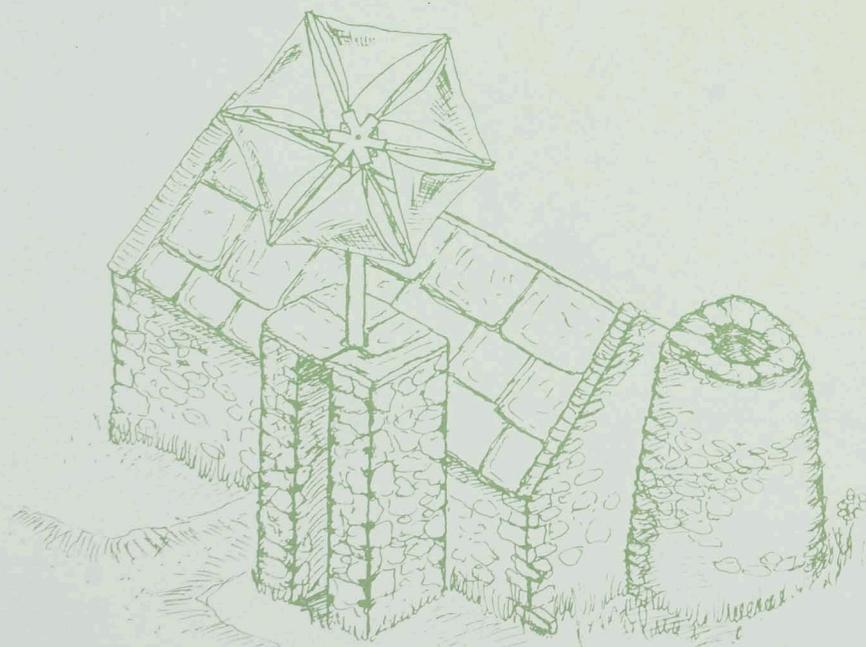


VERNACULAR BUILDING 12

Scottish Vernacular Buildings Working Group

1988



SANQUHAR, WESTRAX,
ORKNEY, G.J. DOUGLAS, 1988.

ISSN: 0267 - 3088

Edinburgh 1988

© as a collection, Scottish Vernacular Buildings Working Group;
Copyright in the individual contributions rests with their authors.

Cover: Sanquhar wind-engine, Westray, Orkney.
Drawn by Graham J Douglas.

~~WoodsLA~~

VERNACULAR BUILDING 12

Scottish Vernacular Buildings Working Group

1988

CONTENTS

Preface	2
Robin Callander Sheep Houses in Midlothian County.	3
Elizabeth Beaton Cruck Blade, Elgin, Moray.	14
Graham J Douglas Reminiscences of a Threshing Machine Maker in Easter Ross.	16
John G Harrison Fisher Row; an Investigation of a Seventeenth-Century Building Project from Accounts.	26
Graham J Douglas & Miles K Oglethorpe Orkney Wind-Engines: Drive for Threshing Machines.	33
Bruce Walker Lofted Open-Hall Farmhouses in Scotland: a Preliminary Statement.	45
Tam Ward The Elusive Scottish Bastle House.	50
Malcolm Bangor-Jones Two Early Eighteenth-Century Inventories of the Buildings at Coxtoun, Sutherland.	62
Judith Anderson Gleanings from Galloway Fieldwork.	68
Reviews	74
Contributors	77
SVBWG – How to join	79

PREFACE

The Scottish Vernacular Buildings Working Group was set up in 1972 to provide a focus for all those interested in the traditional buildings of Scotland.

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

The Group embraces those whose interests are centred on general settlement and social patterns, as well as those who have a specialised interest in building function, or in traditional building trades and 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 have such variety and character. The Group thrives on this refreshing blend of interests and attitudes, all of which are quite clearly evident in its activities.

Members of the Group are invited to attend annual conferences, held at different venues in Scotland each year - the most recent, in April 1988, was at Ayr and from 28 April to 1 May 1989 we shall be in Rosemarkie, Easter Ross. The meetings combine lectures and site-visits and are friendly, lively and informative.

The Group's publications include *Vernacular Building*, an annual miscellany of articles published free to members and to which members and interested readers are invited to contribute.

Articles, reports on work in progress and reviews for the next issue of *Vernacular Building* are now eagerly awaited and should be submitted to the editor by the end of June 1989 at the address below.

Dorothy Kidd
Acting Editor - SVBWG
National Museums of Scotland
York Buildings
1 Queen Street
Edinburgh EH2 1JD

SHEEP HOUSES IN MIDLOTHIAN COUNTY

Robin Callander

Introduction

When preparing a field survey of monuments in Midlothian the ruin of a square enclosure wall with a single entrance into a peristyle within was found, together with the grass-covered remains of apparently similar structures. The first edition Ordnance Survey map titled these 'Sheep House' and showed each as roofed around a central open court. As little appeared to be known about such structures further examination and fieldwork were carried out. This paper presents a digest of the findings to date.

Method

The first edition Ordnance Survey of 1852/3 showed a total of 25 such structures and a further two titled 'Sheep House' which were smaller and fully roofed. Not all of the 25 structures were titled 'Sheep House' and structures similarly shown but not so titled were therefore also examined. In addition, the sites on the second edition Ordnance Survey map of 1895, which showed a further 9 sheep houses, and on the county maps of the Sharp, Greenwood, and Fowler surveys of 1826 and 1828, which produced the earliest map evidence, were examined. The sites on these maps formed the basis for field work and to complement this and ascertain the period when these structures were constructed, extensive research was necessary, particularly as their form was similar to cattle courts which exist elsewhere.

History

At the end of the seventeenth century housing sheep at night was advocated in Scotland¹ and this was again recommended in the mid eighteenth century², but such houses appear to have been small and of no particular design.

Sheep husbandry changed during the era of agricultural improvements in the latter half of the eighteenth century. In Midlothian breeds were improved³ but some doubt about the success in high exposed places was expressed⁴ and the necessity for proper cover and shelter was stressed⁵.

In the early nineteenth century the benefits of shelter continued to be stressed, particularly of plantations and round stells – 'the primeval shelters invented by our forefathers', but including shelter 'procured by buildings, enclosing a square open

¹Donaldson, James, *Husbandry Anatomized or An enquiry into the present manner of toiling and manuring in Scotland* (Edinburgh, 1697/8), 99

²Maxwell, Robert, *The Practical Husbandman being a collection of Miscellaneous Papers on Husbandry* (Edinburgh, 1757), 240

³*Present State of the Husbandry in Scotland. Extracted from Reports made to the Commissioners of the annexed Estates and published by their authority*, vol. IV, part 2 (Edinburgh, 1783), 646

⁴*Ibid.*, vol. III, part 2, 362

⁵*The Scots Farmer, Or Select Essays on Agriculture adapted to the soil and Climate of Scotland* vol. 1 (Edinburgh, 1773), 504

area in the middle, furnished with shades on every side⁶. Heavy snow and loss of sheep in the winter of 1808–9 encouraged interest in sheep houses and there was much correspondence in *The Farmers Magazine* on their cost and construction, although it was said that there was not one in the whole of the south of Scotland⁷. Within a few years, however, the situation had changed and in 1814 descriptions and costs are given of several existing square and octagonal roofed structures, around central open courts.

A Treatise on Practical Store Farming published in 1822 recommended 'a plentiful supply of stells'⁸ which were easily erected and cheaper to build than sheep houses. Sheep breeds were also becoming hardier so there was less interest in sheep houses⁹. Concern at the effects of crowding which had earlier been expressed¹⁰ continued,¹¹ and probably contributed to a further decrease in the practice of sheep housing, although severe winters in the 1880s revived interest briefly¹².

Location

Of the 27 sheep houses shown on the first edition Ordnance Survey map of 1852–3 19 were located at an altitude above 1000' (305m), 5 being above 1100' (335m). The main concentrations were at 800'–1300' (244–396m) in the 1900 hectares between the Cakemuir Burn and Armet Water, where there were 10; at 800'–1100' (244–335m) in the 500 hectares either side of the Nethertoun Burn, where there were 5; and at 850'–1100' (259–335m) on the 2100 hectares along the foot of the Moorfoots, south-west of Middleton Moor, where there were 6.

After 1853 a further 9 sheep houses were built and were similarly located but the second edition Ordnance Survey map of 1895 showed a considerable contraction, the total number having fallen to 18. In the Cakemuir Burn/Armet Water area the number had fallen to 6 despite 3 new houses having been built, and around Nethertoun Burn only one sheep house remained. Only along the foot of the Moorfoots, where 3 new houses had been built, was the number similar.

All except one of the sheep houses recorded have been in the south-east of the county but their presence elsewhere is testified not only by the sheep house at Gala Ford but also by the description of a rectangular sheep house¹³ and of square

⁶Findlater, Rev. Charles, *General View of the Agriculture of the County of Peebles* (Edinburgh, 1802), 184

⁷*The Farmers Magazine*, vol. 11 (Edinburgh, August 1810), 320

⁸Napier, William John, *A Treatise on Practical Store Farming as applicable to the Mountainous region of Etrick Forest and the pastoral district of Scotland in General* (Edinburgh, 1822), 112

⁹Bain, D, 'Hill Shelter' in the *Journal of Agriculture of the Highland and Agricultural Society of Scotland*, XII/53 (September 1841), 37–53

¹⁰Fairburn, John, *A Treatise upon Breeding, Rearing and Feeding Cheviot and Blackfaced Sheep in High Districts* (Berwick on Tweed, 1823), 58

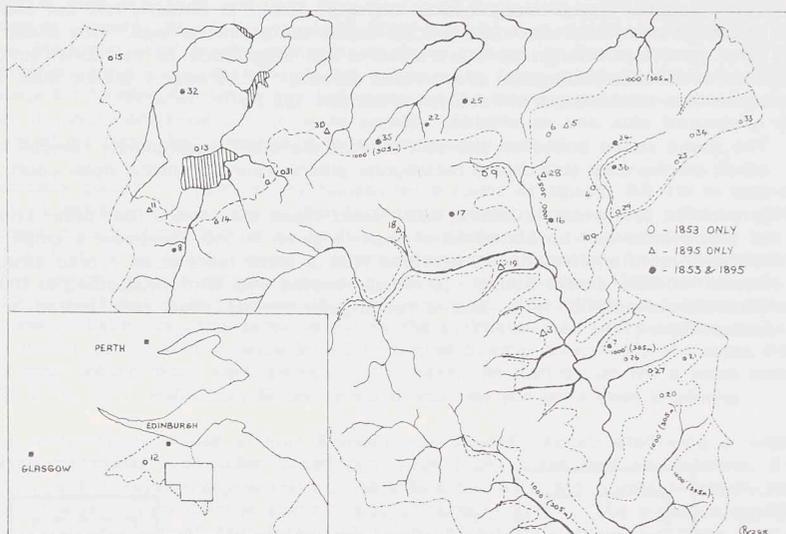
¹¹Cowan, James, 'Report on providing shelter for Hill Stock upon exposed land' from *Transactions of the Highland and Agricultural Society of Scotland*, 59/new series (January 1858), 173

¹²Moore, H F, 'The winter of 1885–6' from *Journal of the Royal Agricultural Society of England* 22 (1886), 377–442

¹³*The Farmers Magazine*, 11 (June 1810), 181

sheep houses¹⁴ also on the west side of the Pentlands. The locations of these structures are not shown on maps and have not been identified in the field, but grass-covered sites with characteristics similar to sheep houses have been found and may be the remains of sheep houses.

All the sheep houses were sited as recommended¹⁵ on well-drained ground, many being on a headland or above a declivity near a stream.



Types

The majority of sheep houses which had a central open court were square. Some were rectangular, two were round and one octagonal but these were out of use prior to the second edition Ordnance Survey map of 1895, as were the three small fully roofed structures shown on the first edition Ordnance Survey map of 1852-3.

Most of the square sheep houses were about 20m by 20m overall, although two were about 14m by 14m and two about 27m by 27m. All had an unbroken roof around an open central court, except for four which had a gap in the roof at the entrance. It was not possible to ascertain the layout of the interior in eight of the square sheep houses, but four had a peristyle of round pillars, four had square pillars and seven had short wall lengths around the central court, the centres of all of which were about 3m inside the perimeter wall. There was also one sheep house, still in use, which had timber posts around a central open court, and although possibly not original, it does suggest that timber posts may have been the internal roof support in other cases. No square sheep houses built after 1853 had pillars but otherwise no significant difference is apparent in the layout.

