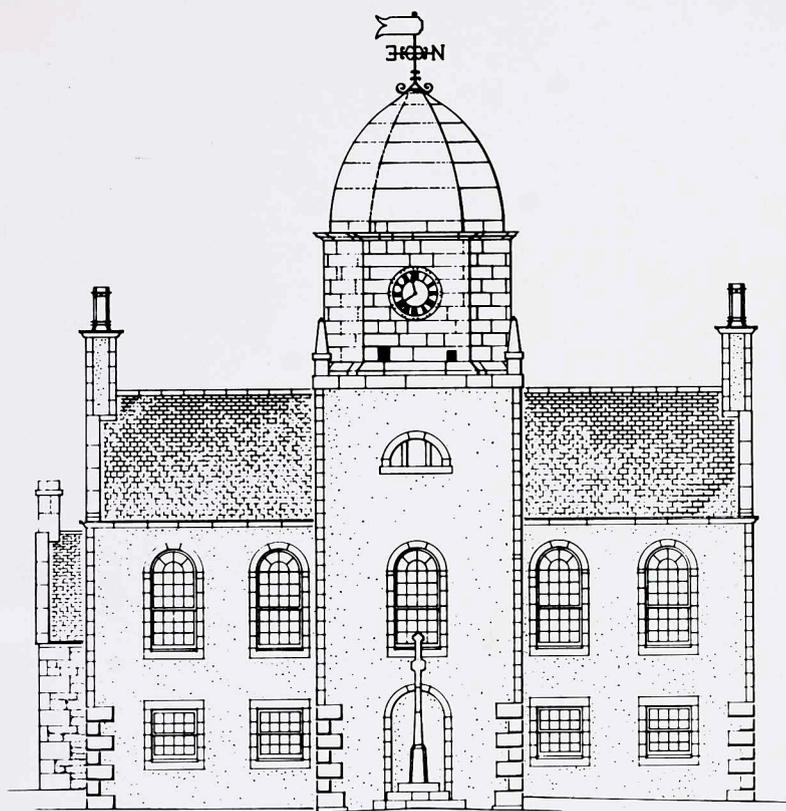


VERNACULAR BUILDING 27

Scottish Vernacular Buildings Working Group

2003



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Working Group**

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ISSN: 0267-3088

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Acknowledgements

This volume could not have been produced without the invaluable assistance of Elizabeth Beaton in gathering together material and providing guidance during the course of the work. Thanks go also to Dorothy Kidd and Veronica Fraser for their generous advice and help.

PREFACE

This volume of *VB* celebrates the Group's visit to Cromarty in April 2003 with an article by David Alston, who asks 'Who Built Cromarty?' Geoff Leet continues the investigation of that fine eighteenth- and nineteenth-century seaport in his discussion of some of the many intriguing skewputts in both Cromarty and Lybster that have an obvious nautical theme.

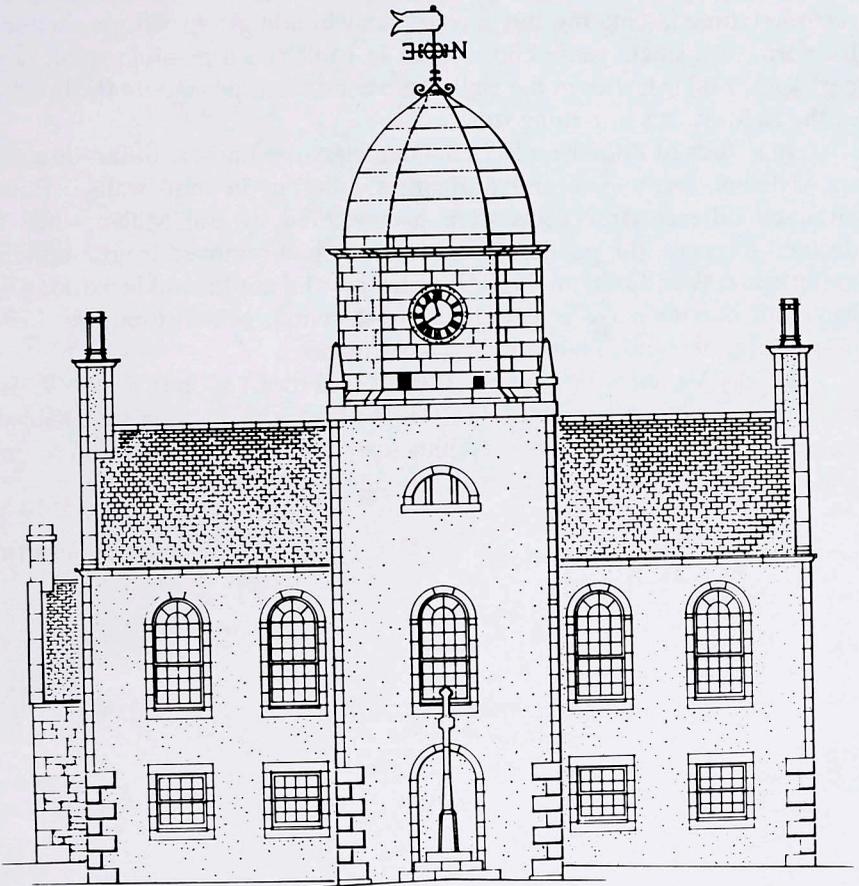
Elizabeth Beaton has looked into the plans and estimates of a Miller's House in Banffshire and compared them with what remains of the building on the ground. She has also, with great ingenuity, deduced from two late-nineteenth century photographs of farms and cottages at Dunmaglass in Inverness-shire much about the lifestyle and construction methods of the rural Highlands at that time.

Exploring Banffshire, Mull and Inverness-shire, Robin Callander has recorded three fascinating and unusual small buildings: a roadside shelter in the form of a single gable end, a barn in Mull and a possible stable used perhaps for relay horses in the eighteenth century, or perhaps in the building of the railway. It's intriguing stuff.

In a study of Priorslynn Barn in Dumfriesshire Barbara Stuart discusses the delights, techniques and difficulties inherent in mud walls. Equal, although different, problems were encountered by Bill Millan when he decided to re-use the pantiles he and friends had removed from a building in Bathgate, West Lothian. Mysteriously, they did not fit, and in working out why, and how to make a watertight construction, Millan found he had a useful hypothesis as to how the tiles were made.

Finally Veronica Fraser (née Steele), a stalwart supporter of *VB*, has provided a scholarly and helpful selection of book reviews on such subjects as mills and milling, Argyll architecture, doocots in Stirlingshire and Dumfries and Galloway, and a wide-ranging celebration of folklife.

Janice Robertson



Cromarty Courthouse, RCAHMS (Crown Copyright)

WHO BUILT CROMARTY?

David Alston

The small town of Cromarty, with 719 inhabitants at the 2001 census, now has less than a third of its population in the year 1831, when it peaked at 2215. By this time its economy was already tipping into a rapid decline after some 60 years of general prosperity and growth. Although some vestiges of an older Cromarty remain, its principle stock of buildings is from these six decades. This article will try to answer the question: which groups of people invested their wealth in these buildings?

Like many small Scottish towns, Cromarty's development was the result both of 'top down' improvements by a progressive landowner and of growth driven from within by the expansion of the local economy. In the case of Cromarty these fall neatly into two periods – the laird George Ross's developments between 1767 and 1786, and a later phase of building paid for by the emerging middle class of the town.

George Ross's Cromarty

The estate of Cromarty was acquired in 1767 by George Ross (1708/9–86) who, born in Easter Ross, had made his fortune as a London-based army agent. He was directly responsible for:

- The Cromarty Manufactory (c.1772) – a non-mechanised 'proto-factory', insured for £4500 in 1780, which spun and wove imported Baltic hemp to produce sacking for the London/West Indies trade, employing up to 250 people and 600 outworkers. The buildings were said, in their day, to be the largest of their kind in Britain. Three ranges of the original five remain, converted to housing.
- A brewery (1770s), now converted to a study centre for the Robert Gordon University.
- The Courthouse (1772), now a museum, with part funding of £350 from the Commissioners of the Annexed Estates.
- The harbour (1781–5) to a design by John Smeaton, with funding of £5000 from the Commissioners of the Annexed Estates.
- The Gaelic Chapel (1783) now ruined, with government funding for the stipend for a minister.
- Cromarty House (1772), replacing Cromarty Castle, together with Cromarty House stables and the high, brick-lined wall of the garden or orchard below the house.

'Lost' buildings include:

- A nail and spade works

- A ‘hog yard’, purpose built to rear pigs for the salt-pork trade
- A row of houses for the poor, on Bank Street (probably brick built)

Ross also implemented ambitious plans to landscape the whole of Cromarty Hill (at an estimated cost of £50,000) and began agricultural improvements on two farms – Cromarty Mains and Rose Farm.

Ross encouraged the town’s westward drift by buying up the properties closest to Cromarty House – in effect making this part of the estate policies – and feuing new ground to the west in exchange. However, the new buildings were modest. Examples include a row of single-storey, originally thatched buildings at the west end of Shore Street, which included a new parish school (on a site exchanged for the older school which, inconveniently for the laird, bordered his walled garden) and a house with a dated, stone carved panel of 1774 (for George Hossack, carpenter). Another at 36 High Street, with a date stone of 1768 (for Donald Watson, farmer), was a similar exchange.

Ross worked closely with a dynamic local merchant, William Forsyth, who built his own substantial house (Forsyth House, insured for £400 in 1783) in its own grounds in the town in the same year as Ross completed Cromarty House.

Cromarty: 1795 – 1830

From the mid-1790s Cromarty flourished as never before as a result of improved agriculture (with high wartime prices for grain), the development of the harbour as an ‘entrepôt’, the growing social status of the town and, from 1815, a revived herring fishery. In 1804 the lawyer Robert Mackid observed that:

‘... in the very populous and thriving Village of Cromarty ... there is an increasing rage for building ... [and] in a few years, Cromarty bids fair to rival the great Royal Burgh of Inverness.’

Most of Cromarty’s listed houses date from building or re-building in this period. The first two substantial new houses were in Church Street:

- Miller House (1795), built for the sea-captain father of the writer Hugh Miller; and
- Bellevue, originally McGlashan’s Lodge (1795), built for Adam McGlashan, a Cromarty-born merchant who made money in Newfoundland. It was subsequently renamed Clare Lodge when it was acquired in 1832 by Margaret Graham, the widow of Sir Michael Benignus Clare, physician general of the Jamaican Militia.

This was followed by other buildings in the already established part of the town and by new, regular streets – Denny Road (on ground exchanged

in the 1770s for property in the older part of the town) and the grid of Duke Street and George Street, above the harbour.

All the houses of this period are well proportioned and at least three distinct types can be seen:

- particularly tall houses with slate ‘caulking’ of the red sandstone (now exposed but built to take a lime harl): 1 Forsyth Place (date stone 1808, for a merchant named Macrae); 2-4 High Street (c.1803, for James Thomson, merchant); St Ann’s, Church Street (1806/7, for Lt Col Gordon, the son of a Cromarty merchant); and Stornoway House on Shore Street.
- houses with elegant door surrounds, ornamental skewputts and bands of dressed stone at the roof level and, in some cases, between floors: for example, 8 High Street (1817 for Alexander Simpson, merchant); 31 Bank Street (1810s, for Walter Ross, the estate factor); and all the houses on the east side of George Street, which originally looked out with a clear view over the Firth, including Maryness (c.1815 for George Macdonald, doctor, farmer and later provost) and Reay House (c.1815 for Alexander Sibbald, merchant, and soon afterwards the property of James Gordon, merchant in Copenhagen and subsequently principal cooper and fish merchant in Cromarty).
- More modest but well proportioned houses, without decoration, as found in most of Duke Street and Denny Road.

The owners of almost all of the larger houses can be identified in a ‘Loyal Address’ to the King, printed in a local newspaper in 1820. This lists by name the estate factor, two customs officers, an excise officer, a fishery officer, the sheriff clerk, three retired naval and army officers, the factory manager, eight merchants, a provision merchant, a vintner, a storekeeper, the schoolmaster, two ministers, a painter and a plantation manager – together comprising the rising middle class of the town. Many of them later appear as leading figures in the formation of the Free Church in Cromarty in 1843 – ‘self-made men’ who valued their independence in spiritual as well as temporal affairs.

Men of lesser status – masons, house carpenters, cabinet makers, wrights and carters – were builders and owners of the more modest houses. An interesting figure in a number of developments was Hugh Ross, variously described as ‘shoremaster’, ‘storekeeper’ or ‘bulkmaster’. He feud land and built a number of houses which he then offered for sale. These included the buildings on the corner of George Street/Bank Street – advertised as a ‘central and commodious house’ of ‘eleven fire rooms*’, with cellar and closets . . . built of the best materials, all of the timber being the natural wood of Beaully’.

* Presumably with a fireplace

Not all houses fit these patterns. Laurel House, High Street (1828 for Thomas Bain, farmer) is a striking building in its own grounds and Wellington House, Church Street (1829 for retired sea-captain, Alexander Clark) is similarly set back from the road. There were also Middleton's Buildings of 1796, a house and complex of buildings by the harbour for curing pork and fish, now the Royal Hotel.

Almost all the houses, despite the grandeur of some, are only one room deep, with the exception of:

- the Bank House, Bank Street (probably 1820s, for Robert Ross, pork-curer turned banker), which is also unusual in its unharled, ashlar front;
- 2 Church Street (dated 1810 on a skewputt, for Hugh Fraser, baker); and single or one-and-a-half storey buildings at 21 High Street and 4 & 6 Bank Street.

Also of this period were four Friendly Society buildings:

- the Urquhart Club (formerly the masonic lodge of 1823), Bank Street, with its arched central passageway and rear stair;
- the Cromarty Arms (formerly the lodge of the Free Gardeners, 1828);
- Speybank on the Braehead (1816 for the Cromarty Friendly Society and used as a school until 1872); and
- the Wrights & Coopers Lodge (late 1820s), sadly demolished in the 1970s, which stood on Rose Lane.

Through these lodges the communal funds of many working class people were invested in buildings.

SKEWPUTTS AT CROMARTY AND LYBSTER

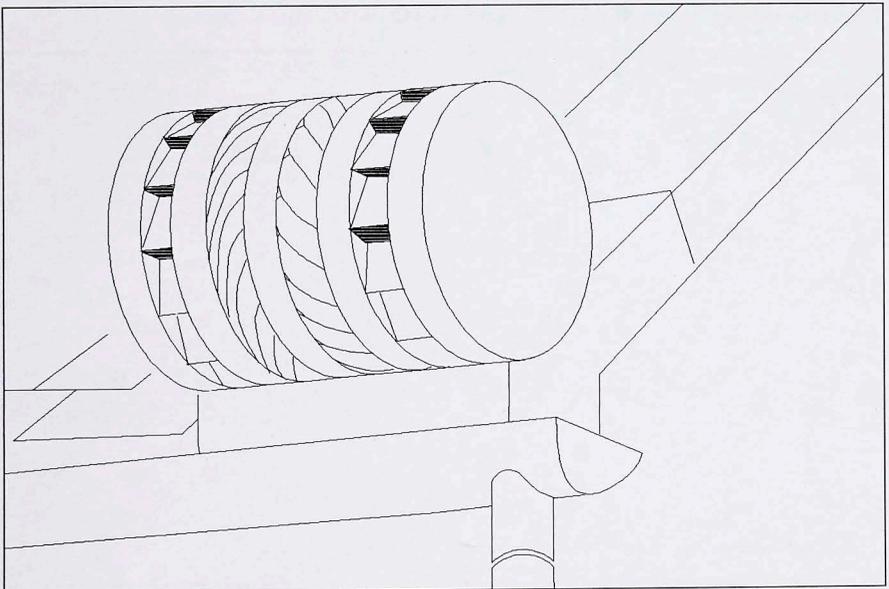
Geoff Leet

Elizabeth Beaton asked me to follow her comprehensive discussion of the skewputts of Moray and Banffshire (*Review of Scottish Culture 15*, p. 112) with a description of vernacular ones farther north.

Cromarty

Cromarty Town is very rich in scroll skewputts, many of which appear to illustrate pairs of ropes in pulley grooves combined with one or two ratchet wheels. The one I have selected to sketch is at Cromarty Antiques in Church Street and has two ratchet wheels at the ends and two ropes inboard, the most common arrangement. On Stornoway House in Shore Street the ropes are outboard with a single ratchet wheel at the centre. Elsewhere is a pulley block with four ropes but no ratchet. The flat ends of the skewputts are sometimes plain and sometimes decorated with a scroll.

The ropes and ratchets may be pure ornamentation but I suspect that they represent components from the local 1772 rope works that also made sacking, or possibly some ship's equipment. I have failed to find confirmation of either supposition.



