atkinson

The excavations of Allt Lochan nan Losgunn revealed a site which is characterised by two phases of occupation within Houses 1 and 2 (the only buildings to be excavated within the farmstead grouping). An appreciation of the function of the buildings is limited and further complicated by the damage to the majority of the group sustained during the construction of the forestry track. However, certain aspects of the constructional history of the excavated buildings do help to support the two phases proposed by the excavator and aid in the discussion of this site.

The evidence from House 1 appears to imply that this structure had extended to the east during its primary phase of use and had latterly been curtailed. Dr Stewart felt that the eastern extension may have been a small pen, possibly for pigs or goats, the entrance to which had been located in the eastern gable, however the eastern extension could equally have been the byre end of a longhouse. Of note here is the location of the main entrance to the dwelling which faces to the south, close to the eastern gable and away from the central yard. This, together with the evidence for two phases of occupation would seem to support that this structure pre-dated the existence of the yard, and may consequently be the original longhouse within the steading group. Evidence from elsewhere in Perthshire suggests that principal dwellings were often of two compartments, stone built and had an entrance central to a side wall (RCAHMS 1990, 11). A further aspect of note within House 1 was the existence of a substantial amount of sandy clay in-wash within the floor and wall bases, which may well have been a deliberate
policy during its use. There would certainly appear to be a common practice in late 18th-century dwellings filling gaps in dry-stone walls to prevent wind penetration: ‘the dwelling house being stoped on the inside with loam to prevent the wind from blowing through the walls’ (Marshall 1792, 19ff).

House 2, like House 1, also indicated a dual period of use, characterised by a partial re-build of the structure on a different alignment and a change in building techniques. The opposing doorways noted by the excavator, although redolent of a threshing barn (cf RCAHMS 1990, 11), could not be confirmed with any certainty, due to the lack of continuity in build. There was also a lack of evidence to support the structure as having a domestic function, as no hearth was noted. There may be currency in the idea that the patch of clay flooring and adjoining timber slats adjacent to the eastern wall could be the remains of the base of a box bed, however they could equally have another interpretation. This building probably has more to do with agricultural storage or processing than domestic activities.

In general terms the form and layout of the site is characteristic of an early 19th-century Improvement-period farmstead with the main buildings located around a central yard. Comparable sites are common in Highland Perthshire as recent survey work has revealed (RCAHMS 1990; RCAHMS 1994; Cowley 1997). As Cowley has noted in discussing the farmsteads of Glen Fender and Salachill ‘the steadings of the farms ... typically comprise two or three buildings placed parallel to each other or arranged in L or U-shapes, and a number of associated enclosures (1997, 171). The increased number of structures at Allt Lochan nan Losgunn may simply be a result of the site’s dual phasing, a feature which is supported by the surviving material culture which indicates use between the mid-18th and early 19th centuries.

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General discussion

John Atkinson

Allt na Moine Buidhe and Allt Lochan nan Losgunn form part of a tradition in agricultural living arrangements, which may include the majority of medieval or later rural settlement remains still visible today across the Highlands. The use of dry-stone construction techniques for byre dwellings, barns and outbuildings which required timber crucks to support a turf or thatch roof is characteristic of sites throughout this region and has close parallels in the Perthshire area in particular. Recent work has suggested (Fenton and Walker 1981; Dodgson 1993) that dry-stone building was a late development in Highland Scotland and may have been brought about as a result of landlord intervention during the early to mid-18th century. Indeed, evidence from 18th and 19th century agricultural surveys (eg Marshall 1792; Headrick 1813) would seem to support the building of sod (turf) huts prior to the introduction of stone in Highland Perthshire.

In specific constructional terms both sites revealed elements which have good parallels in other excavations (Fairhurst 1971; Stewart and Stewart 1988; Atkinson et al 1997) and surveys (Dunbar 1959; RCAHMS 1990; RCAHMS 1994; Cowley 1997) in Perthshire and elsewhere in the central Highlands (eg Lelong 1997). At Allt na Moine Buidhe the excavated byre-dwelling (House 1) was broadly similar to Lianach longhouse (Stewart and Stewart 1988, illus 4) and House EL/1/D at Lix (Fairhurst 1971, fig 7) in plan, though a number of specific points are worthy of further discussion. In House 1 the discovery of a 1.25 m wide strip of turf along the interior of the eastern wall led the excavator to suggest that this represents an inner wall of heather sods. Although recent work on building materials has noted the use of masonry-faced turf (Walker and McGregor 1986, 17–18) in the Highlands, a feature which has been supported by excavation (Lelong 1997, fig 5), the turf batters are normally on the exterior face of walls. Without parallels for turf lining on the interior of a wall face it is difficult to see how roof crucks could have been supported within the eastern wall of House 1. The answer to this may lie in the line of four central posts discovered during excavation and the lack of evidence for cruck slots in the walls of this structure. This is an unusual aspect, which has no direct parallels in other farmstead sites of this period, though it was recently noted during the excavation of a rectangular shieling within the Ben Lawers Nature Trail, Loch Tay (Atkinson et al 1997, fig 4). The association of post-holes within the interior of longhouses is not unusual, but they do tend to occur as disparate groups (eg within House 1, Allt Lochan nan Losgunn), or are located close to the long walls of structures, as in the case of the Lianach excavation (Stewart and Stewart 1988; Stewart 1990). In cases like these, interpretation has viewed them as earth-fast posts to support cruck pairs, a feature which is alluded to in early travellers accounts within the Scottish Highlands:

The skeleton of the hut was formed of small crooked timber; for the whole fabric was set
upon the surface of the ground, like a table, stool, or other moveable. (Edward Burt (1725-6) quoted in Lindsay 1964, 117.)