Two of the rectangular sheep houses no longer exist and only a ruinous perimeter

¹⁴ *The Farmers Magazine*, 15 (August 1814), 283

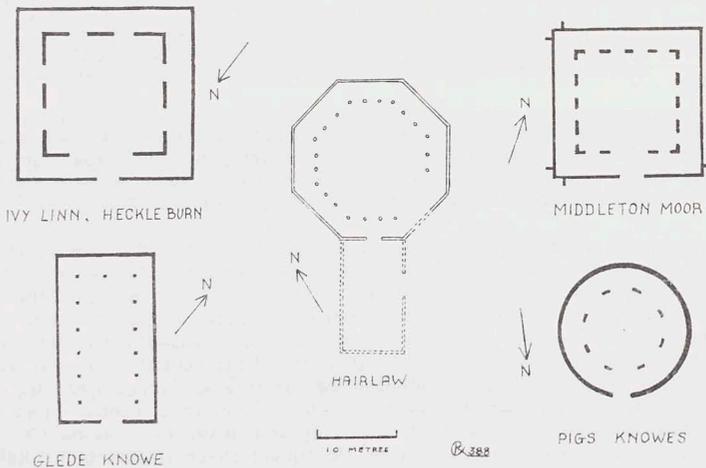
¹⁵ *The Farmers Magazine*, 15 (August 1814), 285

wall remains of a third, but the other two, one pre-1853, the other post-1853, remain upstanding. Both, located toward the western side of the area, are smaller than any of the square sheep houses. Both have pillars along each side and the later one, which is slightly larger, has a further pillar centrally at its inner end and, like those in the square sheep houses, the pillar centres are about 3m inside the perimeter wall.

The octagonal sheep house, overall diameter 20.6m, is similarly laid out and had 4 pillars on each side with centres 2.5m inside the perimeter wall. This sheep house is of particular interest as there exists a full description of the construction and cost of a similar octagonal one, overall diameter 14.3m with 8 pillars, built in 1809 about 8km to the south in Peeblesshire for £94 12s 7d¹⁶.

The round sheep house on the east side of the area is completely ruinous but the other, on the west side, had 8 rectangular pillars around a central open court.

In addition to the above central open court types there were four other structures of which little can be stated other than is given in the gazetteer: a small square roofed structure - Nether Brotherstone (29); a small rectangular roofed structure - Soutra Hill (33); a stell-house - [a circular roofed stell with an opening at the top¹⁷] Gladhouse Plantation (13); and a rectangular roofed shed with roofed wings - Fumart Syke (11).



¹⁶ *The Farmers Magazine*, 15 (August 1814), 283-4

¹⁷ Napier, William John, *op.cit.*, 82

Construction

All square and rectangular sheep houses examined had a perimeter wall of random rubble, usually coursed. Double-faced, with a rubble core, about 1.5m high and 0.5m broad, practically all were mortar-bonded but it is possible that Black Burn and Gala Ford, both built pre-1853, may have been clay-bonded. The external corners of most were square with dressed quoins and inside corners also square, but Kittyflat built pre-1828 and Gala Ford and Lyall Strip built pre-1853 all had round external corners. Also built pre-1853 Cotly Hill had angled corners inside and out. The perimeter wall of the rectangular sheep houses at Glede Knowe and Side Plantation rises on each side of the entrance to form gables for the roof ends. Except for Nettlingflat, which had a doorway in the side opposite the entrance, there was a single entrance 2.5-3m wide usually centrally in one side frequently with dressed margins. The entrance at Side Plantation is arched.

Internally, pillars in square sheep houses were round or square, 0.8-1m in diameter and of random rubble but in the rectangular sheep houses the pillars - Glede Knowe square, Side Plantation round - are about 0.5m in diameter and are of dressed stone (two per course). Where square sheep houses have short internal walls, which is true for all built post-1853, they are about 0.5m broad and of random rubble and some have the ends rounded. The pillars and internal walls appear to have been the same height as the perimeter wall and evidence exists to show that the pillar tops were linked by timber beams, presumably the same being the case where there were short internal walls. At Nettlingflat there were neither pillars nor short walls, only timber posts which may not have been original.

The round sheep house at Pigs Knowes was similarly constructed with a random rubble perimeter wall, 0.6m broad and 1.7m high, which had an entrance, 2.5m broad, with dressed margins and on one side a hinge pin set in lead. Internally there were 8 pillars 1m x 0.6m in section, also of random rubble. The evidence available from the remains of the octagonal sheep house at Hairlaw indicates that its construction was probably similar to Pigs Knowes.

Only the sheep houses at Glede Knowe and Side Plantation, both rectangular, are now roofed and so it is difficult to ascertain how other sheep houses were roofed. However roof timbers at Cakemuir Burn East and a section of ruinous roof at Ivy Linn show that at least these two square sheep houses had roof structures similar to those rectangular structures. This is of significance as Side Plantation is pre-1853 and the others post-1853.

Where evidence exists, sheep houses had collar rafter single roofs, the rafters halved and nailed at the apex, the ridge piece extending from the corners only as far as the first complete rafter. On the inner wall-head each rafter rested on timber beams linking the pillar tops or the short wall lengths and on the outer or perimeter wall-head each rafter rested upon a thin wall-plate. Of consistent pitch, roofs were of pantiles on battens or, as at Ivy Linn, of slates on sarking. Of note was the similarity in all four structures of the timber sizes used. The corrugated iron sheeted roof at Nettlingflat, which has a short internal overhang and fascia but slopes outwards, and fragments of similar roofing at Lyall Strip and Heriot Cleugh, illustrate that the roofing of some sheep houses may have been less permanent and not always of consistent pitch. Indeed one of the sheep houses described as existing on the west side of the Pentlands had a thatched roof sloping outwards¹⁸.

¹⁸ *The Farmers Magazine*, 15 (August 1814), 285

In *The Farmers Magazine* in 1810 A. S. wrote 'I consider the erecting of sheep-houses as a most important improvement in sheep-husbandry'. It would seem that he was not alone in having this view.

Gazetteer of sheep houses in Midlothian county shown on the first (1852-3) and second (1895) edition Ordnance Survey 6" map sheets.

Key	(1000'-305m) - height above sea level
	1826 - shown as roofed on Sharp, Greenwood & Fowler, Map of Haddingtonshire
	1828 - shown as roofed on Sharp, Greenwood & Fowler, Map of Edinburghshire
	1853 - shown as roofed on First edition Ordnance Survey Map 1852-3
	1895 - shown as roofed on Second edition Ordnance Survey Map 1895
	If bracketed then shown only in outline

1 Black Burn NT 3174 5352 - (1000'-305m) 1853

To the west of the upper reaches of Black Burn about 1km east-north-east of Mauldslie farm. All that remains of this sheep house are the lower courses of the perimeter wall which surrounds piles of stone. Square, 23m x 23m overall, with an entrance centrally in the east-north-east side. Internally originally two square pillars on each side with L section pillars in each corner. Nearby are a rectangular and a round turf stell.

2 Blackcastle NT 4094 5017 - (800'-244m) 1895

Nothing remains of this sheep house which stood on the north bank of Cakemuir Burn about 250m south-west of Blackcastle farm until the 1970s when, as it was in a ruinous condition, it was demolished. Originally rectangular, about 30m x 20m overall, with an entrance probably in the short north-east side. The internal arrangement is not known.

3 Brockhouse Burn NT 4130 5070 - (955'-291m) 1895

Two lines of tumbled stone at right angles to one another are all that remains of the sheep house that stood immediately west of the deserted cottage about 850m west-north-west of Brockhouse farm. Originally square, about 20m x 20m overall, with an entrance probably in the north side. The internal arrangement is not known.

4 Brothershiels NT 422 555 - (1000'-305m) 1853

Only traces of possible wall foundations indicate the location of the sheep house which stood on the slopes west of Brothershiels Burn about 450m south of Brothershiels farm. Originally square, about 20m x 20m overall, the internal arrangement is not known.

5 Cakemuir Burn East NT 4058 5710 - (1115'-340m) 1895

On the south-west slopes of Cakemuir Hill to the north of Cakemuir Burn, about 1.5 km north of Nettlingflat farm. All that remains of this sheep house are the lower courses of the perimeter wall enclosing piles of tumbled stone and some rotting timbers. Square, 18.4m x 18.4m overall, with an entrance centrally in the south-south-east side. Internally originally two short wall lengths on each side with short L section walls in each corner. This structure probably replaced Cakemuir Burn West.

6 Cakemuir Burn West NT 4019 5678 - (1100'-335m) 1853

Nothing remains of the sheep house which stood on a low headland on the north side of Cakemuir Burn about 1.2km north-north-west of Nettlingflat farm. Originally

square, about 20m x 20m overall, the internal arrangement is not known. This structure was probably replaced by Cakemuir Burn East.

7 Cortleferry Hill NT 4390 5080 - (1000'-305m) 1853, 1895

Near the south-west end of the ridge between the Toddle and Nethertoun Burns, about 1km north-east of Cortleferry farm are the lower courses of the perimeter wall, now the south-east side part of a field wall, and the tumbled pillars of this sheep house. Square, 20m x 20m overall, with an entrance toward the east end of the south-west side. Internally originally four square pillars on each side.

8 Cotly Hill NT 2925 5083 - (1000'-305m) 1853, 1895

On the low spur between Long Shank and Cotly Hill about 650m south-south-west of Gladhouse cottage the upstanding perimeter wall of a square sheepfold, with faint traces of pillar bases in the interior, are the remains of this sheep house. Square with angled corners, 21.2m x 21.2m overall, with an entrance centrally in the north-north-east side. Internally originally six round pillars on each side. The south-south-west side of the perimeter wall overlies a turf bank beyond which are traces of rig and furrow.

9 Cow Bridge NT 3910 5532 - (1000'-305m) 1853, (1895)

In a plantation on the north-facing slope above Cow Bridge about 600m south-south-west of Falahill farm the perimeter walls of a rectangular enclosure, in part ruinous, are the remains of this sheep house. Rectangular, 27.8m x 20m overall, with an entrance toward the south end of the west side. The interior has been forested and there are no traces of the arrangement. The 1st edition OS map shows the north-east corner as unroofed. About 10m to the east is a ruined small rectangular stone structure not shown on any OS map.

10 Crookston Mains NT 4254 5421 - (1000'-305m) 1853, (1895)

On the east slopes of Crookston Hill about 520m north-north-west of Crookston Mains farm a short deviation in the direction of a field wall indicates the location of the south-south-east side of the perimeter wall of the sheep house that stood here. Originally square, about 20m x 20m overall, the internal arrangement is not known.

11 Fumart Syke NT 2796 5185 - (975'-297m) 1895

In a clearing within a plantation on the lower slopes of Hog Hill about 800m south-south-east of Tweeddale cottage a wall forming the south side of a rectangular enclosure is all that remains of this sheep house. Originally rectangular, about 26m x 5m, with arms, about 14m x 5m, extending northwards from each end. There is an entrance near the east end of the north side of what was the rectangular structure.

12 Gala Ford NT 1095 6183 - (850'-259m) 1853, (1895)

At the foot of Temple Hill on the south side of the Water of Leith about 350m north-east of Gala Ford the upstanding perimeter wall of a square sheepfold is the remains of this sheep house. Square, 12.7m x 12.9m overall, with an entrance centrally in the south-west side and another, probably later, near the east end of the south-east side. There is no evidence of the internal arrangement. Nearby are the remains of a round turf and of a round, stone-walled stall.

13 Gladhouse Plantation NT 2962 5418 - (890'-271m) 1853, (1895)

On gently sloping ground to the North of Gladhouse Reservoir about 450m west-south-west of Gladhouse is a ruined stone-walled sheep stall. Round, diameter 13m overall, it was shown as completely roofed on 1st edition OS map

and is possibly the remains of a stell-house¹⁹.

14 Glede Knowe NT 3025 5178 - (990'-304m) 1895

At the foot of Huntly Cot Hill about 900m south-south-east of Huntly Cot farm is this sheep house which is still in use and has racks round the walls. Rectangular, 21.5m x 12.9m overall, the perimeter wall is 1.5m high except for the gable ends of the roof on either side of the south-east end which has a centrally placed entrance. Internally there are six square pillars equally spaced on each side and a single square pillar centrally placed at the inner end. The pillars, 1.5m high, are linked by timber lintels and resting on these and wall plate timbers are collared trusses supporting a pantile roof 3.5m wide of equal slope on either side.



GLEDE KNOWE

©288

15 Hairlaw NT 2613 5637 - (900'-274m) 1853, (1895)

On the slope north-west of the marshy area surrounding Ludge Burn about 1.1km north-north-west of Cockmuir Bridge all that remains of this sheep house are the lower courses of the perimeter wall enclosing the founds of pillars. Octagonal, diameter 20.5m overall, in the centre of the south-south-west side is an entrance leading from the remains of an attached rectangular enclosure. There is a possible further entrance in the south-south-east side which may be a later alteration. Internally originally four round pillars on each side. Attached to the south-south-west side is the ruin of a rectangular enclosure, about 14m x 9m within turf-covered walls, with an entrance near the north end of the south-south-east side.