Skewputt at Cromarty Antiques

The houses with these skewputts were built in the late 1700s or early 1800s.

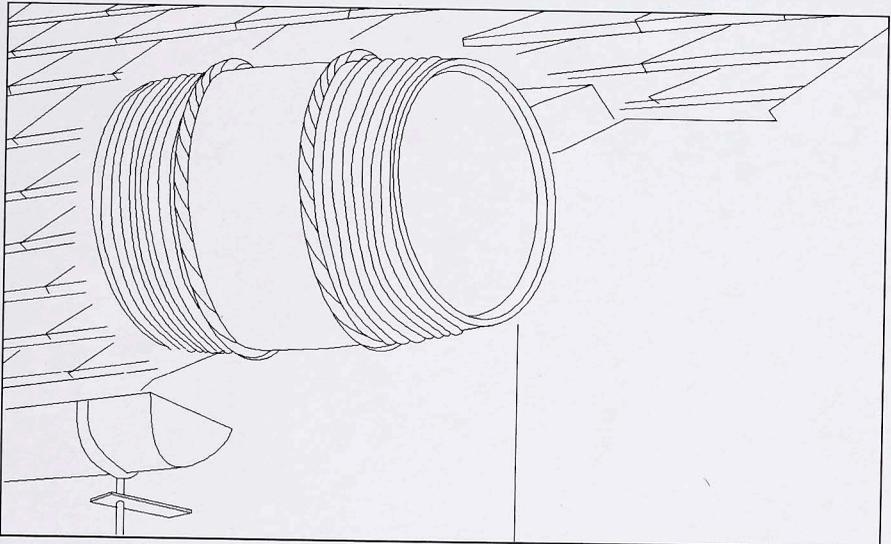
Lybster

Lybster Mains in Caithness was the home of General Patrick Sinclair (a hero of the American wars) and his son Temple Frederick when they developed the herring fishing at Lybster harbour from about 1810, with a wooden pier, up to Joseph Mitchell's enlarged harbour 1850-4. On the Mains one scroll skewputt survives, representing a herring barrel, which I illustrate.

In her *Illustrated Architectural Guide to Caithness* (ISBN 1 873190 27 1) Elizabeth Beaton mentions the belief that 'the skewputt was placed there by the General to commemorate the success of the Lybster fishery and the source of Sinclair prosperity!'

The ends of the barrel are shown bound with strips of wood called 'wattle' instead of the iron hoops that later became universal. Examples of both types are displayed by Wick Heritage. The two large diameter ropes may represent the ropes used to control barrels being lowered down an incline (for example beer barrels being rolled down into a pub cellar).

Parts of the house complex date from mid-18th century but an older two-storey house is now abandoned, and the barrel skewputt decorates what appears to be a later house. A still later wing overlaps the corner where a matching skewputt would be expected, and may entomb that skewputt. It is probable also that the gable was topped by a skew above the skewputt and that the skew has since been replaced by the present verge.



Skewputt at Lybster Mains

MILLER'S HOUSE, MONTCOFFER, BANFFSHIRE¹

Elizabeth Beaton

The former Montcoffer estate rises above the River Deveron, which surrounds it on three sides, spanned at the gorge by the fine one-arched Bridge of Alvah of 1772. No longer a single estate, the landscape is one of mixed woodland and farmland, looking south over rolling countryside and the Kirktown of Alvah, while two miles northwards the towns of Banff and Macduff are respectively west and east of Banff Bay and the river mouth. Montcoffer, like much of Banffshire and west Aberdeenshire, formed part of the vast Fife estates accrued by William Duff, Earl of Fife² in the 18th and 19th centuries.

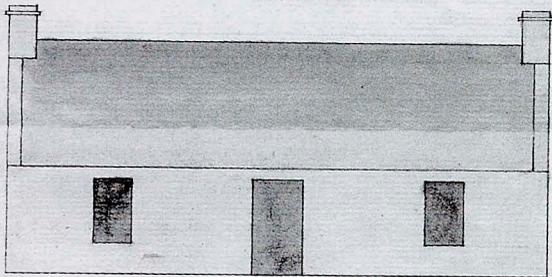
According to the 'Rev Mr. Wilson', minister of Gamrie Parish, Banffshire, Lord Fife in 1790 *has paid the greatest attention to the improvement of his estates*,³ by introducing better seeds, drainage and so on, and changing to cash rents instead of rents in kind: these comprised a number of days' labour annually, certain quantity of grain, eggs, poultry, etc. In this he was following a general trend initiated by Scottish landlords at this time. A small but none the less interesting estate 'improvement' is revealed by plan and elevation on a single page and estimates in the voluminous Fife Papers for a new house for the miller at Montcoffer.⁴

The Montcoffer mill was sited near the end of a half-mile long, wooded valley running north/south to join a narrow strip of pasture bordering the River Deveron. The scant remains of the mill stand in the valley bottom close to the lade, in reality the burn, which both filled and was harnessed by the mill pond to motivate the millwheel, before flowing away to the river a couple of hundred yards downstream.⁵ The (now roofless) cottage stands above the mill, on a part natural, part man-made south-east facing terrace, fronted by a track descending from the farmland. Above and to the rear where the fields meet the wooded slope, there was a well which served as a domestic water source and was linked to the cottage by a path, a steep climb up but easier going down hill with full buckets.⁶

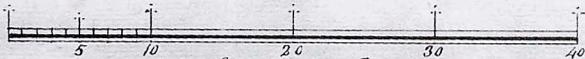
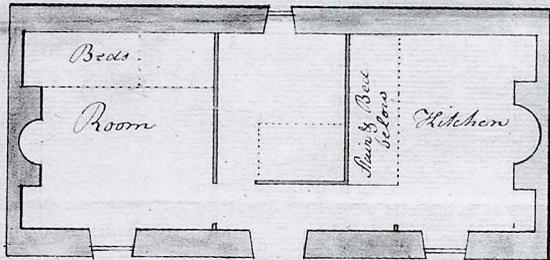
Plans and estimates

The 'Plan of the Millers House Designed at Mountcoffer (*sic*), 1808' illustrates a conventional single-storey cottage of three bays, with centre entrance flanked by single windows, tiled roof (coloured red on drawing) and end chimney stacks. The cottage measures 38ft x 19ft (11.58m x 5.79m), the accommodation consisting of the usual (for the time) two rooms separated by a small room (sometimes called a *press room*) lit by a little

*Plan of the Millers House
Designed at Mountcoffer
1808*



Extends 30 ft



Scale 1/8 of an Inch to the Foot

window in the centre of the rear elevation together with attic space reached by an internal stair. The kitchen is to the right of the entrance and the 'Room' to the left, each with hearth and both with built-in 'box' beds, in the 'Room' two built-in beds against the rear wall, one longer than the other, the shorter probably for a child or children. In the kitchen there is a mural stair against the small middle room wall leading to the attic indicated as 'Stair and Bed below'. There is yet another bed in the middle room, making four in all, 4 feet wide in the centre room and slightly narrower in Kitchen and Room. Access to the attic indicates it provided storage or even additional sleeping quarters. By the standards of the time, the house had generous accommodation for a family.

With the plan are two estimates, one from John Wilson and the other James Robertson, both builders whose names appear elsewhere undertaking other building tasks for the estate. The first is a somewhat worn document resulting in a quotation for £43.16.4d + optional extras of £3.17.6d. As Ja (James) Robertson offered to build the miller's cottage for less, £38.15.3, and mindful that the earl was careful with his money, it seems safe to assume that Robertson was appointed.

Robertson's estimate is quoted below in full (including original spelling). It reveals a familiarity with the location besides exploitation of local materials for the construction of a cottage that, though of better quality and more generous proportions than others in the neighbourhood as befitted both the status of landowner and miller, was similar to many others in appearance and layout.

Specifications

Mountcoffer Mill House, 1808 January.

A House proposed at Mill of Mountcoffer, according to the following dimensions & discription viz 38 ft long, 19ft wide over walls 7¹/₂ ft high side walls from the sole of the door, a chimney in each end, a door in the middle of the front 6ft by 3ft 6, 2 windows in front 4 x 3ft and one in the middle of the back wall 2ft by 1ft 8. The wall built of rubble stone & clay,⁷ snecked⁸ with lime in the outside, and harled⁹ within, the corners, scunions¹⁰ & chimney heads built with lime – 2 division walls of brick and post the width of the house with a door in each, and another wall betwixt these 11ft long along the lobbie with a door in the middle place.¹¹ The roof covered with Tyles,¹² a Square pitch with anchor joists and flooring, a trap stair in one side of the middle place to the loft. One of the rooms floored and plastered.¹³

The Situation proposed to be above the brae behind the Mill, a little back from where the old office houses are. Upon looking where the stones could be got, finds – That in the old office houses near the spot,

and in the little Tyle house upon the hight above Mountcoffer, there is near as many stones as will serve the dead walling, but those for the corner Scunions,¹⁴ squ tablin,¹⁵ ch heads,¹⁶ soles & lintoles for Door windows & Chimneys must be got from the quarries of Macduff.

Supposing the wood for the Roof to be laid down in time to serve as scaffolding, the estimate work materials & carriage according to the above dimensions & description is £38.15.3.

Ja Robertson

The back page of the drawing is inscribed, in a fair hand adorned with flourishes, probably written by a secretary or factor but signed Fife by James, 2nd Earl (1729-1809).

Fife House, 6th February, 1808. I have considered the Mason & Carpenter Estimates for the proposed House. I think it is best to execute it upon as reasonable & substantial Terms as possible, and that the Miller should pay for his accommodation, being allowed at his Removal, as it may be valued by men mutually chosen and not to exceed the present Estimate.

Fife

It appears from Lord Fife's comment quoted above that the Miller, though getting his new house built and paid for, was expected to pay '*for his accommodation*'. The mill was '*a nodal point in estate administration, and in the everyday life of the community, a large proportion of whose working year was concerned with tilling, manuring, sowing, reaping, stacking and threshing the crops that reached their final stage of processing between the rumbling mill-stones*'.¹⁷ The position of miller was sought after. The area which the mill served was the sucken, estate tenants or suckeners were bound or thirled to the mill, obliged not only to take their grain for processing to the estate mill, but to pay the miller a proportion of meal besides labour to clean out the mill pond, help with repairs and even transport mill-stones. While in the early 19th century, as with change from rents in kind to cash rents already referred to, the financial arrangements between estate and miller were altering, there was still no doubt but that he was a relatively prosperous member of the community. Lord Fife, like other landlords, saw no reason why he should not contribute toward his new house, even though '*he might be allowed (compensation) at his Removal*'.

Miller's cottage now

Nearly two hundred years later, the roofless cottage, partially covered with ivy, still stands on its terrace, the slope of the hill at the rear held by a rubble retaining wall. The external measurements are those indicated in the plan.

The rubble masonry is stugged, that is infilled with fragments where the courses require levelling, though with some later exterior harl; part of the front wall has fallen in. No brick internal walls survive, nor windows nor door. The rear window, intended to light the small middle room, has either been infilled or, more likely, there was a change of plan during building operations for there is a small mural fireplace in the centre of the external wall which looks original. The room could have been lit to some extent by borrowed light, a pane of glass let into the wall separating it from the lobby. At the back there are footings of a small outbuilding abutting the rear wall; perhaps a bucket privy?

The cottage is typical of many others, but of slightly better quality and construction. Ja Robertson has not sought (and it is unlikely that he was requested) to provide more 'design conscious' plans nor specifications; the walling is well constructed, some lime was used for the external harling while brick was purchased for the internal walls. The tiled roof would have been more durable than the local thatch covering the homes of the many cottars and farm workers living and working in the area. Yet vernacular clay mortar is exploited, the raw material probably found locally, as suggested by 'Clayfolds', the name of the farm on the opposite side of the river from the mill. Locally clay would also have been used, rather than the more expensive and more durable pantiles, for the traditional north-eastern 'clay thatch' where the thatching material was pinned to a turf underlay and washed over with clay slurry. For the 'Millers House Designed at Mountcoffer' the Fife Estate commissioned a good quality dwelling that would house succeeding millers but for which the patron looked no further than local tradition for its form and design.

Acknowledgements

I am grateful to Birgitte and Malcolm Morison, owners of the Montcoffer mill site; Michelle Gait and Aberdeen University, Special Collections and Archives for reproduction of original drawing (AU MS 3175/M/F89); David Catto, Aberdeenshire Library and Information Services, Aberdeenshire Council.

References

- ¹ Grid reference NJ 688 609
- ² (1697-1763), William Duff, banker, entrepreneur and landowner, created Lord Braco, subsequently Earl of Fife
- ³ *The Statistical Account*, 1790-1 (ed Witherington and Grant, 1982) p 189
- ⁴ Fife (Montcoffer) Papers, Special Collections & Archives, University of

Aberdeen. MS 3175/M/F89. Mountcoffer is spelling used throughout, and also on 1st and 2nd eds. OS 1866-7 & 1902 respectively.

⁵ Burn identified as *Old Mill Lead* and remains of the mill as Mill of Mountcoffer (*in ruins*) on 1st ed. Ordnance Survey (1866-7) but unmarked on 2nd ed. (1902)

⁶ Cottage, well and path appear on 1st ed. OS (1866-7) and 2nd ed. (1902)

⁷ clay mortar

⁸ lime harl applied to external joints as protection against damp and weather, leaving faces of larger stones uncovered

⁹ Type of rough-casting

¹⁰ Probably the open unfinished edge of walls at door and window openings

¹¹ Middle room

¹² Pantiles, probably from Blackpots Brick and Tile Works, Whitehills near Banff established in the 1780s. The brick for the interior walls likely from same source. See Geoffrey D Hay and Geoffrey P Stell, *Monuments of Industry* (RCAHMS, Edinburgh 1986) pp 167-9.

¹³ Probably the *Room*: the use of wooden flooring indicates its status as the 'best' room; elsewhere the traditional clay floor, stamped and hardened and in the kitchen sometimes strewn with sand to facilitate cleaning

¹⁴ Quoins

¹⁵ Skew tabling or skewes, flat stones protecting gable-head

¹⁶ Chimney head or cope

¹⁷ Alexander Fenton, *Scottish Country Life* (Edinburgh, 1976) p 108

DUNMAGLASS, INVERNESS-SHIRE; LATE 19TH CENTURY IMAGES OF A HIGHLAND ESTATE

Elizabeth Beaton

Introduction

Recently I received a surprise gift of photographs of two late-19th century farms at Dunmaglass¹, Inverness-shire, a 1200 acre estate lying south of Loch Ness around the upper waters of the River Farigaig. From 1626 Dunmaglass was the ancestral home of the chiefs of the Macgillivray clan, and most of those living there bore that name. Because of financial difficulties the estate was sold by the last laird in 1889² to Mr William Sopper, a prosperous London stockbroker who apparently built the present shooting lodge possibly incorporating an earlier house.³

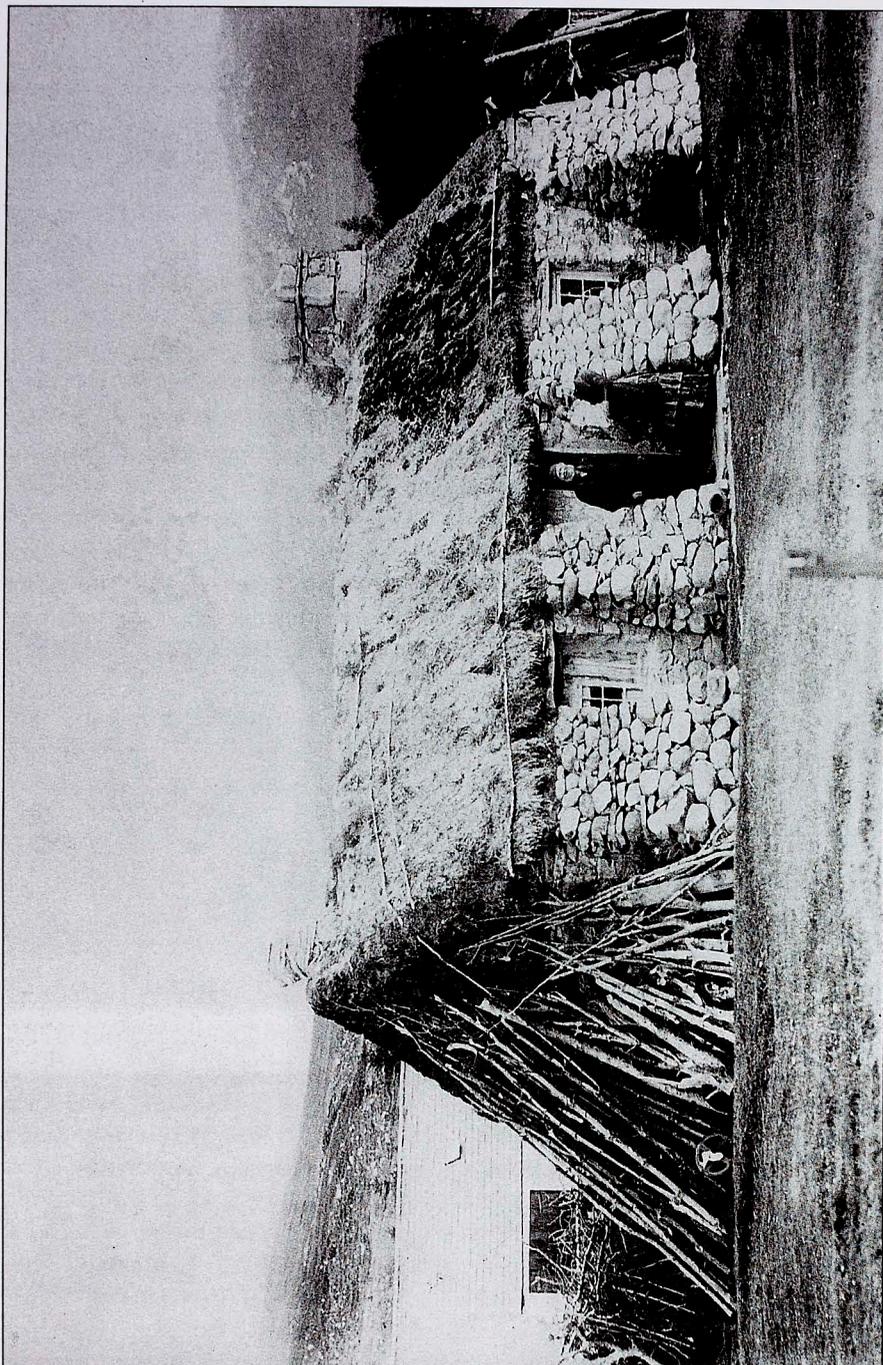
These two photographs were most likely taken by Mrs Annie Sopper⁴, William's wife, and date from the 1890s, when she appears to have recorded not only the farm houses and some aspects of farming but on-going development, additions and repairs on the estate, revealing a fascinating array of different local materials and building practices. This paper is a commentary on these illustrations.