Arguably, the evidence from Allt na Moine Buidhe may imply the use of a different form of roofing support, however, it could simply be an attempt to give added stability to the unusual cruck arrangement. Further evidence will be required before any conclusions can be drawn.

In many ways the evidence from Allt Lochan nan Losgunn gives support for the traditional view of Improvement-period housing in Perthshire in its central hearth and cruck slots within the long walls. The fact that two pairs were noted within House 1 is characteristic of other sites in the area which have been surveyed in the past, most notably those surveyed by Dunbar in the Aberfeldy district (1959). The only unusual feature within House 1 was the series of channels cut within the floor level in the building, which the excavator took to represent part of the process of wool drying or alternatively to aid in drainage of the house which was cut into the slope above. Given that there is no direct evidence for wool drying, the drainage of the structure may be a more likely interpretation related to the secondary use of the building. In Perthshire a fairly common arrangement for buildings terraced into the slope existed where a bank or drainage gully was provided upslope of the structure (RCAHMS 1990, 11). If, as has already been argued, the development of the yard of the steading was a late event (related to the second phase of use), then the drainage pattern may have been altered and it became necessary to cut drainage channels into the floor of the building. This may imply the structure was no longer used as a dwelling during the second phase of its use.

The evidence recovered from the two excavations discussed here would appear to confirm that both sites were a product of the change in construction materials first noted in the early 18th century. Although three sherds of late medieval pottery were recovered from Allt na Moine Buidhe (see Hall above), the majority of the material culture from both sites was clearly mid-18th- to early 19th-century in origin. Likewise the layout and locational position of both sites is redolent of the Improvement period. In the case of Allt na Moine Buidhe the adoption of a compact plan across a central access track and location on a south-east-facing terrace around 300 m OD is mirrored by Allt Lochan nan Losgunn, which also reveals a compact plan around a central access and yard, on a south-facing slope at c 250 m OD. Both sites lie at the margins of cultivable ground in close proximity to the head dyke. This is a feature of pre-Improvement farmsteads in Perthshire which are almost invariably set on, or close to the old head-dykes at the margin between the infiel and the rough hill-grazing' (RCAHMS 1990, 11; cf Robertson 1799, 108). Allt na Moine Buidhe does differ in one crucial way, the large enclosing dyke which encircles the site does suggest an economy based around cattle rearing, whereas the group of small-scale enclosures at Allt Lochan nan Losgunn is likely to be related to the change in farming practices after the forfeiture of the Struan estate in 1745 and the introduction of a sheep-based economy.

The association of corn-drying kilns on both sites would certainly imply that both locales had once been the location of post-Improvement townships, a feature which is alluded to in their phasing. The transition to sheep-rearing economies effectively supplanted the older system of cattle and arable joint tenancies, although evidence was still visible at both sites of the earlier economic system. The question of whether the kilns at both sites had been converted to limekilns in the late 18th century remains inconclusive. The analysis of the Allt na Moine Buidhe samples has led Photos-Jones to conclude they may represent vitrified stone from the wall of the kiln (see above). Considering that corn-drying kilns elsewhere in Perthshire occur as 'several types, including simple bowl-kilns and those with stoking chambers' (RCAHMS 1990, 11), the evidence for kiln alteration to burn lime is circumstantial at best.

Conclusions

Gordon J Barclay

Medieval or later rural settlement (MOLRS) has been the subject of much scrutiny in recent years (see particularly Hingley 1993; Hingley and Foster 1994). Much of this interest is driven by the need to have adequate information on which to base decisions about the preservation and management of sites, field systems and even landscapes, where MOLRS is the commonest monument type in the Scottish countryside. Although MOLRS is, with some justification, perceived as an under-researched area of study, the situation can be overstated. For example, it has been observed that there have been very few excavations on post-medieval settlements in Highland Scotland (Mackay 1993). However, Mackay was studying the evidence for a limited geographical area (that of the Highland Clearances) rather than considering the evidence for the whole of the MOLRS resource across the entirety of upland Scotland. If the whole of Scotland is considered there have been around 40 excavations of MOLRS sites since 1945, a number that does not compare badly with other classes and periods (Barclay 1997).

The excavations reported upon here are in many ways typical of these excavation projects. The majority were undertaken by under-resourced
local groups, rather than professional archaeologists. Many have therefore remained unpublished. Both of the sites reported on here suggest that the 18th- and 19th-century upland MOLRS sites often produce little in the way of structural or artefactual evidence. However, the excavation of buildings of these types can often produce important information about vernacular traditions of architecture at this time and this is an under-researched subject (Walker and McGregor 1993). In addition, the combination of excavation, survey work and analysis of documentary sources may often enable an understanding of the lives of the occupants of these settlements. Of particular use will be large-scale work which examines domestic space, the inter-house spaces within townships and the relationship of the settlements to their fields and resource areas (Hingley in press). This work should include excavation and field survey in conjunction with contemporary maps and research into documentary sources. Mackay (1993) has identified another constituency who seek to preserve these sites, literally as monuments to past social conditions, and archaeologists also have to be aware of the aspirations of the community in the efforts to preserve a range of MOLRS monuments for the future (Hingley 1998).

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Dr Stewart’s acknowledgements - Alt na Moine Buide

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SUAT

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Gordon Barclay

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Abstract

The excavation of two pre-improvement settlements is described. The finds assemblages are described and discussed.

Keywords: medieval or later rural settlement, Perthshire