16 Hangingshaw NT 4095 5436 - (1100'-335m) 1853, 1895

On the south-west slopes of Hangingshaw Hill about 400m north of Hangingshaw farm the remains of this sheep house are the lower courses of the perimeter wall, the south side part of a field wall, enclosing the tumble of pillars. Square, 18.5m x 18.5m overall, with a centrally placed entrance in the west side. Internally originally

¹⁹Napier, *op. cit.*, 82 and 132/3

a short length of wall on each side with short L section walls in each corner.

17 Heriot Cleugh NT 3795 5375 - (1125'-343m) 1853, 1895

On the north-facing slopes of Winchel Hill about 400m south-south-east of Heriot Cleugh farm the upstanding perimeter wall of a square sheepfold enclosing the lower courses of the north-east corner 'pillar' is all that remains of this sheep house. Square, 24.1m x 23.5m overall, with entrances centrally placed in east and west sides, the former possibly later. As only the lower courses of a corner 'pillar' remain the internal arrangements are uncertain but were possibly short wall lengths. Still in use, the north corner of the east side is now partly roofed with corrugated iron sheets, the inner side supported on timber posts.

18 Ivy Linn, Heckle Burn NT 3643 5293 - (1050'-320m) 1895

On sloping ground above the junction of White Cleugh Burn with Heckle Burn about 450m north of Carcant the upstanding perimeter wall, lengths of interior walls and, in the west corner a fragment of slated roof, are the remains of this sheep house. Square, 22m x 22m overall, with an entrance centrally in the north-east side. Internally there is a short length of wall on each side with short L section walls in each corner. In the west corner is the tumble of a boarded slated roof supported on collared trusses.

19 Kilcouter Wood NT 4010 5260 - (1000'-305m) (1853), 1895

Near the north-east end of the ridge between Heriot Water and Corsehope Burn about 850m west-south-west of Kilcouter farm the lower courses of the south side and south-west corner of the perimeter wall and the upstanding remains of three of the internal corner 'pillars' are all that remain of this sheep house. Square, 18.4m x 18.4m overall, no entrance identifiable. Internally originally a short L section wall in each corner and, almost certainly, a short length of wall on each side in the intervening space. The 1st edition OS map shows the structure as an open sheepfold.

20 Kittyflat NT 4570 4948 - (1000'-305m) 1828, 1853

Near the summit of a spur of Rowantree Law about 500m east of New Kittyflat farm the remains of this sheep house are the lower courses of the perimeter wall, the south-west corner upstanding, surrounding piles of tumble. Square, 19m x 19m overall, with an entrance in the south side near the south-west corner. Internally originally four square pillars on each side.

21 Longmuir Rig NT 4619 5076 - (1050'-320m) 1853, (1895)

South-west of the summit of the crest of Longmuir Rig about 1.5km east-north-east of Nethertown farm a low grass-covered stony bank is all that remains of this sheep house. Round, about 23m overall, with an entrance on the east-south-east. Internally there is a stony ledge round the perimeter probably corresponding to the area originally roofed.

22 Lyal Strip NT 3638 5646 - (900'-274m) 1853, 1895

In a plantation adjacent to a ruined cottage and near to a modern house about 1.5km south of Wester Middleton farm are, standing to full height, the perimeter wall and the internal columns of this sheep house. Square, 23m x 23m overall, with an entrance in the south side. Internally five round pillars on each side, all are original except three now brick-built. In the north-west corner are the remains of a roof of corrugated iron sheets which sloped outwards but is unlikely to be original.

23 Makimrich Wood NT 4457 5698 - (1000'-305m) 1853

Not even a spread of stone indicates the location of this sheep house which stood on the west side of Armet Water about 800m north-north-east of Gilston Peel. Originally square, about 20m x 20m, the internal arrangement is not known.

24 Master Cleugh Burn NT 4243 5714 - (1000'-305m) 1853, 1895

On a headland about 300m upstream from the join of Master Cleugh Burn with Brothershiels Burn and about 1.2km north-north-east of Brothershiels farm the upstanding wall of a square sheepfold, which is still in use, was the perimeter wall of this sheep house. Square, 18m x 18m overall, with an entrance centrally in the north side. The internal arrangement is not known.

25 Middleton Moor NT 3771 5717 - (900'-274m) 1853, 1895

On level open ground about 1km south-west of Middleton Mains are the upstanding remains of the perimeter wall and pillars of this sheep house. Square, 19m x 19m overall, three of the corners of the perimeter wall are buttressed and there is an entrance in the centre of the ruinous south side. Internally three rectangular pillars on each side with L section pillars in each corner.

26 Middletoun NT 4464 5063 (900'-274m) 1853

On the lower slopes of Cortleffery Hill about 250m west of Middletown farm a length of mortared wall now forming a revetment to a road and part of a field wall at right angles to it are all that remains of this sheep house. Square, 14.5m x 14.5m overall, the internal arrangement is not known.

27 Nethertoun NT 4547 5026 - (1000'-305m) 1853

No evidence exists of the sheep house that stood near the top of the steep slopes south of Nethertown Burn about 700m east of Nethertown farm. Rectangular, about 15m x 10m overall, the internal arrangement is not known.

28 Nettlingflat NT 4051 5563 - (1000'-305m) 1895

On the slopes immediately above Nettlingfold farm the enclosure wall of the present sheep house was originally the perimeter wall of the sheep house located here but whether or not the interior is original has not been ascertained. Square, 27.4m x 27.4m overall, the perimeter wall is 1.5m high and there is an entrance toward the west end of the west-south-west side and a doorway near to the centre in the east-north-east side. Internally along each side timber posts, 2.2m high, at intervals of about 2.8m support a roof of corrugated iron sheets sloping outwards with a short internal overhang and fascia.

29 Nether Brotherstone NT 4298 5498 - (1000'-305m) 1853, (1895)

No trace remains of the sheep house that stood in the south-east corner of the plantation that now exists on the hill crest about 400m north of Nether Brotherstone farm. Square, about 7m x 7m overall, the internal arrangement is not known. The 1st edition OS map shows the structure completely roofed.

30 Outerstone Hill NT 3348 5563 - (960'-293m) 1895

On level ground on the west side of Latch Burn immediately to the west of Outerstone farm are the upstanding remains of the perimeter wall and internal wall lengths of this sheep house. Square, 21.5m x 21.5m overall, with an entrance centrally in the east-north-east side. Internally originally two short wall lengths on each side with short L section walls in each corner.

31 Pigs Knowes NT 3245 5387 - (1040'-317m) 1853, (1895)

Adjoining the deserted farmstead of Pigs Knowes about 1.8km east-north-east of Mauldsie farm the ruin of an upstanding sheep stall with pillar bases within are the remains of this sheep house. Round, 17.5m overall diameter, with an entrance on the north. Internally, round the perimeter, originally eight equally spaced rectangular pillars. The perimeter wall overlies a round turf stall.

32 Side Plantation NT 2857 5557 - (920'-280m) 1853, 1895

On level ground east of Fullerton Water about 700m west of Upper Side is this

sheep house, now ruinous, its north end roofed, its south end tumbled, the roof trusses and pantiles lying on the ground. Rectangular, 20m x 11.2m overall, the perimeter wall is 1.8m high except for the south end where it rises to the gable ends of the roof on either side of the entrance which is arched over. Internally are five round pillars on each side, four free standing, the most southerly, on either side of the entrance, a half pillar built into the perimeter wall. The pillars, 1.8m high, are linked by timber lintels and resting on these and wall plate timbers are collared trusses supporting a pantile roof 3.5m wide and of equal slope on either side.



33 Soutra Hill, Hen Moss NT 4627 5871 - (1000'-305m) 1853, (1895)

At the north corner of a former plantation near the source of Armet Water about 850m west-north-west of Huntershall are the probable remains of a cot house. Rectangular, 7.2m x 4.2m overall, the south wall is common with the plantation wall and there is an entrance centrally in the east wall.

34 Soutra Mains Wood NT 4482 5762 - (1000'-305m) 1826, 1853, (1895)

On the south-east slopes to the south of Soutra Mains Wood all that remains of this sheep house are the lower courses of the perimeter wall enclosing piles of tumbled stone. Square, 20m x 20m overall, with an entrance centrally in the south-south-west side. Internally originally five square pillars on each side. Nearby is a round turf stell.

35 Sowburnrig NT 3495 5587 - (935'-285m) 1853, 1895

On a low knoll about 250m south-south-east of the ruin of Sowburnrig farmhouse are the lower courses of the perimeter wall and the tumbled remains of the internal wall lengths of this sheep house. Square, 27.5m x 27.5m overall, with an entrance centrally in the north side. Internally originally four short wall lengths on each side with short L section walls in each corner. The west side of the sheep house overlies two round turf stells.

36 Upper Brotherstone NT 4279 5624 - (1100'-335m) 1853, 1895

At the foot of Brotherstone Hill about 300m north-east of Upper Brotherstone deserted farmstead only one pillar and the south side of the perimeter wall of this sheep house remain upstanding. Square, 19m x 19m overall, with an entrance centrally in the south side. Internally originally four round pillars on each side. In the vicinity are field banks and it is possible that the sheep house may overlie one of these.

CRUCK BLADE, ELGIN, MORAY²⁰

Elizabeth Beaton

The main thoroughfare of Elgin, the High Street, runs east-west, widening in the centre of the city to accommodate the former market place and church. As in other Scottish medieval cities and towns, the principal street is linked to parallel north and south back streets by numerous winds or narrow lanes, a plan that has remained almost unaltered since medieval times, merely overlaid and infilled by buildings of subsequent periods. In one of these narrow passages immediately north of St Giles', and not a hundred yards from and in marked contrast to Archibald Simpson's austere ashlar classical church of 1828, a single member of a jointed cruck truss projects from a section of dry stone rubble wall:²¹

Elgin -
1st OS, 1871
Reduced from
1:500 scale

× Cruck Blade
• Cruck Slot



This length of walling formed the long east elevation of a single-storey cottage to the rear of 121 High Street, revealed on the 1st edition Ordnance Survey of 1871 as the fourth in a row of seven buildings stretching back from the principal street frontage. The cottage measured approximately 36' x 15' (10.98m x 4.56m) on plan, and 6' (1.83m) high to wallhead. There is a small blocked window with a re-used lintel with roll-moulding (quarter-round) similar to that found on windows of the 'Bishop's House' (dated 1557) close to the cathedral. The single cruck blade is roughly central, seated in the usual mural slot commencing 1' (30cm) above ground level; it measures 5'8" (1.73m) in length and projects about 1' (30cm) above the wallhead. The cruck blade was scarfed or jointed, lapped to an upper member at wallhead height, secured by at least two wooden pegs. At its head it is now cut away where the upper timber abutted, fastened with wooden pegs of which one

²⁰ I am grateful to Richard Emerson for drawing my attention to the cruck blade in St Giles' Close; also to Mike Seton, Elgin Library and John Barrett, Moray District Record Office, for help with maps.

²¹ NJ 2157 6291. Demolition revealed this site to the rear of 121 High Street, Elgin, which has now been cleared (September 1988).

survives together with a second peg hole. It is formed from a single tree trunk or heavy branch, is crudely shaped for easement into the mural cavity where it remains firmly embedded, and is roughly adzed on the outer face.



Dating this dwelling on such scanty evidence obviously presents difficulties; it is, however, hardly likely to be earlier than the eighteenth century. The row of buildings appears on Wood's map of Elgin, 1822, as belonging to Mr Anderson; on Ray's 1838 and Hutchon's 1855 maps of the city the owner was named Grant. The 1841 census is unhelpful, while the 1871 OS name book shows neither number nor name.

However, the importance of this single, somewhat mutilated and stubborn section of timber is to reveal tangible evidence of a cruck building tradition in Moray. Thomas Dick Lauder shows cruck framing in his graphic illustrations of the 1829 Moray floods, a pair of cruck trusses standing amidst a scene of desolation at Broom of Moy on the west bank of the Findhorn River²². During the last four years cruck framed cottages and steadings have been identified on Dava Moor, in Inverallan, Cromdale and Advie Parish, Badenoch and Strathspey District, Highland Region²³. The solitary cruck blade in St Giles' Close, Elgin, places the tradition firmly in the urban heart of Moray district.

²²Lauder, Thomas Dick, *An Account of the Great Floods of August 1829* (Elgin, 1830; 3rd ed. 1873), plate XXXIII.