The photographs are untitled and for the purpose of this paper are identified as A⁵ and B⁶.

Farm & Cottage A

The farmer and his wife stand at the front door, sheltered by the heavy buttresses and dressed in their best clothes, she in a flounced skirt and a long dark shawl and with a young child in her arms. He wears a dark coat and trousers, a neck cloth and beret type 'bonnet'. They were probably posing for Mrs Sopper.

The single-storey, 3-bay cottage has a centre door closed by double-leaf plank doors, serviceable in rough weather for one person can slip in without opening both doors but sufficiently wide when fully open for visitors, a basket of peat to fuel the fire, the meal girnel or to let in sunshine and light during good weather. Four massive dry stone buttresses support the front wall—and maybe at the rear as well. I suspect the need to buttress the splaying walls was caused by various factors such as weak timber tie beams, heavy thatch and damp (the walls are not lime-washed as in Cottage B). The walls are of field boulders with little mortar, almost a drystone technique: the gathering of boulders for construction also helped clear land for cultivation. The wallhead is just higher than the man in the doorway, so nearly 2 metres high (the Imperial 6 foot is likely). These walls are masonry



Farm and cottage A

to wallhead height throughout but the return gables, completed in turf to the apex, are carried up and over the top of the gable wall as turfed skewes to merge with the thatch. The use of turf for gable walling was not unusual in this type of house in the Highlands. We cannot know whether the building is cruck-framed (highland couples) but this and the other dwelling may well be. I noted evidence of mural cruck blade slots and even surviving timbers in the hinterland south of Loch Ness during field work in 1984-5.

The left side of the cottage is the *but* or kitchen end and is served by a *hinging lum*⁷ indicated by the position of the *lum* about 45cm (18") along the ridge from the gable apex, and drawing the smoke upwards from the wooden canopy abutting the interior. The square *lum* is a wooden frame with wooden coping, the frame thatched and bound with ropes. It leans away from the ridge and is in need of repair. The *ben* or best room at the right has a hearth served by a mural flue and masonry chimney. A peat stack is built against this gable and possibly another against the kitchen gable but masked by timber.

The kitchen window is set deeper than the window for the parlour; both are lit by 6- or, more probably, 9-paned windows with slender astragals. The roof appears to be in course of re-thatching, working from the left to right. The turf underlay shows up well to the right while the thatch, probably *bent* (coarse grass) or rushes, is held down with long horizontal rods held in place with wooden pins, usually lengths of hazel bent in two.⁸

The steading to the rear is in marked contrast to the cottage. Though the building material does not show up in the photograph, the straight lines and sharp angles of the wide doorway indicate mortared masonry. The roof is slated, with what seems to be a tiled ridge and cast-iron skylight; these are materials and skills brought in from outside the farm and suggest that the steading was financed by the landlord, probably the Soppers.

Farm and Cottage B

This has a much longer range than cottage A and I surmise it might originally have been a *longhouse*, an interconnecting dwelling and byre under one continuous roof. The dwelling is distinguished from the abutting byre at the left by lime-washed walls and different thatch. The complex stands on a slight rise which would have assisted drainage and, if the site was near the river, protected it from flooding. The dwelling appears longer than cottage B with a deep porch boasting a small window apparently opening into the kitchen end. This porch is probably an addition, again with a turf gable; the roof appears to be also of turf underlay with a wispy thatch too faint to identify the material though again rushes or *bent* are likely, while the eaves are held in place by long rods pegged into the turf as in dwelling A. The ridges are in better shape than the remainder of the roof, pale in colour and



Farm and cottage B

more robust. As before the *lum* is a square wooden frame bound with rope, but in good repair, a neat and upright structure in contrast to its counterpart on Cottage A. The thick walls of the byre are propped by a heavy buttress at the left corner; a low dung heap is gathered between this and the doorway. Here the roof is thatched with regularly coursed, overlapping turf divots, laid with growth on the underside and intended as the roof covering rather than underlay.⁹ A large peat stack abuts the byre gable and blends seamlessly with the range, the colour tones ranging from dark to light, each shade identifying a different accommodation and function.

Behind the peat is a circular stack—probably of unthreshed sheaves awaiting threshing and winnowing. If so then this is the stack-yard close to the barn, a long building with rubble walls sparingly lime-washed and thatched with a turf ridge, the thatch fastened with regular horizontal rows of pinned wands. The dark line between thatch and wall suggests a heather eaves course, the row of tough heather designed to throw off rainwater and protect the vulnerable wallhead. The corn stack half blocks the sight of a doorway—perhaps one of the opposing winnowing doors in the threshing barn, in northern Scotland usually aligned east/west to exploit the prevailing winds. This then could be the west side of the farm with the south-facing dwelling sited to gain maximum natural light and warmth.

While two small black cattle are the only obvious sign of livestock, the apparent crowding behind the fenced enclosure to the left fronting the stockyard suggests livestock; the temporary nature of the corral is further identified by the *flake*¹⁰ (hurdle) revealed so sharply against the peat stack.

A long low, whale-backed building stands close to the barn at the left of the photo, perhaps turf walled and certainly thatched; the white ‘blobs’ on the ridge must be guessed at! Birds (white hens?) or boulders? The structure might have served as shelter for cattle. The building on the right of the photograph behind the drystone dyke with a piended (hipped) roof suggests a dwelling,¹¹ probably that of a *cottar* family and similar to those in Aberdeenshire in the mid 19th century: ‘old-fashioned low-browed huts ... built of turf and rough hill stones in alternate layers, while the roofs were thatched with straw and roped diagonally after the manner of a hay stack ... In these lived my father’s cottars—a partial survival of a system of land-tenure once very common in Scotland. These, as required, worked upon the farm and depended upon him for a great part of their daily bread.’¹²

Conclusion

These two photographs are a valuable and interesting record of two farms on the Dunmaglass estate a century ago, their building types similar to most of the smaller homes in the immediate area and beyond. Those who built them exploited locally available materials with skill and ingenuity, following

a traditional layout that suited family and livestock. When abandoned, these buildings disintegrated and reverted to the terrain from which their fabric had been collected, cut, dug, quarried and carried - leaving little or no trace of their existence or of the way of life of the families for whom they were home and workplace.

Acknowledgements

I am grateful to Joanna Dorling for permission to reproduce her great-grandmother's photographs and to Hilda Hessling. R. Steward, Highland Council Archivist, and his staff have been generous with their help and interest.

References

¹ Hilda Hesling, Daviot, Inverness-shire drew my attention to these albums deposited with Highland Council Archives, Inverness (HCA/D/551/1-6) by Joanna Dorling, William and Annie Sopper's great-granddaughter. These albums date from the 1890s and contain a large collection of family photographs, depicting sporting and domestic activities at Dunmaglass; the family home at 3 Upper Belgrave Street, London; seaside holidays at Littlehampton, Sussex and much else. Unfortunately many of the images are untitled. For Dunmaglass see also *Groome's Ordnance Gazetteer of Scotland* ii (Edinburgh, 1893), p 439.

² Groome, *op.cit.* p 439. This was probably 'Neil John Macgillivray, Esq.' (also McGillivray) who was in Montreal, Canada by 1893. There are two photographs of a John Macgillivray in the albums, one with a Sopper family group and another full length (HCA/D551/1&6 respectively: the pages are un-numbered).

³ Grid Ref. NH 593 223

⁴ *Pers. comm.* Mrs Joanna Dorling

⁵ HCA/551/6.

⁶ HCA/D551/1. There are two versions of this photograph, of which that on the second page of the album is from a slightly different angle. The version reproduced for this paper was not available in HCA November 03.

⁷ A chimney canopy, probably of planks (sometimes clay-daubed wattle) abutting the gable wall to draw the smoke from the hearth. Where there was a central hearth a circular canopy hung above the fire serving a ridge stack, hence *hanging* or *hinging lum*. A chimney alone is also referred to as a *lum*.

⁸ For thatch see Alexander Fenton & Bruce Walker, *The Rural Architecture of Scotland* (Edinburgh, 1981) pp 44-68; Elizabeth Beaton, *Scotland's Traditional Houses, From Cottage to Tower-house* (Edinburgh 1997) pp 23-4

⁹ Album 6 also contains a photograph of three ladies posing outside their

cottage door. The small portion of the roof revealed is newly thatched with shaped turf divots.

¹⁰ I recently heard this term used in neighbouring Nairnshire

¹¹ The version of this photograph in Album 6 suggests two cottages in linear formation beyond the drystone dyke, low with lime-washed walls and thatched roofs

¹² (Ed. John Love & Brenda McMullen, *A Salmon for the Schoolhouse, A Nairnshire Parish in the Nineteenth Century from the Diaries of Robert and Elsie Thomson* (Edinburgh, 1994), p 10. Robert Thomson (1838-1923) included this passage in his description of his father's Aberdeenshire farm. For walling of alternate layers of turf and stone, see Fenton and Walker, *op.cit.* pp 73-6.

ROVING RECORDS

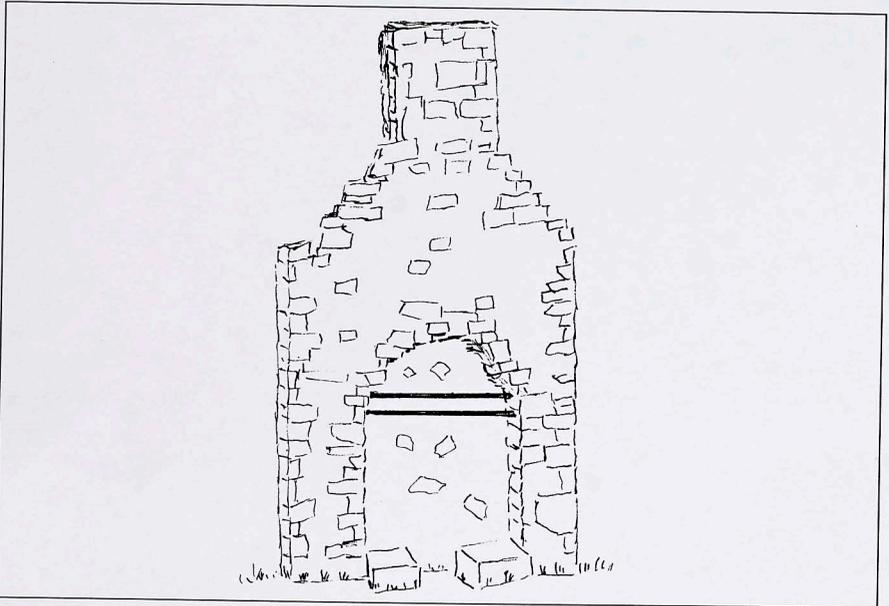
Robin Callander

Robin Callander keeps meticulous, dated notes of buildings he observes on his travels. During the summers of 2002 and 2003 he noted the following (and probably much else) in Banffshire, Inverness-shire and Mull. See also 'Notes on a Sheep House, Shap Wells, Cumbria' (VB26, 2002) which subsequently generated further discussion from readers.

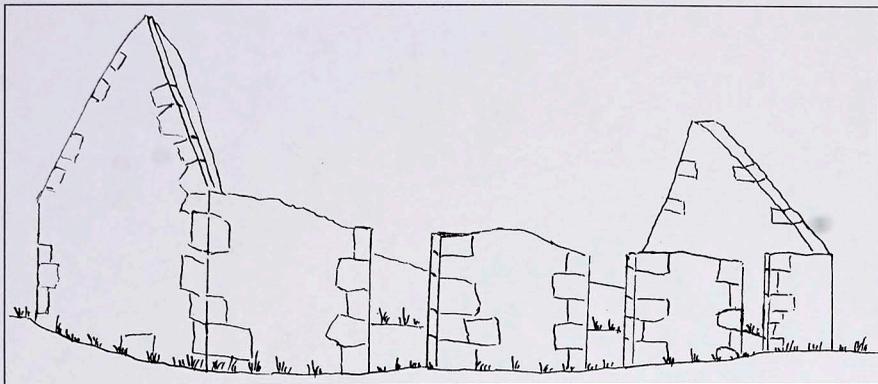
A GABLE-END IN BANFFSHIRE (NJ 143 209)

At Fodderletter, near the side of the Grantown-on-Spey/Tomintoul (A939) road, is a free-standing gable with a chimney serving a hearth. Not as might be supposed the remains of a house but a shelter constructed for use by the roadmen who in the 1920s and 1930s maintained this road. The roadmen would back their mobile wooden van drawn by the steam roller against the gable and make use of the hearth to have a fire for warmth and cooking. The horizontal metal bar embedded in the sides of the chimney probably served to hang a kettle or pots, which could also keep warm on the flat stones flanking the hearth. This gable was one of two on that stretch of road.

(For illustrations of steam rollers towing *living vans* see John Crawley, *Steam Rollers in Focus*, 1986)



Fodderletter 'Lum'



Ortunan, Slochd, Inverness-shire

A STABLE? AT ORTUNAN, INVERNESS-SHIRE (NH 842 238)

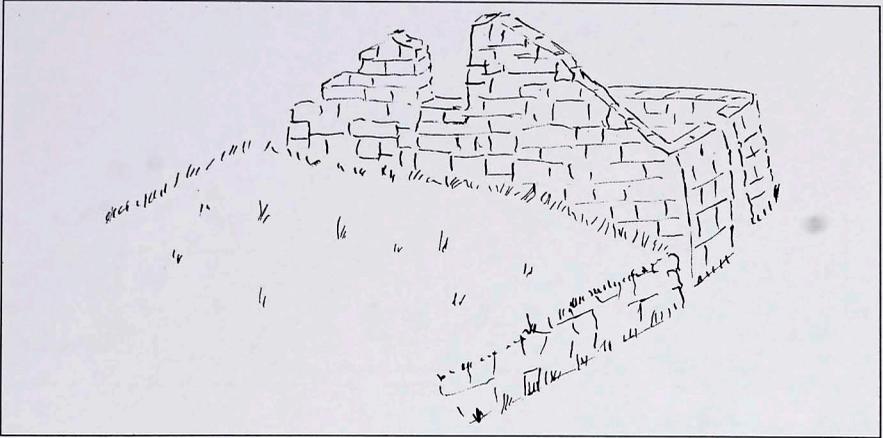
Beside the Wade Road at Ortunan, near Slochd, is the ruin of a gabled structure 11.5m N/S by 4.6m within mortared walls 0.7m thick and 2.2m high (gables 4.3m high). The interior of the structure had been divided by wooden partitions to form three sections each with an entrance in the E wall (facing away from the roadway), the only openings in any of the walls. There are gaps at the E end of the partitions and at the W end the partitions appear to end at a trough which runs the length of the W side of the structure at ground level. The way in which the structure is partitioned, each section having a separate entrance, and its relationship to the former road (superseded in 1791 due to re-alignment), questions whether it was a stable for 'relay' horses or, a century later, sheltered horses during the construction of the Highland Railway in the 1890s.