²³Steeding at Crannich (NH 003 347) has truncated cruck blades in mural slots. Mural slots and surviving cruck stumps in roofless croft house at Rychorrach (NH 994 344). The parish of Inverallan, Cromdale and Advie formed part of the historic County of Moray until local government reorganisation of 1975.

REMINISCENCES OF A THRESHING MACHINE MAKER IN EASTER ROSS

Graham J Douglas

Threshing machines are used to separate grain from sheaves gathered in the harvest. They have been in use in Scotland for almost 200 years, but those in use now (about 30 throughout the country) are different from the first machines (usually 'roller-fed' mills) of the late eighteenth and early nineteenth centuries. At their peak in the 1950s, threshing machines were produced by about 40 Scottish manufacturers, and had become a vital fixture on most Scottish farms. Their rapid disappearance throughout Scotland from the early 1960s has been attributable to the spread and efficiency of the combine harvester, which, as its name implies, combines the three tasks of reaping, gathering and threshing the harvest. It is a tribute to the sound design of the last generation of threshing machines that in effect they have been completely incorporated into the workings of even the most complicated and advanced of the recent breed of computerised combine harvester.

It is this last generation of fixed barn and portable threshing machines which threshed and usually dressed the grain that forms the subject of this paper; it is not concerned with the design and development of the threshing machine. It draws heavily upon the notes of the late James Reid, a threshing machine maker of Dingwall, Ross and Cromarty. To date, very little has been written about threshing machines, and even less about the manufacturers themselves. For this reason, the comments and observations that follow are especially valuable, and are included mostly as he wrote them. They comprise an introduction, comments on various popular engines and observations on other threshing machine makers. Interspersed within these notes are some additional references and comments based on work recently undertaken by the Scottish Industrial Archaeology Survey and the Royal Commission on the Ancient and Historical Monuments of Scotland. The list of 52 farms in the Tain and Ardgay areas of Easter Ross (and a single Black Isle example at Kinbeachie) is based upon information supplied by Mr Reid and gives details of machines, drives, layout and comment where applicable.

First, however, it is important to consider briefly the history of Mr Reid's business.

James Reid & Son (Millwrights and Engineers)

The firm of James Reid was established as millwrights in Invergordon in 1913, and manufactured, repaired and installed threshing and grinding machinery. The works moved to 'Old Mill', Bridgend, Dingwall in 1914, and expanded its activities to include repairs to water wheels, associated gearing and other machinery. The 'Old Mill' works did not have a foundry, although it did have a blacksmiths' department and a range of wood and metal-working machinery. The latter were water-powered until the late 1940s, after which the works was electrically driven. The items needed which had to be cast were usually produced by local foundries. The firm was representative of many businesses manufacturing threshing machines at this period.

Mr Reid's Notes (quoted as written during the 1960s):

There is no need in these records to go into the history of the earliest attempts to thresh grain crops by mechanical means. It is sufficient to say that for long the pioneers seemed to have concentrated mainly on power-operated flails. This is quite reasonable seeing that the flail had been the threshing implement from time immemorial, and even with promising inventions old ideas

are slow in changing. Some of the early machines apparently did work but could not stand the strain and soon went to pieces.

In the year 1786 Andrew Meikle, Millwright, Tynninghame, East Lothian, after long trials, made a threshing machine on an entirely different principle. The sheaves of corn were spread thinly, to go between two cast iron rollers and then to a closed cylinder with flat beaters revolving, which stripped off the grain while the rollers held it. The new machine was an extraordinary success and the Meikle or Scotch mill was being copied and fitted up at farms near and far. Although patent rights were granted, Meikle seems to have been unable to enforce his rights and in his old age was in poor circumstances. However, it is recorded that many country gentlemen, recognising the benefit his invention had made to agriculture, raised a handsome subscription which made his latter years more comfortable.

The Meikle threshing mill was known for many years as the Scotch Mill. The threshing cylinder or drum as it was then and still is called, carried straw over the top, throwing it against another larger, very slow-moving cylinder which had rakes across, usually six, set with teeth about 8-9 inches long. These rakes pulled the straw over a grating made of narrow, sometimes round spars allowing the separated grain to fall through on to the floor below. In course of time a receiving hopper below the above-described grating collected the grain and a blast of wind from a fan blew the chaff from the heavier grain. There seems to have been no riddling apparatus but this also came in due course. The larger mills had two of these revolving shakers, one behind and slightly lower than the first, helping to make for better shaking²⁴.

It would appear that for many years the Meikle or Scotch Mill (which last name was common to all roller-fed mills for generations) was the pattern copied and made.

²⁴An excellent example of this type of machine is at Gallowhill, Westray, Orkney (HY 442460). This is a horse-powered roller mill (drum-width 1.07m, 3'6"). It is fitted with two straw rakes, and below the rakes is a very simple fanner which does have a riddle case, and would have dressed the grain very effectively. To date (1986), this is the only surviving example of a horse-powered roller mill of this type and size to have been noted. Since 1983, the Scottish Industrial Archaeology Survey (SIAS) has been recording threshing machines, and it has become clear that very few horse-powered roller mills of any size have survived. In contrast, many more water-powered mills of this type have been found and subsequently recorded. The National Museums of Scotland (Scottish Agricultural Museum) do have a horse mill, but its type, date and specifications have not yet been recorded by SIAS. There are many horse engine houses to be seen throughout Scotland, but very few horse engines. SIAS has recorded what is thought to be the only example of a multi-horse enclosed engine. It is at West Gallaberry, Duncow, Dumfriesshire (NX 963826), and some points about its construction are worthy of note here, particularly as much has been written about the use of such machines, but little about their physical form. The engine has three harness bars, but does not appear to have a device which allowed each horse to exert the same amount of power. Such devices were chains from the end of the harness bars and were attached to a spring-loaded hub. It is not known precisely how they operated, and it would be dangerous to speculate about it. However, the engine does appear to have a simple means of balancing out the different forces from each horse until a regular speed is established. This may have been achieved by having tapered harness bars (all wood), the large ends being on the outmost side of the bars. At the centre, the bars are 90mm wide whilst at the outer ends, they are 110mm wide. Their depth is a constant 200mm. This shape of the harness bar would allow for a small degree of flexing which would help to achieve a smooth running engine. For further information on this site see also, Hay, G and G Stell, *Monuments of Industry* (Edinburgh 1986) HMSO, 12-14

Morton Mills and Engines

Errol Works [Perthshire], in addition to threshing machines, manufactured steam engines of most sizes suitable to the requirements, usually 8 HP, for most of their mills. The boilers, mostly of the loco type, were probably made by Robey, Lincoln. The smaller engines had vertical boilers. The Morton engine, alongside the usually maroon painted boiler lagging, made a very pleasing combination. The older engines had 5ft diameter flywheels and ran at 125 RPM. At one time at least 14 Ross-shire farms had Morton steam engines. As years passed by mostly all the old-time farm engines with their brick built-in boilers and chimney stacks were being replaced by oil engines of various makes. Early in the century there was a disastrous explosion at a Black Isle farm and subsequently quite a number of these old boilers were never afterwards used. There was no compulsory boiler inspection then, although insurance companies, if asked to insure boilers, had their own inspectors. Morton at one time had an oil engine on the market. Their plate was on it but it is not known whether or not it was made at Errol Works. Four only were known to be in Ross-shire.

The Campbell Oil Engine made at Halifax seems to be among the earliest to be used to replace what was termed the 'coal engine'.

Allan Brothers, Aberdeen, followed soon after and by 1930 there was or had been quite a few in Ross-shire.

Blackstone engines were also fairly common and for lesser requirements the American Amancos, International, etc. were in great demand. As Morton began to lose ground, various other mill makers were taking over. It would have been about the beginning of the 1890's that Theodore Gerrard of Huntly began to install Gerrard mills as well as bring old ones up to standard²⁵. Early in this century most old time mills were getting out of date and the earliest Mortons out of commission. Farm fires, so common 30-40 years ago, also put a finish to many a good mill. The English portable type or Scotch makes of similar pattern were now on the market.

Ben Reid and Co, R G Garvie, Barclay Ross and Hutchison and Allan Brothers, all of Aberdeen, Daniel Douglas, Auchterarder, and an English maker, Marshall of Gainsborough, were all common names of millwrights before 1914. In earlier days many meal millers were also millwrights, but with few exceptions did little at the trade except keep up and repair their own mills. David Murray, meal and saw-miller at Kincardine Mill, Ardgay from before the middle of the last century till his death in 1908, when the mill closed, was a skilled millwright. He

²⁵The farm at Warsetter, Sanday, Orkney (HY 628376) has a mill (maker unknown) which was a horse-powered roller mill with two straw rakes. In the late nineteenth century it was improved, the horse engine being replaced by a Campbell oil engine which was said to be the first of its type to be used for threshing in Orkney. The oil engine was subsequently replaced by the current Lister two-cylinder water-cooled diesel engine. The mill itself was also improved from time to time. The straw rakes were replaced by straw walkers, and the speed of the threshing drum was increased to make the mill a semi high-speed model, with a drum speed of approximately 700 rpm. The dresser was improved on various occasions, and in addition, chaff-blowers were fitted. The mill was still in use in late 1985

was known to have taken part in the installation of the Rockfield Meal Mill and the mill near Tain Station. Mr Cross, once at Contin Meal Mill, long ago took Alcaig Mill and rebuilt it, as also the threshing mill at Alcaig Farm.

The Munros (father and son) once at Kinbeachie Mill, latterly at Newmills, Resolis, were in their day unsurpassed as engineers and millwrights. No definite date can be given when any of the men mentioned started business but 100-130 years ago would be a fair guess. Ferguson had a foundry at Tain at one time and possibly were millwrights also. In Invergordon, John and Finlay Urquhart had a foundry and engineering business, probably before any of the names already mentioned. A number of threshing mills made by John Urquhart could have been seen in the early years of this century. It is regrettable that no records seem to be available of what seems to have been an engineering establishment at, or near where Culcairn Mill, Evanton, buildings still stand. Recalling information given close on 60 years ago, it would seem that early in the period Sellar was the name of the proprietor and was understood to have some connection with the well known firm of Sellars, Huntly. Be that as it may, the overhead crank type of steam engines, at one time in almost every farm steading which had a brick stack, was termed the 'Sellar engine', said to be made by them, as also threshing mills of the same period²⁶. Most likely a foundry had been incorporated in the business as indicated by pig metal and castings found by later occupiers when digging the drains or foundations. At one time the power of seven water wheels had been used and John Urquhart already referred to was employed there.

An iron foundry is also known to have existed near the Meal Mill of Findon. The early mill maker would have got castings, gear wheels, etc. from these foundries while the timber used was all homewood.

Almost all over Scotland and as with most other early inventions, improvement followed as a matter of course. The earliest mills were wide - up to 4 or 5 feet. The threshing drum ran at 250 RPM - beaters about 5-6 inches wide. Now they became narrower, the drum speeded up to 400 RPM and the broad beaters were replaced by 3-4 inches and still later 2½ inches wide. Also the beater which originally struck flat was sloped backwards which did not break the straw so much. Next came the peg or spiked drum with iron teeth ½ inch to ⅝ inch diameter, which needed less driving power. As most mills were horse-driven this was a great improvement, though with water or steam power it was of less importance. The next

²⁶This type of steam engine was known as a 'vertical' steam engine. Remains of this type of engine and boiler are very rare now, although the chimneys for boilers can still be seen at farms throughout the country. A complete vertical steam engine, and the roller threshing mill that it powered, are the central feature at the Hunday Museum, Stocksfield, Hexham, Northumberland. This engine and mill have been renovated and are in running order, but powered by an electric motor. This example is probably the only complete unit remaining in Britain. The remains of a similar engine were recorded at Ardwell Mill, Sandhead, Wigtownshire (NX 101485). The remains included the crank shaft, flywheel and part of the top cross member, and its fluted column supports. At Kilmaurs Mill, Kilmaurs, Ayrshire (NS 413413) there is the endframe and bed-plate of a vertical steam engine. It seems this engine was once employed to assist the water wheel, which powered five pairs of millstones and associated mill machinery

change was in the direction of the drum's rotation. As mentioned already the straw was threshed over the top, the idea being that the sheaf, by its own weight, would lie close to the beaters. There was of course a hinged cover which kept everything from rising up. Now the drum threshed down and a piked or ribbed concave bar set about $\frac{1}{2}$ inch away made for cleaner threshing. Long ago 'feeding' the mill was reckoned a job requiring care and skill and many a farmer who would not have lifted a spade or fork invariably did the feeding. The sheaf had to be spread evenly and as straight as possible, and anything going in sideways had no chance of getting threshed – even the straw band had to be straightened out and laid parallel with the sheaf. A Banff millwright seems to have made shaker boxes worked by a crank but the idea did not take on at the time. By the end of the 60s of the last century travelling shakers, i.e. crank-driven shakers, were being, with a few exceptions, supplied with all new mills, and many old ones had the original rakes replaced by the new type of shakers²⁷.

Four was the most common number of shakers, three and even two on small mills, though some of the first English portables had five.

The coming of the combine, gradually, and at length finally put an end to the making of threshing mills. For a hundred more years after it was invented the installation of a new mill at a farm was an outstanding event in the annals of the farm history and the 'onset' was, more especially in the North East, the occasion of a social afternoon and perhaps a late night as well.

A line or two of old ballads comes to mind. From *Oor Ferm Toun*.

We've got a fine new threshing mill at oor ferm
toun

and again:

There's water mills and there's horse mills.
But the steam mill's best of a' They thresh the corn
an'
fill the sacks An' blaw the cauff (chaff) awa'

Farm Mills

Abbots Hill (NH 76 81) 24-inch Wright mill and old oil engine,
make unknown.

²⁷ see footnote 24

Aldie (NH 78 80) A 14ft bucket wheel had been a long time driving an old mill. Removed in 1925. Had apparently been partially remade by Morton. An 8ft x 2ft bucket wheel had at one time driven the fan riddles. A very fine plant was installed in 1925 with all water in the 14ft wheel. A large dam used by both the adjoining mealmill and farm mill supplied both with water, which sometimes led to friction if water was scarce. An electric motor eventually made these two wheels unnecessary. The meal mill still has the water power.

Arboll (NH 87 81) One of the first mills in Ross-shire, a wind mill. Part of the circular building of a tower seen about 1915 when some alterations were made. Next had been a brick stack Sellar engine, then a complete steam unit of a loco type boiler and steam engine replaced in turn by an Allan 25 HP engine with a 4ft Marshall mill installed 1917. The steading was burnt and a 4ft Wright installed - never very satisfactory.

Ardjackie (NH 75 84) After fire 2'9" Wright/Campbell engine, then tractor, then electric motor.

Ardmore (NH 70 86) Before being broken up big single ring Sellar engine ran water wheel - very old mill. After fire replaced by 3ft Wright. Not successful as gearing was wrong. Sold at roup and put to Ospisdale.

Ashfield (NH 85 77) Horse mill then 30" Wright/Souter engine, mill shifted to Tulloch, Munloch.

Balaldie (NH 87 79) A covered horse mill here at one time. Morton mill with steam engine and boiler (engine latterly installed at Ardross 'Creosoter'). A Crossley engine then used until replaced by 27 HP Allan engine removed from Rosskeen mill, replaced by 4ft Allan.

Balindrum (NH 85 77) Small Garvie mill with Amanco engine.

Balinlore (NH 86 75) A very old type mill with a very old portable steam engine with overhung crank. Allan engine 12 HP installed later, complete Reid plant 3ft, tractor-driven.

Balmuchie (NH 87 78) Brick stack and engine at one time drove a Morton mill. A 4'6" Marshall mill with a Marshall portable steam engine after that. After fire a 4'6" portable iron-framed Marshall was fitted to work in barn or outside, tractor-driven. This mill also did the threshing for Meikle Rhynie.

Balnagall (NH 83 81) Nothing known but possibly a horse mill at one time.

Balnaha (NH 88 86) An old round shaker mill with 5 horse levers was there until a 30" Wright and 10 HP Souter engine was installed. Mill was removed about 1949 and shifted to Ord Mains. A big door was made in the barn to let in an ex-Dept of Agriculture 4ft Garvie portable mill.

Bindall (NH 92 84) Probably steam stack with engine and Morton mill (steading burnt down in 1914). Replaced by a Douglas mill, the last installed in Ross-shire, and Tangye engine. Again burnt down

and a 4ft Marshall portable with tractor drive installed.

Broomtown (NH 85 75) 4 lever horse mill removed and 3ft Reid with 12 HP Allan engine installed.

Brucefield (NH 93 86) Brick stack, old-time engine and mill, then 3'6" Morton mill with one of the 4 Morton oil engines in the county. Removed and taken to Munlochry meal mill (it was a bad starter). Tangye from Rosskeen replaced it, all burnt down. Reid plant with Shanks crude oil engine installed. Mill was afterwards made portable and did threshing for Wilkhaven when required.

Burgage (NH 78 81) Old Horse mill, then by Amanco engine, 30" Reid put in, driven by tractor.

Cadboll Farm (NH 87 77) Chimney stack of old engine was replaced by Morton and Morton mill. Part of the steading burnt down and later the barn also. Portable mill used after.

Cadboll Mount (NH 88 79) Stack here the last one used in Ross-shire. An old engine had been replaced by a Morton steam unit driving a 3'6" Morton mill. Ashes from the boiler fire set fire to the steading but did little damage to the engine which powered a 4ft Reid plant. First a tractor drive then an electric motor was substituted.

Dounie (NH 56 90) (now broken up) Water wheel, make of mill unknown.

Easter Rarichie (NH 84 74) Brick stack with old steam engine and old mill. Four foot six inch. Douglas mill and old-type Allan installed about 1905. One flywheel of engine burst and did damage, and later tractor drive was arranged.

Edderton (NH 71 84) (Clark) 3'6" Morton and 14ft water wheel. After fire replaced by Reid 3'6" with dressing machine in granary.

Fearn (NH 83 77) Very old Morton 4'6" with roller and high speed drum. Rebuilt 1913 by Reid. New plant installed by Reid in new position in 1945. Fine Morton steam engine replaced 1915 by 30 HP Allan engine. New mill with 25 HP electric motor.

Geanies Mains (NH 89 79) A new steading had been built a field breadth below the first Home Farm, part of which may still be seen. No doubt there had been a threshing mill there, it being farmed by the Laird, but no information was ever available. The new Mains would have been erected 85-90 years ago, had a Morton 4ft mill and a Morton steam engine and boiler exhausting up a chimney built in the wall of the engine house. A new 4'6" Marshall mill took place of the Morton in 1917, the steam engine still driving it, the boiler being condemned some years later. A tractor drive was arranged until a 30 HP electric motor was installed. A bruiser made and fitted by Reid in 1913 is still working.

Hilton of Cadboll (NH 87 76) 3ft Wright mill, first in the county, Souter engine.

Hilton (NH 92 85) 30" Morton driven by 10 HP Campbell engine

which was replaced by Tangye engine from Brucefield. Mill replaced by old 3'6" Ben Reid once in Easter Lovat - removed latterly to Hillockhead, Rosemarkie.

Hilton, Tain (NH 79 80) A very old water mill had been here and replaced by a 3ft Wrights, underpowered until galvanised steel buckets were put in the wheel.

Kimberley (NH 87 81) An old 2-horse mill.

Munro at Kinbeachie (NH 62 62) 1855 (married), came to Newhall 1899, first threshing plant at Kinbeachie 1899, second in 1902.

Kirksheaf (NH 78 81) A brick stack and Sellar engine were here for long but no mill, the farmer being a threshing plant owner with 2 or more portable mills on the road. A later tenant installed a Barclay Ross Aberdeen mill, tractor-driven.

Knockbreck (NH 78 81) An old mill probably horse-driven, but later by very early portable steam engine. Much later by 30" Reid mill driven by tractor.

Lochslin (NH 84 80) It is believed that at one time a steam stack was here and had to be removed. A 3'6" Morton mill was driven by a Robey undertype steam engine - a very beautiful job - replaced by Allan engine. On alteration to steading a Reid portable for inside and outside use with straw, grain and chaff-blower combined as one unit, was installed.

Lower Arboll (NH 87 82) One of the first mills in Ross-shire - a wind mill, part of the circular building of a tower seen about 1915 when some alterations were made. Next had been a brick stack, Sellar engine. Then a complete Morton steam unit of loco type boiler and steam engine, replaced in turn by an Allan 25 HP engine with 4ft Marshall mill installed 1917. The steading was burnt and a 4ft Wright installed - never very satisfactory.

Lower Gledfield (NH 59 90) Original horse mill, then 3ft Morton and Campbell engine replaced by Reid mill with electric motor.

Lower Pitkerrie (NH 86 80) 30" Morton mill with Campbell engine when farm made into holdings. Reid mill and Hornsby engine in one part, small Wright mill and Lister in another.

Mansfield (NH 77 81) 3ft Morton, Sellar 10 HP gas engine, later tractor, then electric motor.

Meikle Rhynie (NH 85 79) Steam stack with old steam engine. A 4 ft Douglas mill with big old-type Allan engine. Mill finished up at Belmaduthie.

Morangie (NH 76 83) 3'6" roller Morton, 12ft bucket water wheel with segment gear. Replaced by Reid 4ft mill with straw blowers and long belt grain conveyors, electric motor driven.

Newtown (NH 84 81) 24" Wright mill and Souter, Elgin engine.

Pitkerrie (NH 86 78) At one time an old mill with 5 horse levers all gear driven. Then a Clayton 4'6" portable was set in a big shed built alongside the barn, driven by an old-type Allan engine later replaced by electric motor.

Poplars Ardgay (NH 59 90) Light Morton mill. Twelve foot water wheel entirely below ground.

Rhynie (NH 84 79) Traces of a horse mill probably covered but not known. Brick stack old steam engine, 4ft Morton mill. Steam engine replaced by big Campbell engine, tractor drive then electric motor. Mill replaced by Marshall 4' 6" portable.

Rockfield (NH 92 82) A brick stack and overhead engine here until replaced about 1912 by the first lampless Allan engine in Ross-shire. A very old mill, probably having been horse driven until steam took over. This mill was partially rebuilt with parts of the Morton scrapped at Tarrel. Replaced in 1929 with a 4'6" Reid mill.

Seafield (NH 91 83) Before being broken into small units this farm had a Morton steam unit and 3'6" mill. All were removed and a small Reid with Allan engine was put in part of the steading.

Summertown (NH 85 81) A joiner-made mill with old Blackstone engine.

Tarrel (NH 90 80) Very possibly the first threshing mill in the county. Installed by George Anderson from Scotsburn. May have been wind-driven but more likely horses for a start, next a Morton mill. A steam stack was there until about the start of the century, steam being used at that time to prepare cattle food. About 1908 a 4'6" Douglas mill and a 21 HP oil engine by Allan were installed. All removed about 1948 and replaced by a Crighton portable mill.

The Moss (NH 87 78) A 3ft Morton with Campbell engine.

Tulloch (NH 85 76) 3ft Douglas roller mill with old-type Allan engine.

Upper Gledfield (NH 58 90) Ardgay water-wheel-driven Ben Reid mill.

Viewfield (NH 76 81) An old horse mill with round shakers. Replaced by 24" Wright with various engines, last being a Ruston Hornsby. Farm burned. Reid portable installed.

Wester Arboll (NH 86 81) A very old-type Marshall portable driven by an ancient oil engine, make unknown

Wester Rarichie (NH 83 73) Large bucket water-wheel mill, one probably of the 5 mentioned in an 1835 account. First known mill was 4'6" Marshall first driven by water wheel then oil engine.

Wilkhaven (NH 94 86) A brick stack and probably old-time engine. Boiler exploded about the start of this century setting fire to the farm steading. In the new steading a 3'6" Morton with 20 HP Campbell engine was installed - never very satisfactory plant. Farm

buildings again burned. Mill not replaced, engine finished up at Easter Lovat.

1964 Extract From a Letter to Press and Journal²⁸

In this Northern part of the country, say from Nairn to Caithness, there was at one time well over 300 water-powered threshing mills – today only one is known to the writer, still doing the threshing and bruising at a fairly extensive farm in Ross-shire. At another farm in Ross-shire a fixed steam engine drives the barn machiner. That ‘Gallons of Power’ was or is wasted is a debatable question. True, the power was practically free and required little attention, but a dry ‘back end’ or a spell of frost found many a farm ‘from han’ tae mou’ for straw. Not many mills had ‘gain water’ and unless there was a large dam, in an hour or so the mill was losing proper speed and on farms with a number of men time was lost changing to other jobs. Even at ‘Drumdelgie’ where ‘at sax o’clock the mull gaes on’, no reference was made as to how long the men had to sweat ‘making (wiping) the strae’. With the coming of the oil engine and in succession the properly governed tractor came the convenience of being able to thresh at any time and as long as necessary and the water wheel became a back number. Further, as labour became more expensive, strawcarriers, grain conveyors, blasts etc. were being installed for which water power, in most cases, was insufficient. In due course the dams and lades deteriorated, the water which filled them seemed to disappear in as much as at many a farm today it can hardly be credited that at one time there was here a ‘water mull’.