WINNOWING BARN, BRAES OF CREICH, MULL (NM 320 244)

At Braes of Creich on a gentle, south-facing slope within a deserted settlement, is an area about 8m N/S by approximately 6.5m E/W which has been built up on its down-slope side and revetted on its E and W sides to form a level area probably for use as a stack-yard.

About 0.5m from the S end of this stack-yard is the N end of the shell of a barn measuring 6m N/S by 3.64m E/W within double-faced clay-bonded walls 0.75m thick, the side walls standing to 1.5m high, the original wall height. In the W side near the SW corner is an entrance 1.0m wide and opposite in the E wall was a similar entrance, now blocked.

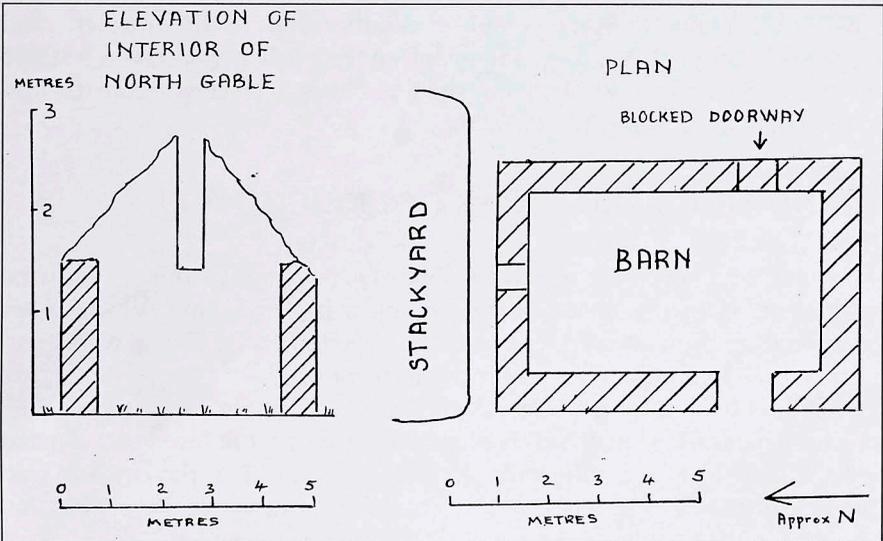
The N end of the barn was gabled and an opening, 0.5m wide at its



Braes of Creich (looking SSE)

base 1.4m from ground level, was probably to give 'crop access' to the barn from the stack-yard. On the inner side of this opening there is no evidence of a loft and this appears confirmed as at the S end of the barn the roof was 'hipped'.

Harvested sheaves of straw with grain were brought to the stack-yard from the fields and stored there in thatched stacks to keep dry until required. The sheaves were then passed through the mural doorway, threshed with a flail in the barn and the grain winnowed on the floor between the two openings aligned to exploit prevailing winds which blew away the chaff.



Braes of Creich

A BARN ON THE PRIORSLYNN FARM IN CANONBIE, DUMFRIESSHIRE

Barbara Stuart

Scotland is thought of as a country where the primary building material is stone. Indeed most of the older buildings that one sees now are made of stone and it would be easy to assume that this has been the traditional way of building both vernacular and more sophisticated buildings. In fact for many vernacular builders stone has not always been the most obvious choice of material. Historically in some parts of Scotland other materials have been more appropriate and in these areas it is only in the relatively recent past that these old building traditions have changed to stone construction.

In parts of Dumfriesshire, many buildings were once constructed with earth walls. This paper looks at the nature of this material and the problems associated with conserving earth-walled buildings. Other materials and methods of construction such as a timber cruck framing system, stone footings and thatched roofs are also used in these buildings, and the walls were often rendered. However, for the purposes of this paper these materials will only be looked at in the way that they influence the performance of the earth wall. This paper will explore the problem of decay in earth buildings by looking at a barn on the Priorslynn farm in the village of Canonbie.

Priorslynn Barn belongs to a building type documented in Dumfriesshire as dating principally from the period before the 'improvements' of the late 18th and early 19th century. There has been an established tradition of building with earth in both Scotland and the rest of Britain, and although the barn may share features with earth buildings in other parts of Scotland it is truly part of a building tradition found on the Solway Plain in Cumberland to the south. Each region in Britain has its own particular way of using the material and the terminology for earth buildings also has regional variations. In the Solway Plain area these buildings are referred to as 'clay dabbins' or 'daubins' or 'clay biggins'.

The Solway Plain area was well suited to the use of earth construction for its vernacular buildings. By definition vernacular buildings rely on local materials for their construction. The geological nature of the plain around the Solway Firth is such that stone is scarce while mud or clay is plentiful. Clay can be found in drifts of six feet or more.¹ Hence, for local builders, it was logical to develop a method of construction that was based on using the abundant supply of clay.

Lying as it does on the border between England and Scotland the Solway Plain was for many years a volatile area subjected to much cross-



Priorslynn Barn from the north-east

border raiding. Canonbie itself now lies only a few miles north of the border, and during the Middle Ages most of the parish of Canonbie was in an area known as the 'Debatable Lands', territory disputed between the English and the Scots.² Because of this, it may not have been in the interests of the inhabitants to invest heavily in their buildings. Accordingly they developed a type of construction that may have been easy to destroy but would also have been easy to re-build.³ Documentation from the 18th century indicates that, unlike earth construction in other parts of the country, the builders in the Solway Plain could erect the walls of a building extremely quickly, in fact in a single day.⁴ Therefore the style of earth construction that one sees in the Solway Plain could be a response to specific political conditions.⁵ It is also possible that the earth wall techniques of this area were derived from building with turf,⁶ also a speedy form of construction.

Construction techniques

Earth buildings are extremely common in other parts of the world. As John Warren writes, they 'have sheltered human beings longer and to a greater extent than any other material - and they have disappeared on an equal scale'.⁷ This highlights the impermanent nature of the material and the problems inherent in conserving structures that were perhaps never meant to be long lasting.

In Britain several earth construction techniques are used:

- *Timber diaphragms*: a system where an earth mix is applied to a wooden armature and can take different regional forms. Some variations would be 'mud and stud', 'stake and rice' and 'cabers and mott', which can be found north of Inverness.
- *Rammed earth*: the rammed earth or '*pise de terre*' method was introduced into Britain from France in the late 18th century. It tends to have been used for buildings of higher status than vernacular buildings. This system employs shuttering into which a relatively dry earth mix is placed and rammed in layers. The shuttering is dismantled and re-erected to raise the height of the wall. A regional variation exists in Scotland, in Morayshire, and is known by the name of 'clay and bool' where rounded boulders or 'bools' are incorporated into the mix.
- *Adobe*: a sun-dried and unfired earth brick often given the Spanish name of 'adobe' but also known as 'clay lump' in England. It was introduced at the same time as *pise* and is most commonly found in East Anglia but was also recorded in Perthshire.⁸
- *Traditional or piled method*: This is the most common method in the British Isles and the earth buildings of the Solway Plain fall into this category although they have their own particular characteristics. A somewhat wetter and more workable earth mix than used in the rammed earth method is piled freely onto a stone footing course, compacted and then left to dry. When dry, the next course or 'lift' is placed. As the walls increase in height the lift lines are clearly visible. The excess thickness of the walls is pared down after each layer has been completed. Sometimes openings are formed as the walls are raised or lintels are placed in the appropriate locations and the openings cut in later. The height of the lift varies according to region. In the Carse of Gowrie, in Perthshire, the lifts are of 60cm, in the Solway Plain it is 15-20cm. The average is about 45-55cm.⁹ The height of the lift is a defining characteristic of the buildings of the Solway Plain.

Earth Building on the Solway Plain

Numerous earth buildings have been recorded in this region in Cumberland but Priorslynn Barn is the only known example in Dumfriesshire.¹⁰ It is difficult to date but it has been estimated that it was built in the second half of the 18th century.¹² It would therefore be a recent example of a type of building that was more prevalent before the improvements of the late 18th or early 19th century.

The construction of the earth buildings in this area has many similarities with the 'piled' method employed in other parts of Britain. The

often quoted Devon expression 'Gie un a gude hat and a pair of butes, an ee'l last for ever'¹³ describes the necessary components. The enemy of any earth wall is wet and damp. A pair of 'boots' in the form of a high stone underpinning course, or plinth, not only transfers the load of the walls to the ground but more essentially acts as a barrier to moisture rising from the ground, allowing it to evaporate before entering the walling. A 'hat' prevents the walls from getting wet from above and a thatched roof provides an overhang that sheds the water well clear of the walls. Many farm buildings might not have been rendered but most cottages would have been. A lime render protects the walls from water penetration while allowing any moisture inside to evaporate.

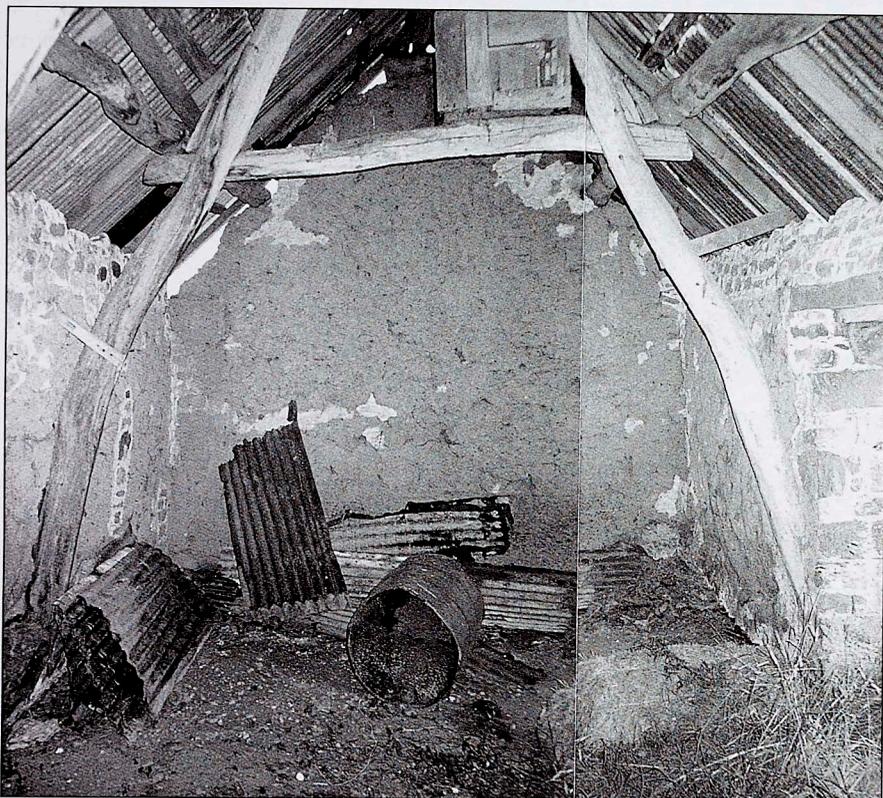
A unique feature of the earth buildings of the Solway Plain is that the walls could be built in a single day.¹⁴ In other areas where the lifts were typically much higher the builders needed to stop between lifts to allow the wall to dry out before continuing. If this was not done then the wet wall could bulge under the weight of the new material above. The builders of the Plain, on the other hand, devised a system of thin courses which were interspersed with layers of straw. It has been suggested that the straw allowed the water to be squeezed out which stabilised the wall and allowed for continuous construction.¹⁵ When raising these walls the whole community would get together to help. In 1769 Thomas Pennant, the zoologist, travelled through the Borders and described Canonbie as having most of its houses built of clay. The person building the house would prepare the materials and 'then summon his neighbours on a fixed day, who come furnished with victuals at their own expense, set cheerfully to work, and complete the edifice before night'.¹⁶ In the Statistical Account of Scotland of 1792 there are descriptions of building clay houses in Dornock, a few miles away on the Solway Firth in Dumfriesshire, that tell a similar story.

The farm-houses in general, and all the cottages, are built of mud and clay; and yet the houses when plastered and properly finished within (as many of them are) are exceedingly warm and comfortable. The manner of creating them is singular. In the first place, they dig out the foundation of the house, and lay a row or two of stones; then, they procure, from a pit contiguous, as much clay or brick-earth as is sufficient to form the walls: and, having provided a quantity of straw, or other litter, to mix the clay, upon a day appointed, the whole neighbourhood, male and female, to the number of 20 or 30, assemble, each with a dung fork, a spade, or some such instrument. Some fall to the working of the clay or mud, by mixing it with straw, others carry the materials; and four or six of the most experienced hands, build and take care of, the walls. In this manner, the walls of the house are finished in a few hours; after which, they retire to a good dinner, and plenty of

drink, which is provided for them, where they have music and a dance, with which, and other marks of festivity, they conclude the evening. This is called a daubing; and in this manner they make frolic of what would otherwise be a dirty and disagreeable job.¹⁷

This account testifies to the community nature of the work, its speed of construction and the fact that the earth for building was found at the site.

The earth buildings of the Solway Plain were constructed using a timber cruck framing system. After the initial excavation work the crucks were raised and stabilised by the ridge beam, purlins and wall plates. The roof load is carried directly down to the footings via the wooden cruck blades. The quickly built walls did not have to assume any load other than their own self-weight. In other parts of the country earth walls are load bearing but it is quite probable that the rapid method of construction in the Solway Plain meant that the walls could not take any load while they were wet. Because of the framing system, with the ridge beam transferring its load to the crucks, these buildings always have gabled ends instead of hipped



The eastern section of the interior – probably the barn

roofs. In some buildings a cruck frame would be incorporated into a dividing wall. This is the case in Priorslynn Barn where an earthen dividing wall separates a byre from the barn.

The materials of the earth wall

An earth wall has the basic constituents of *aggregate*, *binder* and *water*. To this are frequently added *fibre* and/or *stabilizers*.

- *The aggregate* forms the bulk of the wall. It needs to be well graded in size, ranging from gravel to sand and silt. Aggregate in the Solway Plain buildings tends to be angular, as opposed to rounded, and can contain large pebbles of up to 50 to 75mm and a range of smaller ones. Sand is a big constituent of the mix, and silt, which is not particularly useful in terms of cohesion, fills up the smallest of spaces.
- *The Binder*: In some parts of England the binding material is chalk. In the Solway Plain the binder is clay. Clay holds the aggregate in place mechanically, using suction,¹⁸ as opposed to chemically, in the manner of a hydraulic lime. Clay is highly unstable as it expands and contracts depending on how wet it is. Consequently a high aggregate-to-binder ratio is desirable. 20% clay to 80% aggregate is a common mix.
- *Water* is needed to mix the aggregate and binder. The minimum amount of water for a workable mix is required. If there is too much water the mix is uncontrollable, lacks strength, and takes a long time to dry. Most critically, because clay contracts when drying, if there is too much water in the mix then cracks will form as it dries. Minimising the water content will minimise shrinkage and cracking. Most of the water in the mix is lost as the wall dries although a small percentage is left as part of the final composition of the wall.
- *Fibre*: Most earth walls contain fibre which gives tensile strength to the earth. This can be in the form of straw, heather, hay, rushes, grass and other plant fibres or animal hair.¹⁹ In the Solway Plain straw was used and its primary function seems to have been to distribute the formation of cracks throughout the wall.²⁰ Numerous, small, hairline cracks would be evenly spread out in the wall instead of a few big cracks.
- *Stabilisers*: Other elements could be added to make the material more stable and increase its strength. Cement, lime or bituminous solutions could cause a chemical reaction. Animal products such as blood or milk could also be added. Cow dung is the most common stabiliser and is found in Solway Plain buildings. It appears to produce no chemical action but plasticizes the soil and increases workability and weather resistance.²¹

The clay and other materials were usually available close to or on the

site. They were very well mixed on site and were laid on the stone footings and around the crucks, using a byre fork. The mix was laid in courses varying between 15-20cm in depth, with layers of straw in between. This was then thoroughly compacted, and when the walls were complete they were pared down on the sides using a spade, axe or even a fork,²² and left to dry.

Characteristics of the earth wall

Once built the walls have certain structural characteristics. Like masonry they are strong in compression. However they are very weak in tension and in shear – the stress caused when particles of material slide in relation to one another – although the fibre does provide some tensile strength. A problem that is inherent in all clay buildings is the fact that, as the wall dries out after it has been built, the material begins to shrink. Since it is weak in tension cracks are easily formed. This basic problem is faced by both builders and those conserving earth buildings.

Of all the problems an earth building might face the presence of water is the most harmful. Firstly clay is an unstable material which can change volume according to how wet it is and expansion and contraction can induce tensile failure and cracking. Secondly water can act to wash away the very material of the building. Wind and rain erosion can exacerbate existing problems, forming wider areas of decay where initial cracks, fissures and voids have already formed. A wet wall can be damaged by frost that can cause cracking and spalling or delamination.

Earth buildings require a high degree of maintenance if they are to be kept in good condition. It is essential that its vulnerable material is kept protected so that the process of decay does not start.

The building in its present condition

Lack of maintenance has made Priorslynn Barn vulnerable and hastened its decline. If action to repair the building is not taken soon it will not last much longer.

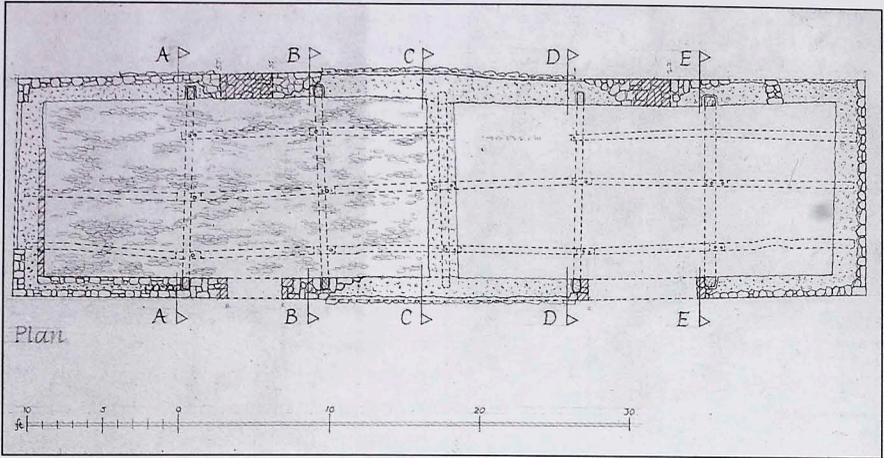
Priorslynn Farm is part of the Buccleugh Estate. The steading is occupied by a tenant and farmers rent the fields. The barn sits on top of a high hill away from the main steading but close to a modern agricultural building. It is small, approximately 7.3m by 4.43m. Five crucks frame the building, the centre one encased in a earth partition wall. The western section of the building has a cobble floor and is thought to have been a byre, while the eastern section has a compacted clay floor and was probably the barn, although there are signs of a plaster finish on the inside. The walls are of earth, approximately 50-60cm thick, and fashioned in the Solway Plain tradition already described. They are constructed on top of a stone plinth



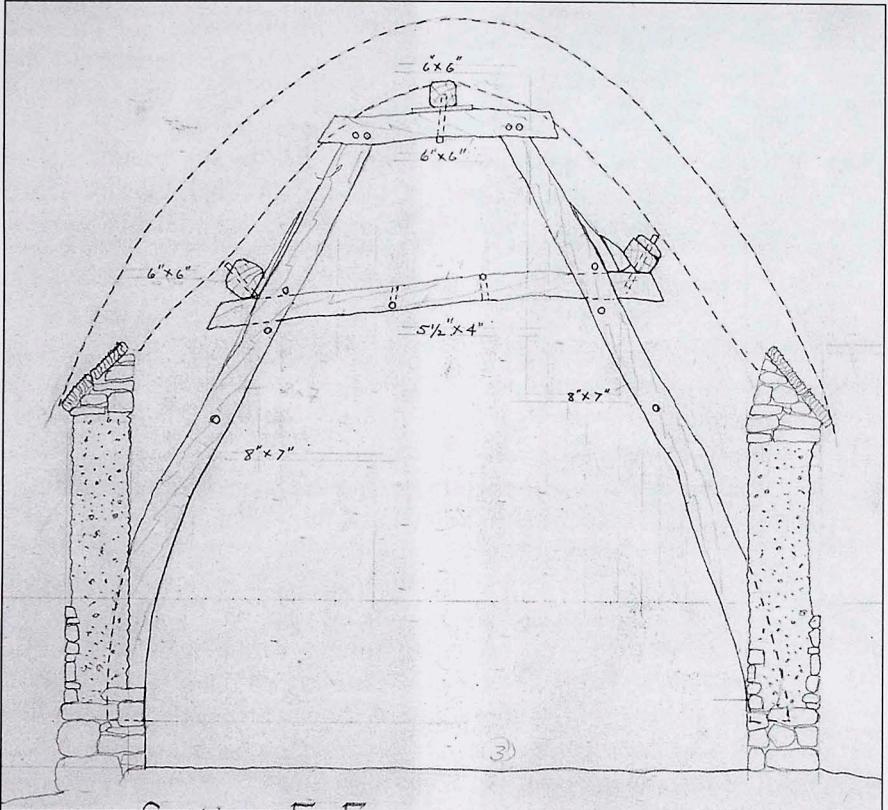
Priorslynn Barn from the south

which varies in height. The western gable and the western section of the north wall have collapsed to a large extent and this area is partially enclosed by a timber and corrugated metal cladding. The building is roofed with badly maintained corrugated metal. There are two openings on the south wall, one for each compartment. The opening for the byre has been made smaller with stone infill and previous openings in the walls opposite have been filled in with stone rubble. Some of the earth walls are erratically faced with stone presumably to protect the earth. If there was ever a protective render on the walls, there is no longer any sign of it. At the door openings dressed stone jambs would have protected the earth at the openings from damage by animals passing through. There are wooden lintels and signs of timber doorframes but no doors now. The wallheads have stone rubble built on top of the earth.. This does not seem to be typical of the technique of building in the area and might reflect later modifications when the building was re-thatched or an attempt to consolidate damaged wallheads. On top of the stone wallheads are the remains of a turf coping. On the southern side of the building quite a few young sycamore saplings grow immediately against the footings. To the north of the building is a shallow dip, shown on the OS maps of the mid-nineteenth century as a pond. Possibly the earth for the walls was found here.

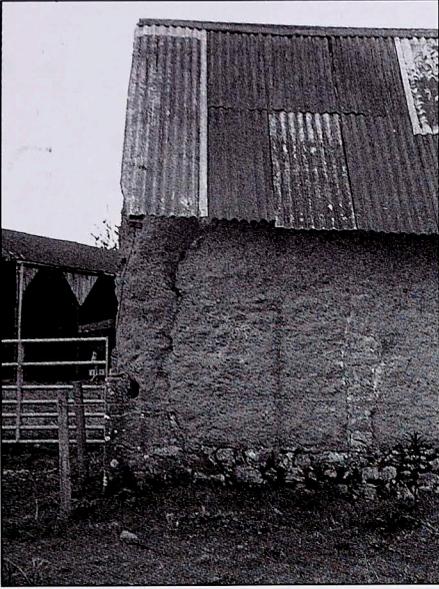
The barn appears to have been neglected for a long time and the



Plan of Priorslynn Barn, RCAHMS, 1971 (Crown Copyright)



Priorslynn Barn, RCAHMS, 1971 (Crown Copyright)



The east end of the north elevation. (Note how the roof does not overhang the east gable.)

process of decay has been surprisingly slow considering how unprotected it is. According to a previous tenant who took over the farm in 1955, the barn when he moved in already had a corrugated metal roof which at that time 'looked old'.²³ It is therefore unknown when exactly the roof dates from. The corner which is now collapsed had already done so at that point. The Royal Commission on Ancient Monuments recorded the building in 1971 and the building looked in a not dissimilar condition to how it is now. At that point sockets and wooden pegs were noticed on the outside of the east wall which were thought to be anchoring for a former thatched roof.²⁴ The biggest change since the

1970s is the growth of saplings on the south side of the building. The previous tenant believes that the part of the building that has suffered a great deal over the last half century is the eastern gable which is severely eroded.²⁵

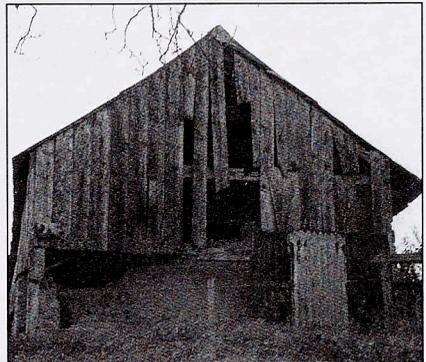
Signs of decay

The building currently exhibits the following signs of decay:

- The earth walls of the west gable and the north-west corner of the building have collapsed.
- The wall is starting to disintegrate around the bottom of a cruck blade in the eastern compartment. Chunks of the wall have begun to fall away.
- A vertical crack has formed at the north-east corner and a large one is also present in the centre of the north elevation.
- The partition between the two compartments is pulling away from the adjacent walls and there are large cracks between them.
- The bond between the timber crucks and the earth wall has been lost in many places and there are cracks between the two materials.
- Much of the stone facing that might have once have been protecting the walls has been lost leaving the wall vulnerable. The bond between some stone and clay walling has been lost.



The south-east elevation. The saplings that were growing on the south elevation have been cut back but are showing signs of regrowth.



The east and west gable ends

- The exposed earth wall is suffering severely from erosion which is disintegrating the very substance of the building. The wall is suffering at both the wallheads and where it sits on the stone footings. Wider areas of erosion have been formed at certain weak and vulnerable points.
- There is evidence of rat runs and, in the interior, smaller holes of mice, birds or some other small animals, possibly bees.
- There are a few members missing from the timber framing system and signs of intense insect infestation of the wood.

The causes of decay

Some causes of decay can be estimated as follows:

- The western gable is on the edge of a steep slope. Possibly some settlement has hastened the collapse of this wall and the north-west corner.
- Ivies, mosses and lichens are growing on and through the fabric of the walling. Ivies can create and exacerbate cracking and even small lichens and algal growth can penetrate the wall and disturb the structure of the clay itself.²⁶ Vegetation can trap moisture against the wall.
- The corrugated metal roof is not adequately keeping the rain out, nor is it disposing the rainwater sufficiently far away from the building. As there are no gutters or down pipes the metal roof sheds the water down the face of the walls. The overhang is not sufficient for it to prevent water from hitting the face of the earth. This is causing erosion at a high level on the walls. Possibly the fact that the roof is now of metal and not of thatch means that the rain is shed quickly, subjecting the walls to a large amount of runoff in a short period of time instead of dispersing it more gradually. It also allows the water to land on the ground too close to the footings. The absence of a roof overhang at the eastern gable has caused badly damaged wallheads where rain can penetrate easily.
- When the barn was first built moisture rising from the ground was probably not a problem as the building is on a high well-drained site and the stone plinth was no doubt sufficiently high. Now, however, the effectiveness of the plinth has been reduced. The ground level in some areas has been raised so that moisture has no chance to evaporate. Consequently the earth walls at low level are getting damp and eroding. In other areas the plinth appears to have been removed to be replaced by the stone facing. The problem is exacerbated by excessive rain runoff accumulating at the footings.
- There is no protective covering on the walls. The stone facing has largely gone and although it is uncertain as to whether the walls were

ever rendered, the fact that they are not is certainly hastening their decline. Rain and wind are able to work on the earth walls unhindered.

- Because the timber crucks have been allowed to decay (they are showing signs of rot and insect infestation) the framework for the entire building is at risk. As parts of the frame are lost, and as other parts move, the walls themselves are prone to further cracking. The wooden collar in the east gable is losing support from the wall below. Resulting movement of the ridgebeam will cause cracking in other parts of the wall.
- Water getting trapped behind the stone facing has increased the rate of erosion.
- The straw in the earth wall attracts rodents and insects hastening the process of decay.
- Tree growth right up against the building on the southern elevation is probably undermining the footings. Although there are not considerable signs of settlement and cracking it is only a question of time before these start to appear.

Once an earth buildings starts to decay the process can be rapid and complete. Essentially it disintegrates and the very material of its construction washes away and returns to the ground from which it came. The

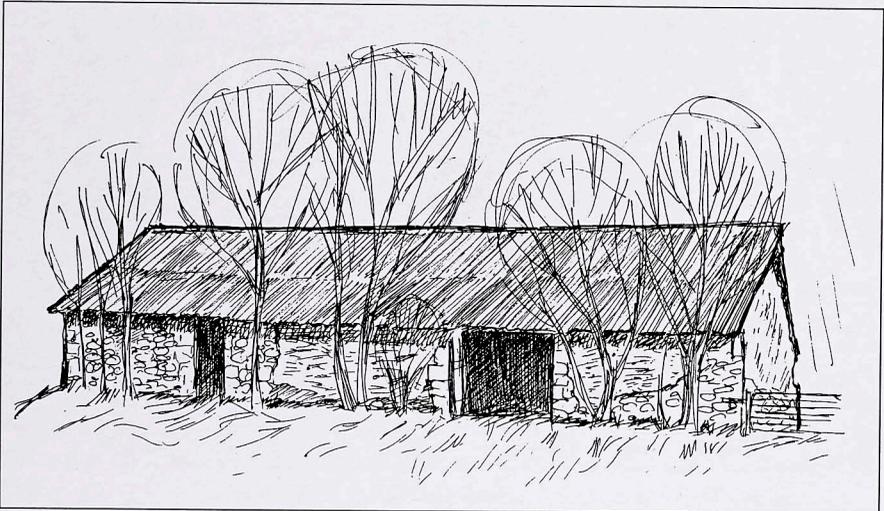


New damage (formed since 2001) at the centre crack on the south elevation

consequence of decay in Priorslynn Barn is that in a few years this building will cease to exist. Like the west gable, the walls will collapse into the ground. It is surprising that the building has survived for as long as it has but continued neglect has an inevitable outcome.

Additional note

This article originally formed part of a technical paper for the Scottish Centre for Conservation Studies at the Edinburgh College of Art and was written in the winter of 2000-1. A visit to the barn again in November 2003 found that the saplings growing against the south elevation, and which were of concern to the continued life of the building, had been cut back. Some of them were, however, showing signs of returning to life. Since 2001 a section of the south elevation, at the position of the centre cruck which is at the internal dividing wall, is starting to collapse and a large amount of the clay walling has already disappeared. It could be concluded that the structural damage to the wall caused by the growth of the saplings so close to the building is already starting to manifest itself.



Notes and references

- ¹ J. R. Harrison, 'Some Clay Dabbins in Cumberland: Their Construction and Form. Part I', *Transactions of the Ancient Monuments Society*, n.s., v. 33, (1989), p 99
- ² See James Logan Mack, *The Border Line: Solway Firth to the North Sea*, (London, 1924), pp 87-90, who writes of these lands that a proclamation was issued in 1551 by the wardens of both countries stating that 'all Englishmen and Scottishmen, after this proclamation made, are and shall be free to rob, burn, slay, murder and destroy all and every such person or persons, their bodies, buildings, goods and cattle as do remain or shall inhabit upon any part of the said Debatable Land without any redress to be made for the same.' The area became a refuge for criminals and, although Canonbie eventually was assigned to Scotland in 1552, the raiding continued.
- ³ Harrison, 'Some Clay Dabbins...Part I', p 116
- ⁴ See notes 16 and 17
- ⁵ It is not known when this type of construction came into practice but R.W. Brunskill has recorded a building dating from 1672 in his study on clay houses in Cumberland and this method of building would have been prevalent before that. See R. W. Brunskill, 'The Clay Houses of Cumberland', *Transactions of the Ancient Monuments Society*, n.s., v. 10 (1962) p 69
- ⁶ Harrison, 'Some Clay Dabbins...Part I', p 116
- ⁷ John Warren, *Conservation of Earth Structures* (Oxford, 1999), p xi
- ⁸ John McCann, 'Is Clay Lump a Traditional Material?', *Vernacular Architecture*, v. 18 (1987) p 3
- ⁹ Bruce Walker and Christopher McGregor, *Earth Structures and Construction in Scotland: A Guide to the Recognition and Conservation of Earth Technology in Scottish Buildings* (Edinburgh, 1996), p 48
- ¹⁰ R. W. Brunskill, 'The Clay Houses of Cumberland', *Transactions of the Ancient Monuments Society*, v. 10 (1962), p 60
- ¹¹ Conversation with Geoffrey Stell (January 2001)
- ¹² Geoffrey Stell, 'two Cruck-framed Buildings in Dumfriesshire' *Transactions of the Dumfries and Galloway Natural History Society*, 3rd s., v. 49, (1971-2), p 48
- ¹³ J.R. Harrison, 'The Mud Wall in England at the close of the Vernacular Era', *Transactions of the Ancient Monuments Society*, n. s., v. 28 (1984), p 171 (note 1)
- ¹⁴ J.R Harrison in 'Some Clay Dabbins ...Part I' writes: 'The thin clay wall-course is found in other parts of Britain and it is said that continuous construction was also practised in Devon. But only in Cumberland and Dumfriesshire is a connection between the two so explicit; only in these two areas is the thin "bed" tied to quick building by the historical record.' p 116.