Conclusions Mr Reid’s notes have emphasised that little change occurred in the 50 years up to the 1960s. This contrasts most strongly with the rapid change of the last 25 years, which have witnessed the continuing spread of the combine-harvester. It is now clear that, although some farmers persist in using threshing machines out of preference, most do so because conditions on their farms are not suited to the use of combine-harvesters.

Acknowledgements

The author would like to thank Mr James S Reid (son of the late James Reid), who kindly provided access to his father’s notes, as well as much valuable advice. In addition, Mr and Mrs Durham of Scotsburn House, Kildary, assisted with the location of the various farms; and Miles Oglethorpe and Geoffrey Stell helped with the preparation of the text.

²⁸ Dated December 1964 and written by James Reid in reply to an article published in the *Press and Journal* in November 1964

FISHER ROW: AN INVESTIGATION OF A SEVENTEENTH-CENTURY BUILDING PROJECT FROM ACCOUNTS

John G Harrison

Introduction

On 30th May 1696 the town council of Stirling endorsed the recommendation of a sub-committee that seven cott houses should be built in the agricultural area of Raploch, adjacent to the town and belonging to Cowane's Hospital, one of the town's charities: 'being ane house and two aikres for accomodating of each fisher'. The group of houses came to be known as Fisher Row and this small development was part of a strategy to maintain or augment the town's income from its fishings on the Forth. The scheme failed in this objective as is amply demonstrated by the continuing decline in the value of the fishings and by the demolition of a number of the houses by 1735²⁹.



Fisher Row - from J S Fleming *Old Nooks of Stirling* (1898).

This paper will consider the process of building the houses, their location and structure and the choice and origin of the materials; it is also hoped to show that documentary sources, particularly accounts, may not only give copious, direct and detailed information about the nature and source of building materials but may also vividly illuminate some of the thinking behind the building process.

In recent years there has been a surge of interest in traditional Scottish housing and in peasant housing in particular; and this subject has been most recently

²⁹Harrison, J G, 'Fisher Row; Planned housing and the declining fishing industry of late seventeenth-century Stirling', *Forth Naturalist and Historian* 9 (1985/1986), 113-24

reviewed by Fenton and Walker³⁰. Since few, if any, seventeenth-century peasant houses survive intact in Scotland, information about their construction must either be drawn from documentary sources or by extrapolating back from later structures which have survived. Both methods have drawbacks, the particular disadvantage of the documentary method being that the papers usually refer to craftsman-built structures which may have been sturdier than more typical houses built by the tenants themselves. Whilst there are records of tenants' houses being thrown on the dunghill when their useful life was over, it is now suggested that the standard was improving in the late seventeenth century, at least in some areas³¹. Certainly compared with quoted costs of £30 to £60 Scots (£2.5 to £5 Sterling)³² the figure of £150 per house for the Fisher Row houses was generous indeed. Even in Stirling the same craftsmen who built the fisher houses built 'two houses under on roof' the following year for a mere £66; though in that case there are no costs for such items as the transport of stones and this may have been a re-building³³. Whyte has argued that the increasing use of lime, allowing fully load-bearing walls, was a major advance³⁴; and lime was certainly used in these houses which had gable walls as well as window panes, whilst retaining a traditional cruck-framed structure.

Later in the eighteenth century improved housing would be closely associated with agricultural improvement, and there is some evidence that the Council of Stirling was already influenced by improvement ideas. As early as 1678 they had suggested that ways should be sought to convert the hospital rents to cash rather than grains³⁵. In 1695 they noted that the lands could be let at higher rents if they were improved, and shortly afterwards they had the lands measured, an essential preliminary to improvement³⁶. Admittedly nothing seems to have been done at this time (perhaps not surprisingly in view of the economic collapse of the 1690s) but this does imply that improvement was 'in the air'. In this context a decision to erect craftsman-built houses for workers in a particular industry would be noteworthy even if nothing more were known about the houses. In the case of Fisher Row, however, a wealth of additional material is available.

The Sources

The most important source is the accounts for Cowane's Hospital for 1695-1696 which include detailed payments for every aspect of the work³⁷. The entries are interspersed with other payments but are usually easily distinguished from extraneous matters. Even individual entries can give a vivid glimpse of the process:

³⁰Fenton, A and B Walker, *The Rural Architecture of Scotland* (Edinburgh 1981) John Donald

³¹Whyte, I, 'Rural Housing in Lowland Scotland; the evidence of estate papers', *Scottish Studies*, 19 (1975)

³²Dunbar, J G, 'The Organisation of the Building Industry in Scotland during the Seventeenth Century', *Building Construction in Scotland; some historical and regional aspects* (Dundee and Edinburgh 1976) SVBWG, 7-15

³³Central Region Archives (hereafter CRA), Accounts of Cowane's Hospital 1696-1697, SB5/3/4

³⁴Whyte, I, *op. cit.*

³⁵CRA Council Record of the Burgh of Stirling, B66/25/5, 11th May 1678

³⁶CRA Council Record of the Burgh of Stirling, B66/25/6, 20th May 1695

³⁷CRA Accounts of Cowane's Hospital 1695-1696, SB5/3/4. These accounts are quoted henceforth without further reference

Item to Wm Laurie for cutting of wattels and other two men with him for careing of them and throwing them over the perk dyke £1-16sh

Other entries give more technical information:

Item to David Fergusone for making of 21 tirlesses to the houses at 16sh per pice £18-16sh

A tirls (or tirlass) is a lattice or screen of crossed bars fitted in a window space and in this case tirlses must have complemented the 32 pairs of window-panes which were among the few manufactured items used. The making of the tirlses called for 11 deals which were sawn up and then reassembled using 1900 tacketts and 20 nails.

Another type of entry refers to how the workmen went about the work:

Item for 2 pound 14 unce of pouthier for ryving of the cupples £2-06sh

which implies that the couples or principal beams were split with gun-powder, perhaps to ensure that balanced pairs of beams were produced. These main beams had been drawn from Shiphaugh, to the north of the town and about a kilometre east from the site, using 30 fathoms of tows, an operation overseen by the masons. Other entries refer to payments, usually to named individuals, for the labour of quarrying, building and carriage to the site; and these often give the source of the materials.

In addition to the information given by individual entries, the information in the accounts can be analysed to find, with reasonable accuracy, the costs of the various parts of the process: administration, materials, transport and so on.

Finally, the accounts give negative information. There are, for example, no entries corresponding to floor-boards; and it is doubtful if they include adequate materials for internal partitions or ceilings. So the houses probably had earth floors and were open to the rafters, unless the occupants ordered these materials for themselves.

The other major source is the bills for repairs carried out in 1707 following a fire³⁶. An important fact to emerge from these accounts is that the houses were close together since four, at least, were damaged in the fire; but additionally they amplify the original accounts. They make it clear, for instance, that the thatch was of straw, as might be expected in this arable area. They include a payment to Mr Murray of Livelands for 'on saugh trie to be seils', that is, for a willow tree to form the principal roof beams; usually now called crucks but at this time and in this area

³⁶CRA *Accompt wrought by Wm Laurie att the fisher houses 1707* and *Accompt of the expenc of the ffiser houses that was brout for repering of them* in, SB5/6 Papers relating to Cowane's Hospital, 18th century. The rebuilding work was authorised by the Council on 20th April 1707 and payment authorised on 3rd January 1708

more commonly called couples and here called siles.

Since the principal workers employed on both occasions were David Napier, mason, and William Lawrie, wright, and since both sets of accounts are so obviously complementary I have assumed that structural details implied by the 1707 accounts are relevant to the 1696 building as well. For example the 1707 accounts refer to 'boulding tuo of the gevals' and 'failling the wallheads', processes not specified in 1696 when they would have been hidden amongst more general accounts for building work, but there seems no reason to assume that gable walls or turf courses at the tops of the walls were new features in 1707.

The Building Process

The work was completed between May and November though for some reason only six houses were built instead of the seven envisaged in the original decision. Any hope that dry summer weather would ease transport problems to the green-field site must have been dashed by some of the worst weather of the century³⁹.

The building process falls into a number of phases and the beginning or end of each was marked by a ceremonial jollification for those most closely involved. It would be easy to dismiss these as extraneous to the 'real' work, but ceremonial underscored agreement and signified acceptance that agreements had been fulfilled. It was part of the administration and in the absence of a written contract was of great importance. Even before the initial council decision to build, the sub-committee had visited the site (probably with the artisans) to determine the exact location. A similar group 'sighted' the stones and, very importantly, seven shillings were given to James Napier, the mason, 'in earnest when wee agried'. This opened the way for the erection of the couples or cruck-frame, and when this vital stage was completed by the masons 12 pints of ale were consumed and Bailie Morison, the (deacon) convener and 'others' were present in token that this stage of the work was satisfactorily finished; a drink at this stage was well enough known to have its own name of 'couple-yill'. Once the couples were up the walls could be built around them, the thatch put on and the minor fittings such as doors put in. When all was done there was another celebration for the masons when 'they utred the six houses'. We can thus discern three stages: pre-construction, the erection of the couples and finishing; but should not forget that transport and other off-site work were going forward at the same time.

The masons were responsible for the work on the all-important couples during the initial building. It was they who brought them from Shiphaugh and erected them and this, together with the ceremony marking their erection, emphasises their importance. Interestingly, when the houses were repaired in 1707 James Napier and his brother David, who worked regularly with him by this time, were paid for rebuilding the gables, for opening up spaces in the collapsed walls for the new couples and for rebuilding the walls; but it was William Lawrie, the wright, who charged for 'binding three cuples att 10 sh per peice for meat and fiall'. Lawrie's approach to the preparation of the couples was different from Napier's: he spent a day himself 'dighting' two siles and then 'a day sawing the said seills with myself and sone myself att 12 sh pr day and my sone 6 sh pr day both is 18 sh'.

Since there must have been many more couples in the initial construction, 'pouter'

³⁹ See for instance, Turnbull, R. 'Diary', *Miscellany of the Scottish History Society*, I (1893) and Smout, T. C. *Scottish Trade on the Eve of the Union 1660-1707*, (Edinburgh 1963)

must have been a good deal cheaper as a method of preparation than sawing. In the 1696 construction Lawrie's work seems to have been confined to the lesser roof timbers and other light work, perhaps the thatching (though there were certainly specialist thatchers in the town) and putting in doors and window frames. For the 1707 work he was responsible for the turf courses on the wall heads, thatching and ridging, rebuilding a chimney with timber and clay as well as making new doors.

Some tasks fell outside the special competence of the principal artisans so David Fergusson made the tirlses as we have seen (he was also a wright) and John MacArthur made some unspecified iron work, which may have been the door hangings and locks which were replaced by John Bell (like MacArthur he was a hammerman) in 1707.

Materials and Transport

The principal materials used in the construction were:

Wood-	Couples Skobes Deals	Chimney Stakes Bugar Stakes Wattles	Cabers Templeryce
Minerals-	Lime Water	Clay Sand	Stone Divots/Soil
Others-	Thatch Nails	Window Panes	Iron Work

Wood

We have seen that the simplest of the wood products - wattles used as a base for the thatch and perhaps for partitions - were cut locally by the building workers. Templeryce - hazel rods used for holding down the thatch - were similarly locally available. An adequate supply of both could be easily ensured so long as willow and hazel were allowed to flourish on waste ground. At the other extreme Scottish supplies of deals relied heavily on the well-organised saw mills of Norway and the correspondence of Stirling merchants shows that some were involved in this trade⁴⁰. Between these two extremes of the primitive and the specialised lay the materials for the couples, the lesser roof timbers, chimney-stakes and so on, which were available more or less locally, whose growth required care but which, once grown, needed little preparation.

For the original building in 1696 the couples were brought 'from Shiphaugh', then agricultural land belonging, like the Raploch, to Cowane's Hospital. For the 1707 re-building 'on saugh trie' was bought from one of the nearest lairds. The Shiphaugh tacks were the only ones of the Hospital leases at this time to require

⁴⁰ Scottish Record Office Andrew Russal Correspondence. RH15/106/422/17 John Stivenson to Andrew Russal 23rd July 1681 and RH15/106/492/5 James Russal to Andrew Russal 22nd May 1683. James Watson, a merchant, was the principal supplier of deals to the Council and Hospital at this period, though there is no definite indication that he supplied them for these buildings

the tenants to plant trees⁴¹ and there is a payment in the Hospital accounts for 1695-1696 for 'sneeding' trees in the Shiphaugh, hinting that this may not have been a new feature of farming in the area, though more concrete evidence in the form of earlier tacks is lacking. The Hospital itself embarked on a programme of systematic planting in 1711 but it is not till the mid 1730s that there is local evidence of full self-sufficiency in this type of wood⁴², a position only attainable following a long period of systematic management.

Most of the balance of the wood - cabers and various roof timbers - came from Kier and Kippenross, and the accounts mention discussion and agreement with the forrester or wood-cutter there. These timbers were long, straight poles and these woods were probably coppiced woodland, part of the growing industry of the Highland margins⁴³. Some of this wood was brought down part of the way by boat, evidently to reduce transport costs.

Minerals

These, except for the lime, were locally available at little cost other than that of winning and transporting them. Lime, the product of an industrial process, had become more readily available in Stirling during the course of the seventeenth century and, at least from the mid century, all the records which give any indication of its origin refer to it being bought from the area of Craigend and the middle reaches of the Bannock Burn⁴⁴. Nonetheless, the five chalders bought for the building (their precise origin is not given) are not notably generous when compared with the 11 chalders bought by the Hospital for the building of two barns in 1678-1679 or even with 2 chalders bought by Spittal's Hospital for building a single house (with internal wooden stairs) as early as 1642-1643.

Stones were a continual problem as is indicated by regular prosecutions for stealing stones from derelict buildings in the town, and even from garden walls. New stones required to be quarried and transported which made them expensive. Old ones were re-used when possible and no new stones were involved in the 1707 repairs at Fisher Row. It took two men 123 days to quarry stones in 1696 which cost £123 and the transport may have cost almost as much again. There is no direct indication of the source of these stones and they may have come from the nearby Raploch quarry which was certainly active by 1706⁴⁵. More probably a new quarry was opened up specifically for this building on the nearby Castle Hill since there is no sign of payment to the owner of the Raploch quarry for its use. Some further stones were gathered from the adjacent fields but the small amounts paid for the work indicate that these were only a trivial part of the whole requirement.

A total of 4277 loads of sand, marl, clay, water and stones were brought to the site. Since recent (December 1986) excavations for a new building show that the slightly rising ground on which the houses stood consists of deposits of layered sand

⁴¹CRA Tacks of the Town's and Hospital's Lands 1696-1730, B66/25/756/1

⁴²CRA Papers Relating to Cowane's Hospital, Eighteenth Century, bundle for crop 1710 and Minutes of the Managers of Cowane's Hospital 27th January 1737, SB5/1/1

⁴³Lindsay, J M, 'Some aspects of the timber supply in the Highlands 1700-1850', *Scottish Studies*, 19 (1975), 39-53

⁴⁴Harrison, J G, *Lime supply in seventeenth century Stirling; a note* (1988). Typescript available in Central Region Archives and from Stirling District Libraries

⁴⁵CRA Council Record of the Burgh of Stirling 15th June 1706, B66/20/7

showing signs of extensive working, it seems reasonable to assume that the sand was acquired on the spot; and the fact that no differentiation in cost is made between the various types of mineral load argues that all these minerals were brought only comparatively short distances, as does the low cost per load. Water (a burne-stone was supplied for carrying it) would have been brought only a few yards from the Bridge Mill lade; and divots, no doubt used for 'failing the wall heads' and for ridging the roof, would not have been a problem at this green-field site. Robert McGibone was paid £1-11sh-06d for casting 1060 of them and there are no additional transport costs.

Analysis of Costs

Celebrations and Administration	£9	(1%)
Utensils and Manufactured Goods	£64	(7%)
Other Materials	£293	(32%)
Salaries and Wages	£333	(36%)
Transport	£219	(24%)

There was an obvious and great reliance on simple, local materials. Manufactured items - lime, nails, iron-work and glass for instance - harbingers of improvement, account for only a tiny proportion of the costs and were incorporated into a largely traditional structure.

The low cost of manufactured items was a direct result of the reliance on local raw materials and of the building artisans doing much of the finishing work themselves. The contrast with a modern house, for which 70% of the on-site costs might be attributable to manufactured items - from sanitation to bricks - underlines the pre-industrial nature of the houses. That the tenants themselves might have been expected to provide the analogues of many modern items heightens the contrast yet further.

One consequence of reliance on simple materials was the low costs for transport, despite the huge number of loads brought to the site. The cost per load was small, most costing only 10d to 12d compared with 2sh to 3sh for many loads brought into the town itself from the immediately surrounding area, or 5sh for loads brought to Fisher Row from Kippenross some 6km [3.73 miles] away. Had stones, sand etc. been brought greater distances so that the cost per load increased to, say, 2sh the total cost would have risen by £189, a rise of 15% and this, surely, explains the siting of these houses a kilometre [0.62 miles] from the river, despite their intended use for fishermen.

The houses built by Napier and Lawrie were the houses of a community still largely self-sufficient in skills and materials. They would still have been familiar, if rather old-fashioned, in the early nineteenth century and indeed Fisher Row was inhabited till the 1860s. The use of lime strengthened the walls and was the first step towards making them fully load-bearing, though that process was here only begun with the use of gables to supplement more traditional couples. Perhaps the most significant feature of the buildings was that the employment of artisans and the expenditure of over £900 Scots was felt to be a justifiable and necessary investment in a local industry. This surely indicates rising expectations and a recognition that these must be met.

Acknowledgements: The author would like to thank Mr G Stell and Mr G Dixon for their encouragement and their advice on the preparation of this paper.

ORKNEY WIND-ENGINES: DRIVE FOR THRESHING MACHINES

Graham J Douglas and Miles K Oglethorpe

Introduction

Although not usually classed with more conventional windmills, Orkney wind-engines are extremely interesting and significant examples of the use of wind-power, and were used to drive small threshing machines⁴⁶. They were therefore included as a distinct group within the Scottish Industrial Archaeology Survey's (SIAS) Scottish Windmills Survey⁴⁷. The policy of the survey was to record every example where remains existed, and with several Orkney islands still to be visited, a dozen sites have so far been identified and recorded (see Gazetteer below and Figs 3 and 4). In addition, documentary evidence has helped in the identification of other sites where no physical evidence on the ground has survived.

To date, it seems that very little has been written about the construction, design and operation of these machines. It is therefore the intention of this article to provide a written account of the twelve sites that have been recorded, and to support the text with illustrations showing how the machines operated. This has been made possible by the discovery of a number of photographs which have been most valuable in the interpretation of field evidence, and by verbal evidence from local people. Several of them can remember using or witnessing the use of specific machines, and one such man (Mr Tom Mackay) is still proud of having childhood scars on his hands and fingers caused by catching them in the gears of the wind-engine on his family croft at Maeback.

Locating Orkney Wind-Engines

Secondary sources contain occasional references to wind-engines⁴⁸, including a valuable and informative illustration in Fenton and Walker⁴⁹, which was to give vital clues about the form and function of the machines once the survey was under way. Such work was also assisted by a number of fine photographs in the care of Kirkwall Public Library. However, most references in the literature were not particularly helpful, and some were even misleading⁵⁰.

In general, wind-engine sites have not been easily recognisable from Ordnance Survey Maps, and map research has therefore taken on a secondary function. The 25 inch to one mile scale has tended to be the most useful, in many cases confirming evidence on the ground or that provided by local people. Unfortunately, problems have arisen as a result of regional variation in map quality. This is best illustrated by the 25 inch maps of 1900, which mark wind-engines on Sanday, but

⁴⁶Donnachie, I L, and N K Stewart, 'Scottish Windmills - An Outline and Inventory', *PSAS* XCVIII (1964-66), 276-99

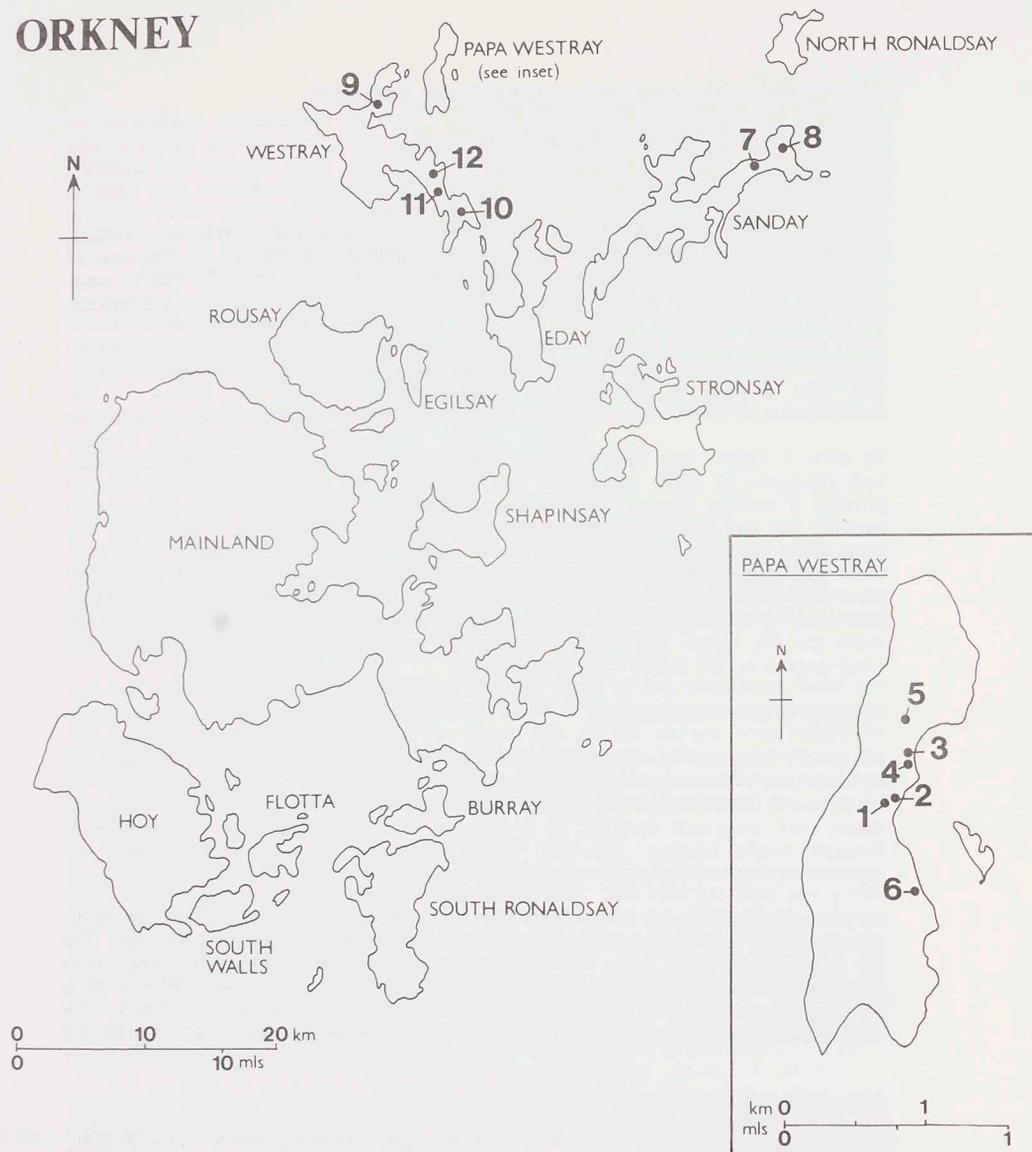
⁴⁷Douglas, G J, J Hume and M K Oglethorpe, *Scottish Windmills: A Survey* (Glasgow 1984), Scottish Industrial Archaeology Survey

⁴⁸Donnachie & Stewart *op. cit.*; Leith, P and S Spence, 'Orkney Threshing Mills', (Dundee and Edinburgh 1977) SVBWG, 3- 16; Fenton, A and B Walker, *The Rural Architecture of Scotland* (Edinburgh 1981), John Donald, 176

⁴⁹*op. cit.*

⁵⁰Butt, J, *The Industrial Architecture of Scotland* (Newton Abbot 1967), David & Charles, 333

ORKNEY



KEY TO ORKNEY WIND-ENGINE SITES:	<u>PAPA WESTRAY</u>	<u>SANDAY</u>	<u>WESTRAY</u>
(Discovered by December 1986) ●	1. Maeback	7. Rusness	9. The Links
	2. Roadside	8. Lettan	10. Sanquhar
	3. North Via		11. Swartaback
	4. South Via		12. Hillhouse
	5. Gowrie		
	6. Hookin		

FIGURE ONE: Recorded Wind Powered Threshing Machine Sites in Orkney.

fail to do so on Westray. In the case of Sanday, they are marked as 'windmill', but in some cases have been moved, indicating that some of the surviving examples have been reconstructed since 1900. In the cases where the wind-engines are not marked on the 2nd edition maps of 1900, it may be that they were not built until after the survey of that year, or that the surveyor deemed a small projection 2 metres square not worthy of record. The use of 1st edition Ordnance Survey maps (also 25 inch maps, but dating from 1880) has proved to be still more complicated. These maps display a very large number of windmill sites, but in very few cases reveal the function of the windmills. Although it is likely that many of the sites marked were wind-engines, it is impossible to assess the numbers involved, especially since other forms of threshing, grinding and pumping windmill were known to proliferate. In the absence, therefore, of dating evidence from maps, it must be assumed that such wind-engines date from the mid nineteenth century onwards, when small threshing machines had been developed locally for use in Orkney farms and crofts.