- ¹⁵ J.R. Harrison , 'Some Clay Dabbins...Part I', p 113
- ¹⁶ Quoted by Mack, *The Border Line*, p 110
- ¹⁷ *Statistical Account of Scotland 1791-9*, ed. John Sinclair (Edinburgh, 1791-9), v. II, p 22
- ¹⁸ Harrison, 'The Mud Wall in England . . .', p 155
- ¹⁹ Gordon Pearson, *Conservation of Clay and Chalk Buildings*, (London, 1992), p 5
- ²⁰ Harrison, 'The Mud Wall in England . . .', p 157
- ²¹ *Ibid.* p 170
- ²² Harrison, 'Some Clay Dabbins...Part I', p 109
- ²³ Conversation with former tenant farmer, Mr Derek Foy (January, 2001)
- ²⁴ Stell, 'Two Cruck-framed Buildings . . .', p 44
- ²⁵ Mr Foy believes that the stone facing on the walls of the barn might have been put on in the middle of the 19th century. Before the farm was purchased by the Buccleugh Estate it was owned by a man who carried out a number of changes to the farm including the planting of ornamental gardens, as can be seen on the OS maps of the period, and the building of a dam or pond near the barn, and it is possible that he faced the barn in stone. However this suggestion, it must be stressed, is conjectural. (From a conversation in January, 2001)
- ²⁶ Warren, p 82

Bibliography

- Alcock, N.W. *Cruck Construction: An Introduction and Catalogue* (CBA Research Report no. 42) London, 1981
- Ashurst, John and Nicola. *Practical Building Conservation, Volume 2, Brick Terracotta and Earth*. (English Heritage Technical Handbook) Aldershot, 1988
- Brunskill, R.W. *Timber Building in Britain*. London, 1985
- Brunskill, R.W. 'The Clay Houses of Cumberland', *Transactions of the Ancient Monuments Society*. n.s., v. 10 (1962) 57-80
- Brunskill, R.W. *Vernacular Architecture of the Lake Counties*. London, 1974
- English Heritage Research Transactions, *Earth: The Conservation and Repair of Bowhill, Exeter: Working with Cob*, London, 1999
- Fenton, Alexander. 'Clay Building and Clay Thatch in Scotland', *Ulster Folk-Life*. v.15-16, 1970, 28-51
- Harrison, J. R. 'Some Clay Dabbins in Cumberland: Their Construction and Form. Part I', *Transactions of the Ancient Monuments Society*. n.s., v. 33 (1989) 97-151
- Harrison, J. R. 'Some Clay Dabbins in Cumberland: Their Construction and Form. Part II', *Transactions of the Ancient Monuments Society*. n.s., v. 35(1991) 29-88

- Harrison, J. R. 'The Mud Wall in England at the Close of the Vernacular Era', *Transactions of the Ancient Monuments Society*. n.s., v. 28 (1984) 154-74
- Innocent, C. F. *The Development of English Building Construction*, Cambridge, 1916
- Mack, James Logan. *The Border Line: Solway Firth to the North Sea*, London, 1924
- MacKenzie, W. Mackay. 'Clay Castle Building in Scotland', *Proceedings of the Scottish Antiquaries Society*. v. 68 (1933-4) 117-27
- McCann, John. 'Is Clay Lump a Traditional Building Material?', *Vernacular Architecture*. v. 18 (1987) 1-16
- Pearson, Gordon T. *Conservation of Clay and Chalk Buildings*. London, 1992
- Ridout, Brian. *Timber Decay in Buildings: The Conservation Approach to Treatment*, London and New York, 2000
- Royal Commission on the Ancient and Historical Monuments of Scotland. *Eastern Dumfriesshire: an Archaeological Landscape*, Edinburgh, 1997
- Statistical Account of Scotland 1791-99*. ed. John Sinclair, Edinburgh, 1791-9
- Stell, Geoffrey. 'Two Cruck-framed Buildings in Dumfriesshire', *Transactions of the Dumfries and Galloway Natural History and Antiquarian Society*, 3rd s., v. 49 (1971-2) 39-48
- Stell, Geoffrey. *Exploring Scotland's Heritage: Dumfries and Galloway*, Edinburgh, 1986
- Walker, Bruce and Christopher McGregor. *Earth Structures Construction in Scotland: A Guide to the Recognition and Conservation of Earth Technology in Scottish Building*. (Historic Scotland Technical Advice Note 6), Edinburgh, 1996
- Walker, Bruce. *Clay Building in North-East Scotland* (SVBWG) Edinburgh and Dundee, 1977
- Warren, John. *Conservation of Earth Structures*. Oxford, 1999
- Williams-Ellis, Clough. *Building in Cob, Pise and Stabilised Earth*. London, 1916

THE PANTILE EXPERIENCE

Bill Millan

One of the charms of Bathgate's Bennie Museum in West Lothian is its roof of original pantiles. These, in no small measure, attracted me to the building as I began to realise its potential. When the idea of turning 9-11 Mansfield Street into a museum became a feasible project I was adamant that these tiles would be an essential part of the restoration.*

The first task in the restoration of the building was to get the tiles off the roof. In the case of the front of the building this had to be accomplished in as short a time as possible, in order to clear the road-side slope. It was done in a morning at the rate of one tile per second, and these were immediately loaded onto a lorry (diverted from Council duties). Miraculously very few tiles were damaged and the rear roof was de-tiled at a more leisurely pace.

Next the tiles required to be cleaned of visible grime and invisible spores of dry rot which infested the roof timbers at that time. Since 2379

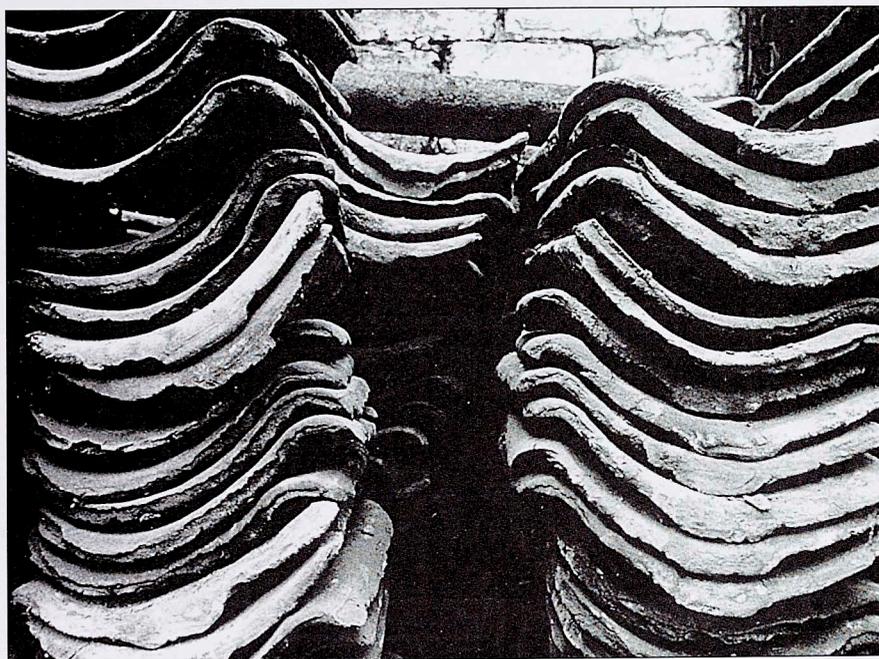


The roof before restoration

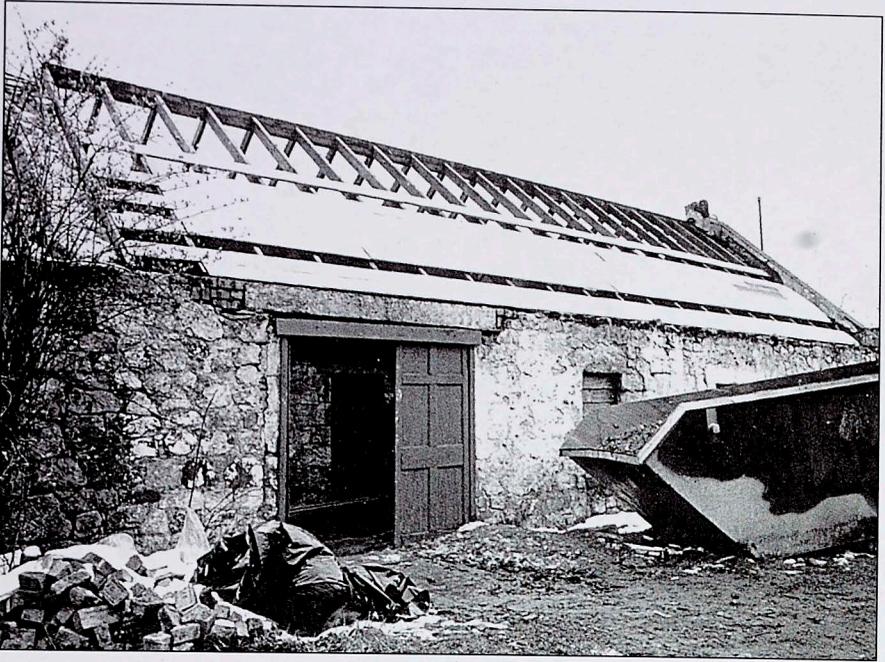
* For a full description of 9-11 Mansfield Street, see *VB 26* (2002)



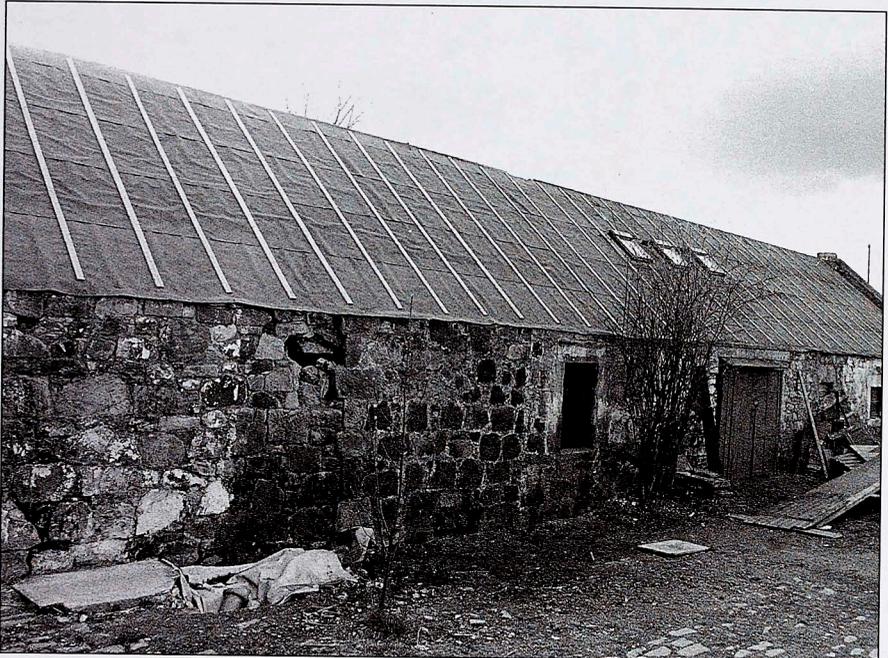
Rear of roof showing part of the structure used to remove the tiles



Stacked tiles



Sarking



Vapour barrier

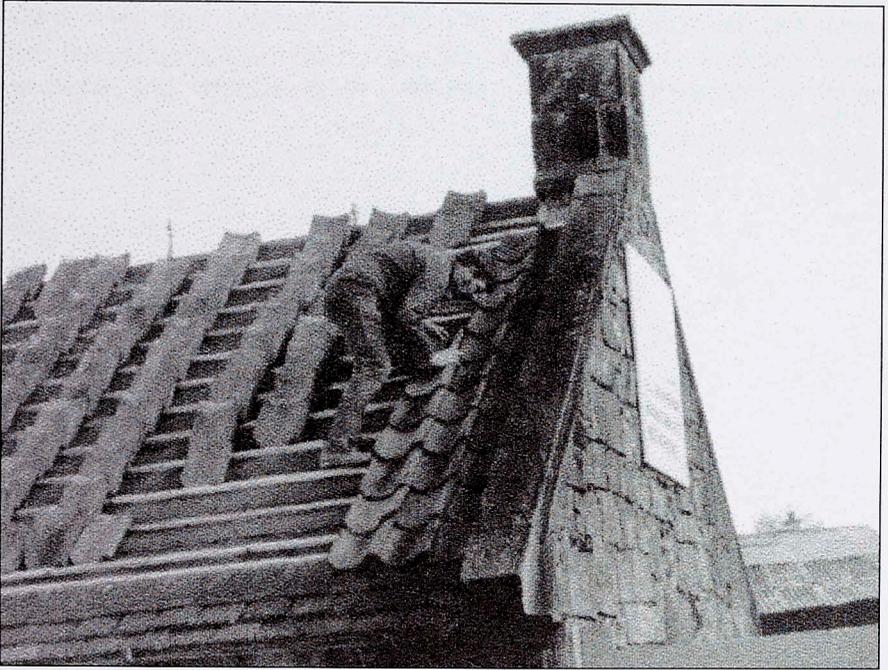
tiles required this treatment, the job added up to a great deal of people time. During the early days of the project I had kept the local schools informed of its progress by giving talks and even taking pupils into the roofless edifice. Now I wrote to the various head teachers and put the idea to them that the pupils of P6 and P7 could play an active part in the restoration of the town's museum by each cleaning a tile; for this 'undoubted' privilege each pupil would be allowed to print his or her name and the date on the underside of the cleaned tile in indelible felt pen. Youth groups such as the Guides and the Girls' Guildry also cleaned batches of tiles, and the local Scout Troop did, 75 to mark the 75th Anniversary of Scouting. Their leaders organised the distribution and collection of the batches.

The cleaned tiles were now sorted into two categories: unblemished perfect tiles for the roof facing the street (where they would be seen) and the less perfect but sound for the rear of the building. At last, with the professionalism of the tiler's trade, we stacked the tiles neatly on the battens ready for laying.

The one job I had failed to persuade anyone to take on was the actual laying of the tiles. It seemed that no-one could lay antique tiles, so I took on the job together with my team of volunteers. First three horizontal rows of relieving slates were laid the full length of the roof, at the bottom. Then the thirteen tiles of the first vertical row were hung on the battens and fitted snugly together from the bottom to the top against the south skew of the west-facing roof. It was when the second vertical row was attempted that problems arose. In the initial row the second tile overlaps the first and so on,



Tiles stacked on the battens ready for laying

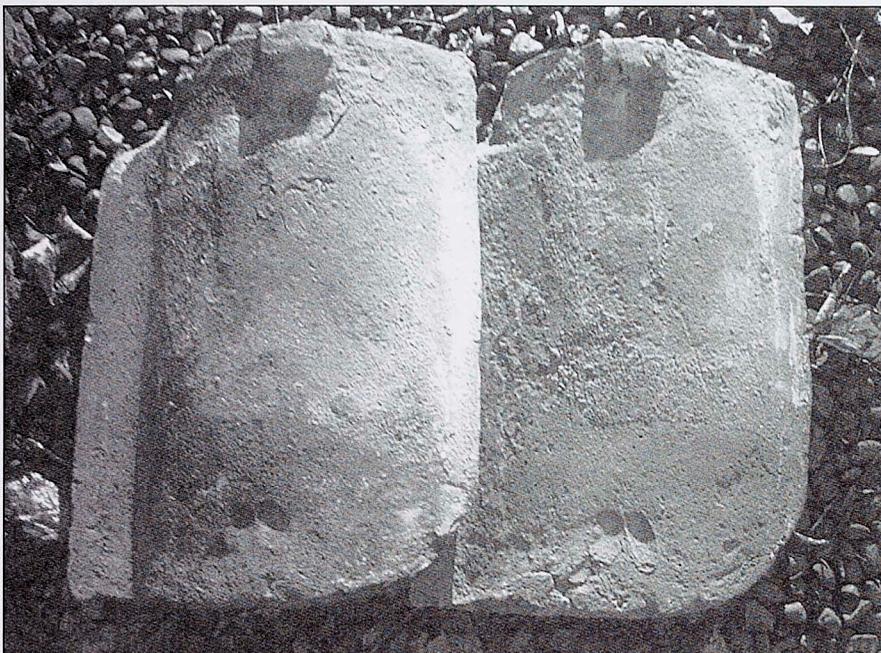


Ian McFall laying tiles with a little difficulty

each hanging from a batten. The second row worked the same way but with an added overlap onto its neighbour in the first row and having also to fit in with the neighbouring one above.

The attraction of these old tiles as compared with their modern counterparts is that they are not clones. Like living creatures their colours vary from pink through brown to black and they have subtle variations in size and shape - in fact, like us, each has a specific 'gene' I had yet to discover. This variation on a theme made for difficulty in laying. Soon our neat piles of tiles became a 'fair guddle' lying here there and everywhere as we picked out one tile after another, often trying six or seven before we got one to fit. At this rate it would take forever to lay over two thousand tiles.

Because the tiles had featured prominently in my perception of the museum I knew them well and had made much of the finger impressions left in them by their makers. I had always indulged the schoolchildren in what I called 'tactile history'. More than just handling an artefact or touching it, with the tiles they could actually put their fingers into the very spot occupied by ancient fingers. From holding children up to inaccessible parts of the museum's north gable so that they could touch field boulders that had not been handled since the day they were laid, I graduated to getting them to put their fingertips into the actual impressions left in the soft unfired tile. I tried



Tiles with fingerprints at the base

to work out which fingers made the marks and get the children to handle the tiles accordingly. So, the day I sat down perplexed and bewildered by the tile-laying difficulties, these finger impressions were to loom large in the solution of the problem.

At the back of each tile there is a 'nib' - a projection possibly stuck on while the tile was still 'green' softish clay. This nib acts as a hook for hanging the tile on the batten. One difference between pantiles which is not immediately obvious is that the nib at the back can vary in all its dimensions from one tile to another, while at the front the tiles may seem identical. Obviously the nib determined the length of the hang; a narrow nib meant that the tile would hang further down than one with a broad nib right next to it, causing a discrepancy in the alignment. Unbelievably, therein lay the simple solution to the fitting problem, and the tile-laying was into its tenth day before I worked it out.

I set about arranging the tiles in terms of nib size and soon, according to this regime, had thirteen rows of tiles which, I concluded, were elements of the production of thirteen different tile makers. At the time of writing I still have not seen the kind of jig that would be used but I imagine that the tile proper was made on a standard jig which would give uniformity of shape throughout production. But I believe the nib was left to free-hand work, hence the variation. While my presumption of how tiles were produced is pure conjecture and could be corrected at any time, it goes without saying that when I had thirty or forty tiles with the same nib style I had much less difficulty in fitting them together. There were a few rogue tiles which did not fit into any of my categories, mainly because of damaged or distorted nibs; how to deal with them? The answer lay in the tile itself. If the tiles in row one of my settings with the fat nibs were the work of one person he or she would have a specific handling technique. Sure enough when I checked row one, all the finger impressions were of identical pattern. So it was in row two, but with a different finger pattern matching this row's nib style: back to the rogue pile. Like a diagram of genes, the finger dabs told me to which family each unplaced tile belonged. So the day was won.

At the time of my tile working intensity, I sought information about tile making in Scotland but in vain. Graham J. Douglas of the Department of History, Scottish Industrial Archaeology Department of Napier College at that time, who was researching clay-mines and brick-works in Scotland in 1982, was similarly unsuccessful. A Dutch friend, Dik Mooij, translated a section of a book on tile-making in the Netherlands for me but frustratingly the *modus operandi* of my tile production did not appear in the piece. So by scrutinising a tile from every direction and with some knowledge of working with clay I have tried to imagine how the tile would be produced. I see a workforce of people laying slabs of clay rolled out to a predetermined size

and thickness onto a former shaped with the bevel of a tile. At this point the size and thickness would take into account the fact that clay shrinks about one-ninth from wet to fired state. The tiles exhibit tell-tale scores of grit being dragged in one direction possibly by a slide or sponge drawn across the clay on the former to ensure a smooth upper surface. The tile would be lifted while still impressionable, receiving its signature of fingerprints. At this stage or when the 'green' tile was leather-hard the nib might be added. However it is hard to see any of the joins which



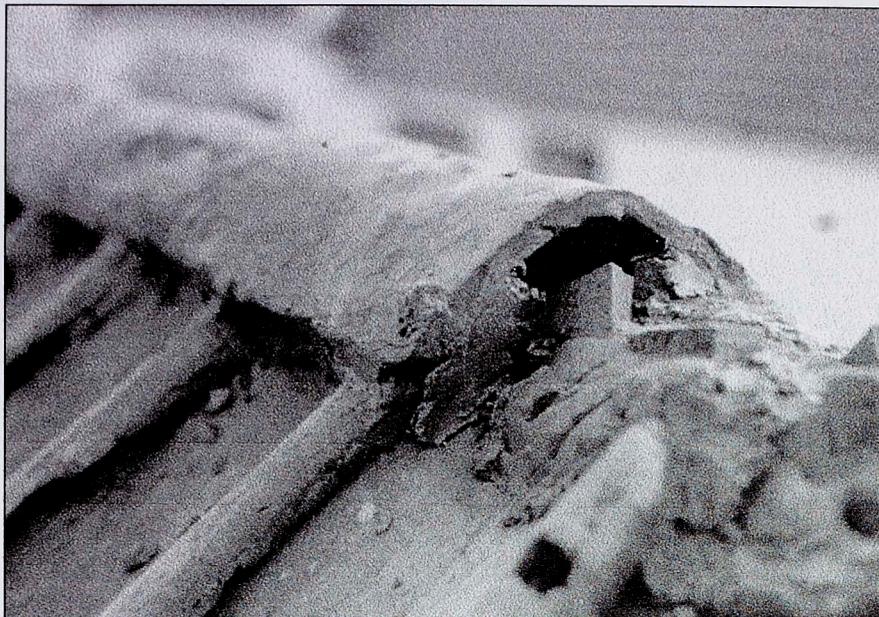
Nib variations

can occur when a separate piece of clay is welded to a clay object in the making with slip (liquid clay). Whatever the case, the variation in nib shape and size suggests that this part of the tile was created by each individual worker or by the persons who made the jigs.

Once the tiles were set out by nib size, the tile-laying was much quicker. However as one nib type was used up the transition to the next engaged my sculpting skills. The damage marks on the tiles at first reckoned to be due to frost and weathering, turned out, I believe, to be the work of the ancient tiler who had come across the same slight deviation in alignment as I had done a



For part of the time when the ridge was being fitted into place the weather was so warm that work could only be carried out in the early morning and in the evening. Throughout the day the job had to be covered with water-soaked pack-sheets.



The cat's paw saddle-back

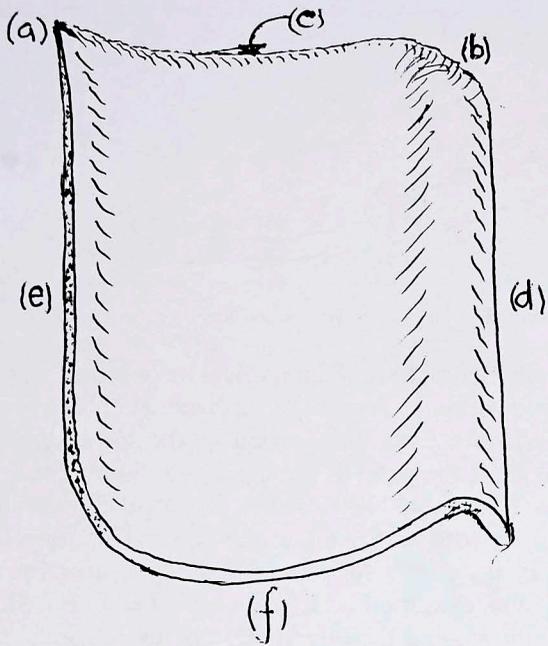
century and a half later. These chippings enabled the tile to fit in with its neighbour.

When I visited my Dutch friend's house in Zaandam for the last time before it was demolished I collected two of his pantiles and brought them home to compare with the Bathgate specimens. They were exactly the same even down to sporting finger impressions.

One of the last tiles I laid was a saddle-back ridge tile and on it were impressions of a cat's paws.

The pantiles used to re-roof the museum in Bathgate came from at least three sources: the original tiles augmented by batches from two local farms. All the tiles, which are made of clay that fires to a terracotta red, conform to a basic pantile shape. However within the general confines of this, subtle variations are to be found. These occur for a variety of reasons, such as, distortion in the firing (accounting for differing curvature of profile), individual workshops working with templates produced from a master template, leading to slight differences, and the individuals employed in the actual tile-making (accounting for nib variation).

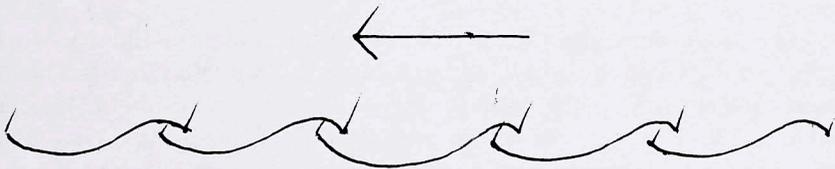
The following analysis is based on my own observations and the names are my own descriptive selection. At the top there is a point (a), a shoulder (b) and a nib (c) at the back. A curved lip runs from the shoulder down the length of the right side (d). A plain tilted edge runs the full length of the left side from the point (e). The S-shaped curved profile which runs the breadth



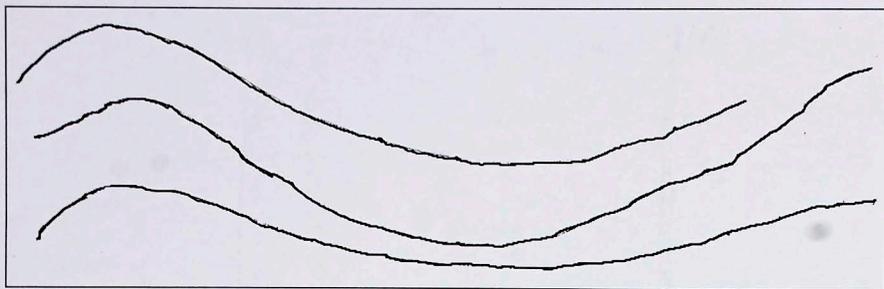
The geography of a tile



Overlap at 'S'-curved profile created during smoothing work



Tile configurations – laid right to left



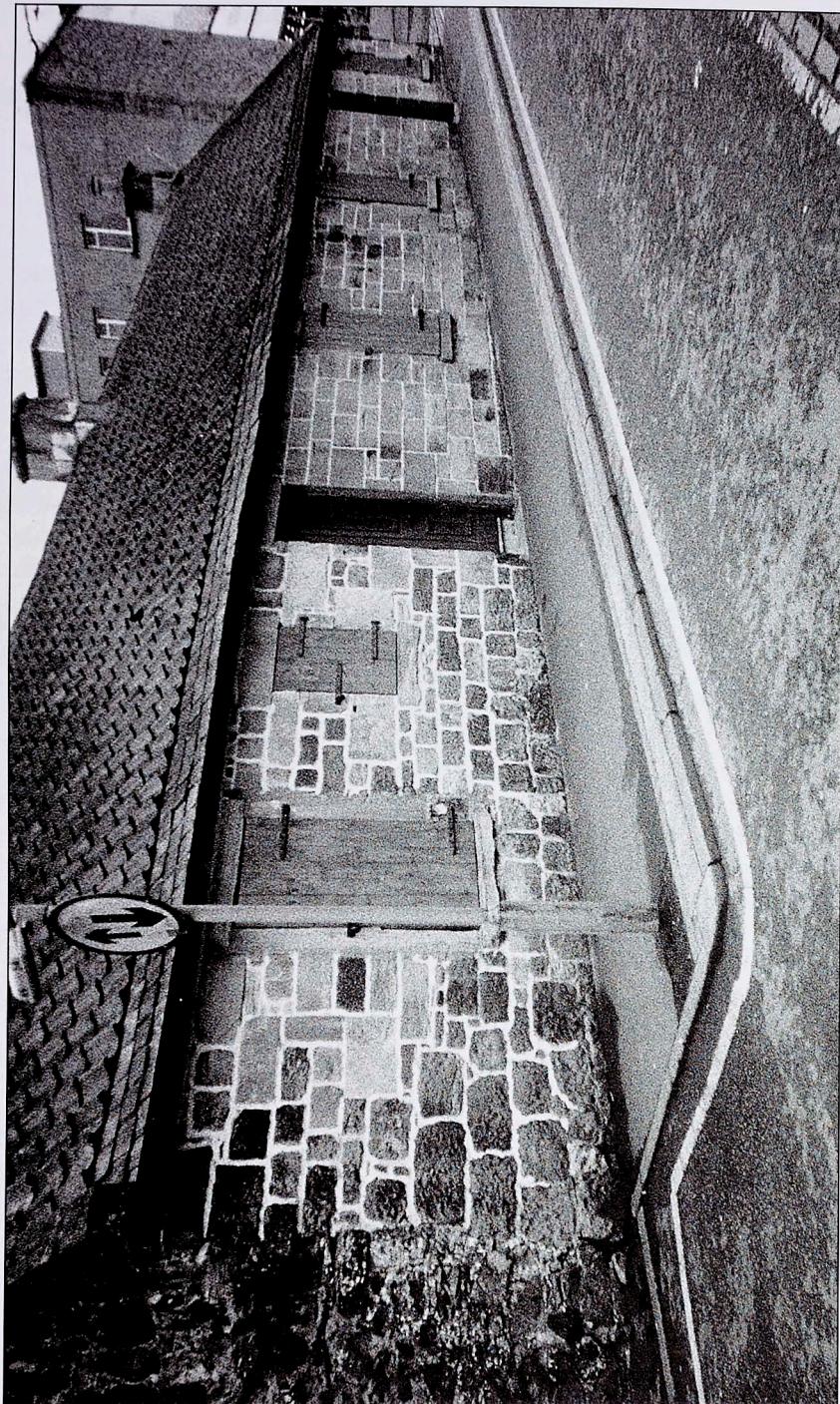
Variations in the 'S'-curved profile – taken from actual tiles

of the tile is clearly defined at the base (f). The 'weather' surface betrays a good deal of handworking. Along the top from shoulder to point there is evidence of a horizontal smoothing action on the soft clay. This is possibly done with a sponge or the palm of the hand and thumb, for long drawn out fingerprint smears are frequently evident in surprising detail. All this is probably to do with work on the nib at the back. The more I have studied the nib, the more it appears to be an integral piece of the original slab. Nevertheless, by whatever method it was established in the tile, the marked variations in the nib suggest the intervention of an individual tile-maker.

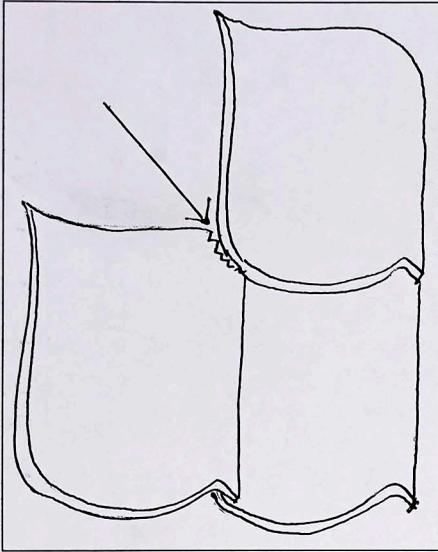
The top surface also shows vertical smears with grit particles dragged in the direction top to bottom. At the bottom and plain tilted edges tiny overhangs of clay have been sloughed down in this action. This accidental characteristic is the result of a probable process to smooth the working surface of the tile the better to shed water and, while not a design feature it does, in my opinion, help the water to drip from one tile to another without capillary action down the edge and up the underside. Happy accidents like this are often what makes devices surprisingly successful.

The underside is rough in texture compared with the front, possibly because the slab was laid on a sprinkling of sand. There are wrinkles and impressions where bits and bobs of clay left over from previous operations have ended up pressed into the new slab. Evidence of foreign bodies appear on this surface but obviously not so much as to have disrupted the integrity of the slab, and of course there are the tell-tale finger impressions not to mention the nib. The latter is on average three-eighths of an inch deep though I reckon only $\frac{1}{4}$ inch (6mm) of that is effective in the hanging process.

The dimensions of a tile, give or take $\frac{1}{4}$ to $\frac{1}{2}$ inch (6-12mm), are 15 inches by $10\frac{1}{4}$ inches by on average $\frac{1}{2}$ inch thick (380x260x12mm). The tile battens are spaced on the roof to give a tile overlap of about 4 inches (100mm). The right side curved lip overlaps the left plain tilted edge by at least one inch. This overlapping configuration is achieved by laying the tiles from right to left and means that each tile is held down at the top and left



The end result



Chipping at shoulder to aid fitting

side in the simplest way possible, obviating the use of nails. (In fact there is no provision of nail holes in a pantile, although there is in the saddleback ridge tile.) The area of each tile thereby open to direct weather is 11 inches vertically by 9 inches horizontally (280x230mm).

The curved profiles of the tiles throughout a batch are not consistent, probably due to distortion in the firing as well as the other reasons already stated. They are close enough to give good cover, albeit not exactly 'airtight'. This has the advantage of ventilating the area around each tile and allowing any lingering rainwater to evaporate (another happy accident). The

The chipped shoulder area, a feature of countless Bennie tiles, is the result of fitting problems (not always associated with the nib), being corrected to accommodate the bottom left upward tilt of the trough.

This last mentioned feature, the trough, is a master-stroke in water-shedding design. I recall a violent downpour in Zaandam, Holland when I witnessed the efficacy of the pantile, as a roof disgorged spouts of water down the centres of its numerous mini-troughs.

All in all the pantile is a fairly rough piece of handiwork. It hides none of its traumas in the making, fashioned out of Mother Earth, lifted and laid with inarticulate hands well enough versed in its simple construction to repetitively slough with a smoothing thumb here, a hand there and with a swiftness that comes of long experience. Its value lay in the speed of its production rather than the perfection of individual appearance. Yet for all its vulgar simplicity, pawk-marks and dimensional idiosyncrasies – it works. That, along with its tenacity for survival, has meant that it will continue to be an enduring feature of Bennie Museum, protecting the collection from one of Nature's most destructive elements – water.

REVIEWS

Edited by Veronica Fraser

The Archaeology of Mills and Milling

Martin Watts. Stroud. Tempus. 2002. 160pp. £16.99. 0-7524-1966-8.

This fascinating book addresses the history of the machinery which contributes towards the production of one of Man's staples – bread. It looks at the development of milling, beginning with its most basic form in the quern, and continuing through to the multiple mills of later centuries, looking at the details of many different types of a structure which would have operated continuously in most significant settlements. Extensively and informatively illustrated, it can be read either for general information on the subject, or to analyse its aspects in greater detail. Essentially dealing with British mills, it refers to useful examples from other cultures, and presents a good proportion of examples from Scotland.

The book deals with mills and milling chronologically, beginning with a useful chapter on the history of the study of mills. Antiquarian writers were attracted by these reminders of times past, with Walter Scott and James Boswell commenting on the mills and querns of Scotland. Mill sites also attracted early archaeologists, though sometimes unintentionally, as their mounded remains were often mistaken for graves or ritual sites. Further chapters deal with the periods of important technological developments, noting the contemporary treatises and pamphlets that helped to spread new knowledge, and the book finishes with an overview of the recording of mills and milling machinery.

As well as dealing with the development of the more complex mills, such as water and windmills, which are essentially combinations of machinery and buildings, Watts examines the history of the much more basic, hand-operated quern. These have been used for grinding for ten thousand years, and the continuity of their use is emphasised by the reproduction of a photograph showing a rotary quern in use in Shetland, c.1910-20. Reference is also made to the late use of the quern in the Western Isles and Ireland.

The human power used for querns was ultimately replaced by water or animal power, both of which were introduced to Britain by the Romans. The development of watermills is linked to the management of water to control the irrigation and drainage of land, with the earliest known mills dating from before 240BC. Watermills began to spread throughout the Roman Empire during the second century AD. Some subsequent studies of the process have deemed the horizontal waterwheel, which originated in Byzantium, an

instrument of peasant culture, and therefore inferior to the Alexandrian developed vertical wheel. However, Watts points out that the horizontal mill requires a level of sophistication in its construction and operation. In Scotland, there were many survivors of the horizontal mill, linked with private or family use, until recent times; two such mills on Shetland are illustrated, with the restored mill at South Voe Croft Museum serving as the basis for a detailed section of a typical example.

Windmills first appeared in England in the late twelfth century, but their use is not recorded in Scotland until the sixteenth century. Though they were never numerous, there are some survivals, including the tower mill situated on a mound at Monkton, Ayrshire.

Mills are complex buildings, and not all of their components can survive to be studied; completely wooden waterwheels, submitted to constant soaking, are rare survivals, though from the eighteenth century, cast and wrought iron were used to lengthen their lives. Water and windmills were often destroyed by the elements harnessed to power them, and other buildings were altered or converted over the years. For anyone wishing to learn more about the substantial number of buildings and remains that do survive, and to discover the complexities of how mills were powered and operated, this book is essential reading.

Argyll and the Islands: An Illustrated Architectural Guide

Frank Arneil Walker. Edinburgh. The Rutland Press. 2003. 224pp. £10.95. 1-873-190-522.

A new volume in the RIAS series of illustrated architectural guides is always welcome (this is the 27th); they are essential reading, either for the researcher into an area, or the casual visitor, as the questions of 'Who built it, and when?' are answered, and in addition, useful background information is given. Lavishly illustrated, *Argyll and the Islands* is no exception, as Frank Arneil Walker explores a geographically vast, and architecturally diverse, region. This is an area where the land, and perhaps even more so, the water, has shaped the nature of the buildings.

As befits its mostly rural settlement, Argyll is particularly rewarding for the student of vernacular buildings. As well as untouched survivors of previous centuries, there are also buildings which have been restored in more recent times; Ian G Lindsay and Robert Lorimer feature prominently as architects sympathetically working on buildings of the past, and being inspired by traditional styles. Lindsay is synonymous with the restoration of historic buildings in Inveraray and Iona, and also began restoration of Breacachadh Castle in 1961, as well as building a power station in Lochgair. Lorimer's best known works in Argyll are Ardkinglas Castle (1906-8) and the restoration of Dunderave Castle (1911-12), both carried out for Sir

Andrew Noble, and he also worked in the Scottish Vernacular style at Stronachullin Lodge (1894-6). More recently, other architects have employed a vernacular style, for example, Morris & Steedman at the Gigha Hotel (1977-8), Page & Park at the Gardener's House, Arduaine Gardens (1992-3), and Stephen Hunter at Barnluasgan in 1997, in the form of a cruck-framed shelter with larch shingles on the roof.

However, it is the buildings which inspired these architects for which Argyll is best known, and on which this book provides a wealth of information. Castles feature prominently, from Castle Sween, dating from the twelfth century and probably the earliest surviving stone castle in the country, through to New Castle Lachlan, which was remodelled in 1903 in the Baronial style. More modest dwellings feature throughout, with an early eighteenth-century tacksman's house at Crinan Ferry; still thatched but derelict cottages at Sorisdale, Coll; and the remains of the cleared village at Inivea, Mull, beside Calgary from where so many left for Canada. This is the way of life which can be explored at Auchindrain township, dating from between 1770 and 1840, now a museum of country life, with rubble buildings, some rethatched, others with corrugated iron roofs. One end of the agricultural spectrum is represented at Keills township, Jura, a cluster of small dwellings and their byres, while the other can be seen at Robert Mylne's grand steading at Maam (1787-90), which typifies improvements carried out by the 5th Duke of Argyll, and the Inveraray estate offices at Cherry Park (1759-72).

One of the most striking aspects to emerge from this book is the wealth of small to medium scale industrial buildings and structures in Argyll. Some of these are associated with transportation, such as the Crinan Canal, built to assist in the trade of timber, kelp, grain and slate, which was begun in 1794, and improved by Thomas Telford in 1816 and 1817. There are magnificent Stevenson lighthouses at Skerryvore (1838-44), with its associated housing at Hynish, Tiree; at Rinns of Islay (1824), and Ruvaal (1857-9). Slateworkings also feature, particularly at Ellenabeich and Easdale, on Seil, where as well as the slate jetties, paths and spoil heaps, there are the slate workers' cottages, in parallel rows at Ellenabeich, and in a square at Easdale. Such housing can also be seen at Balvicar, also on Seil, and Cullipool and Toberonochy on Luing, and is a reminder of a once thriving industry, which provided work for an area, and also material for buildings throughout Scotland. Among the most visually striking reminders of the industrial past are the remains of the early nineteenth-century tileworks at Foreland, Islay, with its lines of stone pillars, and, more substantially, the impressive remains of the ironworks at Bonawe, now open to the public. It operated from 1753 to 1876, utilising the sea for transport, and water from the River Awe for power. It too has its workers' housing in the form of cottages and tenements, with the manager's house being of more

classical design. All these buildings are associated with lost industries, but the distinctive nineteenth-century distilleries of Mull, Jura and Islay house a process which continues to flourish.

From Corrib to Cultra: Folklife Essays in Honour of Alan Gailey

Ed. by Trefor M Owen. Belfast. Institute of Irish Studies. 2000. 256pp. £9.50. 0-85389-765-4.

This collection of varied papers is a tribute to Alan Gailey, who was instrumental in the development as a research centre of the Ulster Folk and Transport Museum at Cultra, County Down. The Museum, first planned in the early 1940s, and originally based in a fourth floor office in Belfast, was established at Cultra in 1961, a year after Alan Gailey, a graduate of Queen's University, Belfast, had been appointed as a research officer. He was therefore able to help shape the museum from the beginning, later as Director, until his retirement in 1996. His extremely wide range of interests, including vernacular buildings, diet, and folklore, is reflected in the seventeen papers of the book; three examples – wedding dresses, horse skulls and steamships – serve to demonstrate their diversity.

Several papers discuss the subject of vernacular buildings. Ross Noble looks at the creel houses of the Central Highlands, based on the reconstruction of a house at the Highland Folk Museum, Newtonmore, in 1997. The house, made of a frame of wood, covered with turf, and the settlement in which it stands, are based on the township at Raitts near Kingussie. The experience gained in the building of the house, using traditional and local methods and materials, has added to the knowledge of such structures. Evidence was taken from documentary sources and pictorial evidence, with the dwindling number of traditional craftsmen giving advice. It was a process of trial and error; it was found that the roof could be constructed before the wall, allowing for more sheltered work, and finding the most authentic, and reliable, thatching materials proved extremely difficult. However, once completed, and furnished with reference to the collections of the Highland Folk Museum, the house gives visitors an excellent experience of life in buildings such as this.

When studying the Highland Clearances of the late eighteenth and nineteenth centuries, very often consideration is given to the evidence of the cleared settlements. Instead, Bruce Walker and Christopher McGregor look at the sometimes very substantial structures associated with sheep-rearing, of which there are more than conventionally thought. Many of the buildings, for example woolbarns, essential for storing fleeces in good condition until they could be transported, have since been converted, and have not been recognised. Other structures included dikes; fanks, for holding and sorting

sheep; cots for protecting ewes and lambs; smearing houses where treatments were prepared; stells for shelter; and washing stages. Between 1984 and 1985, a study was made of woolbarns in Lochaber and the Sma' Isles by the Scottish Buildings Survey Group of the University of Dundee, under the direction of Bruce Walker. Twelve woolbarns are presented in this paper, with documentary evidence discussed, and a description given. One of them, at Achranich, Morvern, is a neo-Gothic structure which, when it was built in 1858, would have been one of the finest in its parish. Keppoch woolbarn, Kilmonivaig, was another grand building converted from a barracks for government troops in the mid-eighteenth century.

Robbie Hannan and Jonathan Bell look at a much more modest type of structure from County Donegal - the *bothóg*, a temporary dwelling traditionally constructed for shelter during summer grazing. Sheltered by a bank, and south facing, the *bothóg* was constructed of turf, with a heather thatch roof supported by purlins. The *bothóg* could either be large enough to accommodate a couple of animals if required, or could just be a shelter for one person. With additions such as a clay floor, a straw screen door, a basic chimney and windows made from tanned sheephide, the *bothóg* could last for years with maintenance. *Bothógaí* were last constructed in numbers during World War II, when they were used by turf cutters, though a few continued to be built into the late twentieth century.

One of the purposes of the Ulster Folk Museum is to preserve traditional buildings, and one of its finest achievements, examined by Philip Robinson, was the transportation and re-erection of a mid-nineteenth-century oat-milling complex from Ballymena, County Antrim, completed in 1997. The complex consists of a row of millers' houses, a kiln, a mill, and a grain store and stable, and surviving documents and family papers provided a background to the recreation of the world of the traditional miller. Fionnuala Carragher presents another of the Museum's buildings, a weaver's house, which was based on a derelict cottage in Ballyduggan, County Duggan. It was originally chosen as an example of a mud-built house, but as details emerged of its use, it was also used to present the living and working environment of the Irish weaver of the nineteenth century.

Two papers examine traditional diets; Alexander Fenton discusses the diet of the Scots over 300 years. General improvements are outlined from the eighteenth century when those suffering from scurvy, caused by lack of Vitamin C, were thought to be suffering from leprosy, and were therefore isolated. Patricia Lysaght focuses on Great Blasket Island, off County Kerry, which was inhabited from the eighteenth century until its evacuation in 1953. As an island it provides an interesting microcosm for study of a mainly self-sufficient population.

One thinks of Shetland as being most influenced by Scandinavia then by mainland Scotland, but Venetia Newall looks at the influence of Holland

on the islands. With links forged through sea trade over the centuries, Dutch influence was apparent in the islands in such aspects as dialect, place names, and lace knitting, with the entire population of Lerwick able to speak Dutch in 1800. In Lerwick, *lodberries*, concealed bays for unloading a ship's cargo, were thought to be associated with the Dutch trade.

It is not possible to outline all of the fascinating papers in this important book, but (its few typographical errors aside) it is a pleasure to recommend it.

Doocots of Stirlingshire

Alison Logie. Stirling. Stirling Council Libraries. 2003. 44pp. £3.50.
870542-50-9

Dumfries and Galloway Doocots

Kenneth McCrae. Available from B Smart, King Street, Castle Douglas. 2003. 32pp. £3.00.

Two recent publications illustrate the current interest in the subject of doocots. These fascinating buildings, seen in a field or as part of a steading complex, were once an important source of meat all year round. Some have now vanished or become derelict, others have been restored, or converted. All shed interesting light on past building and farming practices.

Alison Logie has studied the doocots of Stirlingshire. In a handsomely presented booklet, she introduces the building type and its different styles within Stirlingshire, and then presents the historic county's 25 doocots, in alphabetical order. Each has a colour photograph, and a brief note on location (and whether it is accessible), its appearance and condition. Finally, she uses documentary evidence to detail 36 now vanished doocots, a statistic which demonstrates the level of loss. One of the finest doocots to appear is the seventeenth-century Westquarter Doocot, restored by Historic Scotland, which is of a lectern type with crowsteps, and ball finials on its ridge. By contrast, Southfield House has a decorative doocot, probably dating from the nineteenth century, consisting of a small cot on top of a stone column.

The doocots of Dumfries and Galloway are introduced by Kenneth McCrae. After a brief note on the subject, 26 doocots are detailed, with a few lines giving a short description of each, and documentary evidence where available. Most are illustrated in black and white photographs, with a few, such as Wyseby, being presented in the form of informative survey drawings. Denbie is a fine example, restored with whitewashed walls, whereas Kirroughtree is ruinous.

Both of these publications are attractive introductions to the doocots of their respective areas.

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Scottish Vernacular Buildings Working Group

This Group was set up in 1972 to provide a focus for all those interested in Scotland's traditional buildings.

To some 'vernacular' may mean cottages, croft houses and farmsteads; to others its essence may be urban tenements or terraces, industrial watermills and smithies, or even the older traditions of tower-house buildings. All – and more besides – find a place in SVBWG.

The Group embraces those whose interests are centred on general settlement social patterns as well those who have a specialist interest in building techniques or function, or in traditional building crafts. The subject brings together architects, surveyors, archaeologists, historians, geographers, ethnologists and, above all, those who simply want to know how and why the traditional buildings of Scotland came to have such variety and character. And this refreshing blend of interests and attitudes is clearly evident in the Group's activities.

Members are invited to attend annual conferences held at different venues, mainly in Scotland, in the spring of each year. The 31st Conference, in 2003, was in Cromarty on the Black Isle, Easter Ross and the annual Autumn Meeting was at Anstruther in Fife.

Publications include *Vernacular Building*, an annual miscellany of articles issued free to members, and a series of Regional and Thematic works. For contributions to *VB28* please contact Susan Storrier, Editor *Vernacular Building*, c/o Veronica Fraser, RCAHMS, John Sinclair House, 16 Bernard Terrace, Edinburgh EH8 9NX or by e-mail to scjs@wanadoo.es. A preliminary letter or enquiry would be helpful, but please don't send original photographs or drawings in the first instance. Photocopies of these are useful at this early stage. Any text submitted should be as far as possible in the style of this volume. If typed it should be double spaced with wide margins, on one side of the paper only, and ideally accompanied by a floppy disk.

We also welcome publications for review. These should be sent to Veronica Fraser, Reviews Editor SVBWG, c/o RCAHMS at the address above.

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Printed by Highland Printers, Henderson Road, Inverness
ISSN: 0267-3088