Although the survey of Orkney wind-engines is not yet complete, the distribution of sites appears to be heavily concentrated on the three islands of Papa Westray, Westray and Sanday. A single site has been identified on mainland Orkney; and elsewhere, reference has only ever been made to one other site, which was in Shetland.

The anatomy of a wind-engine

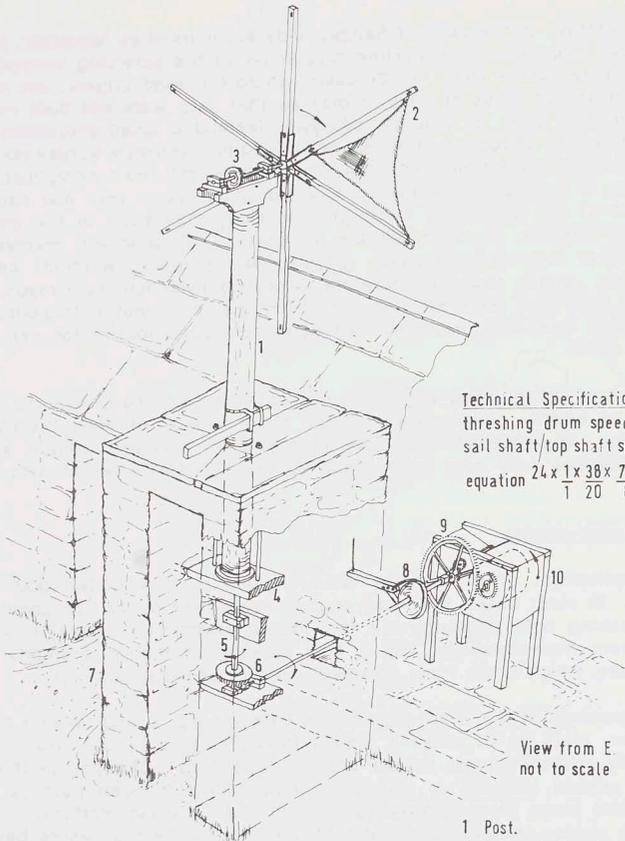
The form and mechanism of the Orkney wind-engines is best understood by referring to Fig. 2. In most cases, the wind-engines were built on to (or against) the wall of a threshing barn (although the few known examples of engines with wooden towers were free-standing). Fig. 2 is a drawing of the wind-engine at Sanquhar on Westray, which is the most complete survivor of the group.

The principal components of the wind-engines are listed in Fig. 2, and include two rectangular masonry piers up to about 3 metres high (7). In plan, the two piers together are usually about 2 metres square, and are topped by a bridging platform of flagstones. A central (circular or square section) hollow wooden post (1) is situated between the stone piers, protruding through the flagstone platform. The vertical drive-shaft passes through the centre of the post to the top, where bevel gears (3) connect it to the top (sail) horizontal shaft, which itself rests upon a pair of cross-members forming a small top platform. Towards the bottom of the vertical shaft, the central post is supported by a bridging piece (usually flagstone, but sometimes wood) between the two masonry piers (4). However, the vertical drive shaft itself passes through a hole in the platform to the lower horizontal shaft, to which it is joined by a second set of cast-iron bevel gears (6), in this case 1 to 1.9 ratio.

The drive shafts are all of wrought iron, and normally of circular section. In most cases, they run in wooden bearings (eg. 5). The top horizontal (sail) shaft carries the sails, sail arms and sail hub (see 2), and the upper set of bevel gears (3). The lower shaft carries the lower set of bevel gears (6), and passes through the barn wall to drive a flat pulley (a brake wheel, with lever and band, see 8), and a spur gear (9). The latter provided drive to the small gear on the side of the threshing machine at a ratio of 1-9.5. Thus, one revolution of the sails turned the threshing drum about 18 times. Assuming a desired drum speed of 430 rpm, this indicates that an optimum speed of the sails was 24 rpm, and in high wind conditions, excess speed could be contained by applying the brake (8) and/or reefing the sails.

The sails themselves were usually canvas, and were either triangular or rectangular (the former in the case of Sanquhar). They were fixed in position on sail arms,

FIGURE TWO: Anatomy of an Orkney Wind Engine and Threshing Machine at Sanquhar, Westray.



Technical Specifications

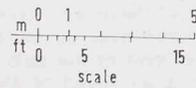
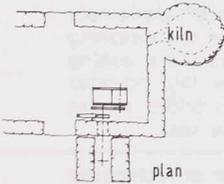
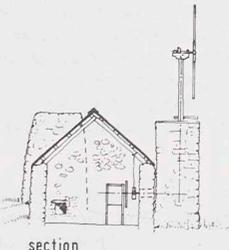
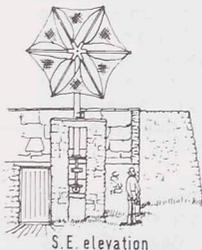
threshing drum speed c. 430 r.p.m.

sail shaft/top shaft speed 24 r.p.m.

$$\text{equation } \frac{24 \times 1 \times 38 \times 76}{1 \times 20 \times 8} = 433$$

View from E
not to scale

- 1 Post.
- 2 Sail arms & canvas sails.
- 3 Top shaft & bevel gears, ratio 1:1.
- 4 Post support.
- 5 Upright shaft supports & bearings.
- 6 Lower shaft & bevel gears, ratio 1:1.9.
- 7 Masonry piers.
- 8 Brake wheel & lever.
- 9 Spur gears, ratio 1:9.5.
- 10 Threshing machine.



SANQUHAR,
Rapness,
WESTRAY.
HY 50B.417.

G.J.D. '87.

which were usually wooden, and at Sanquhar, were tapered and square sectioned. At both ends of each sail arm there were slots or hooks for the ropes used to hold the sails in position. An example at Rusness (Sanday) has wooden arms with feathered cross-slots used for holding a lighter wooden framework which carried the sail cloth. The sail arm hubs were made from cast iron, and had either 8 or 6 channel section slots for the sail arms. There are only two surviving sites at which remains of the sail arms can be found (Sanquhar and Rusness).

The threshing machines (10) were usually small wooden-framed models with a sheet-metal-covered threshing drum. They were designed to be hand-powered, and were therefore effectively driven by the power supplied by the wind-engine. No makers were traced for the threshing machines, and all those recorded were of the roller-feed variety.

Conclusions

Although several islands are still to be surveyed, it is possible to make a few generalisations about Orkney wind-engines, particularly with respect to minor variations in design, and the two types of engine so far encountered.

The majority of wind-engines traced to date are those with masonry piers. Nevertheless, examples comprising a wooden tower with rope drive to the threshing machine have also been noted in documentary and photographic material. None of these wooden-towered machines seems to have survived, partly because they were less sturdy than their masonry counterparts, and partly because of the demand for wood, a scarce resource in Orkney, where there are very few trees. One of the most significant features of the engines in the wooden towers appears to have been the fixed direction of the sails. Photographs also suggest that these machines usually had four arms with rectangular sails fixed to lightweight feathered wooden frames attached to the sail arms (sometimes referred to as English-type sail⁵¹).

It seems that most of the engines with masonry piers had six or eight arms and triangular sails, with the exception of the two examples at Rusness on Sanday, which had six feathered rectangular sails, again on lightweight wooden frames. Minor features so far noted have included a number of similarities between the three sites at Maeback, North Via and Sanquhar, each of which has the same type of cast-iron sail hub. This suggests that these hubs may well have been relatively standard pieces available from a specialised foundry or supplier.

The engines at Links and Sanquhar had similar band-brake systems with brake-wheels mounted between the wall and the threshing machine. The lever that operated the brake-band had a rope secured to the roof timbers above, and could be twisted to alter pressure on the brake, thereby acting as a governor controlling the speed of the threshing machine. In contrast, the Rusness example had a lever and pad acting on the flat-belt pulley drive to the barn, and was operated from inside the barn by a cord attached to the lever. No other brake systems were found to have survived at the other sites, but in all cases, the speed of the machines could be ultimately controlled by altering the sail area.

In general, fieldwork has shown that wind-engines were extremely important features within Orkney. Indeed, such was their efficiency and suitability to the local crofting and small-holding system that several were still in use into the 1960s. It is

⁵¹ *op.cit.* Leith and Spence

therefore sad that a fuller record of a machine in operation - undoubtedly an evocative sight - was not made.

GAZETTEER OF RECORDED ORKNEY WIND-ENGINES

1 (Fig. 3) NAME: Threshing Machine, Maeback NGR: HY 495524
(mostly demolished)
ISLAND: Papa Westray PARISH: Westray
RECORD: Fully recorded, photos DATE: 28.05.1981

This wind-engine has been demolished and the site subsequently built over. However, the site remains of interest because of a photograph dating from 1911 which shows the current owner's father standing on top of the masonry piers next to the upright shaft. The picture also shows the six triangular sails unfurled and in position. In addition to the photograph, further surviving evidence is that of the three main drive-shafts from the engine, and the threshing machine itself. Although not complete, the shafts (wrought iron), and the bevel gears and sail shaft hub (all cast iron) are all in good condition. In contrast, the threshing machine (made predominantly from wood), which had been operated until the 1960s (driven by a small stationary petrol engine as a replacement to the wind-engine), had rotted away. (Fig. 3)

2 (Fig. 3) NAME: Threshing Machine, Roadside NGR: HY 495525
ISLAND: Papa Westray PARISH: Westray
RECORD: Fully recorded, photos DATE: 28.05.1981

Both masonry piers of this wind-engine have been partly demolished, and only the lower cross-members (wood) are in position. (Fig. 3)

3 (Fig. 3) NAME: Threshing Machine, North Via NGR: HY 498532
ISLAND: Papa Westray PARISH: Westray
RECORD: Fully recorded, photos DATE: 29.10.1981

Only one of the two masonry piers of this wind-engine have survived, and it is reduced in height. However, the barn (now disused) has retained its threshing machine, and also contains the top horizontal shaft with its cast-iron sail-arm hub, made to accommodate six arms. The threshing machine is complete, and details of its operation and technical specifications have been recorded. All the threshing machines at Orkney wind-engine sites are very similar, having feed rolls for the sheaves. Outside Orkney, most machines of this size are designed to be hand-powered and hand-fed, and do not usually have feed rolls.

4 (Fig. 3) NAME: Threshing Machine, South Via NGR: HY 498532
ISLAND: Papa Westray PARISH: Westray
RECORD: Fully recorded, photos DATE: 29.10.1981

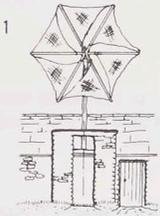
Despite the fact that this unit operated until 1958, only the two masonry piers, the cross-members, and the vertical and lower horizontal drive shafts remain in place. All other components have been removed.

5 (Fig. 3) NAME: Threshing Machine, Gowrie NGR: HY 497537
ISLAND: Papa Westray PARISH: Westray
RECORD: Fully recorded, photos DATE: 29.10.1981

One masonry pier of this wind-engine has survived in its entirety, whilst the other has been partly demolished. However, the cross-members, which are made from both stone and wood, have remained in place. The stone cross-member supported the upright shaft guide, whilst the wooden cross-members carried the bearings (also wood) for the lower end of the vertical shaft.

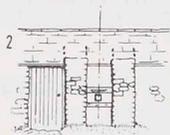
6 (Fig. 3) NAME: Threshing Machine, Hookin (site of) NGR: HY 499513
ISLAND: Papa Westray PARISH: Westray
RECORD: Description & photos only DATE: 28.05.1981

This wind-engine has been demolished and its site built over, but has been included because of the wealth of technical detail provided by a photograph in the Kirkwall Library collection (not dated, but c1910). This reveals it to be an unusual example because of its eight sail arms (as opposed to the more usual six or four), which supported triangular (not rectangular) sails. The view shows a person standing on top of the masonry piers next to the upright shaft-guide, and from this, the size of the sail arms would appear to be about 3.9m in diameter.



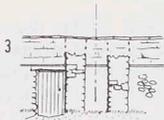
a. bevel gear 26 teeth.
 b. bevel gear 25 teeth.
 Piers demolished, some
 machinery survives.

MAEBACK,
 Papa Westray.
 HY 495 524.



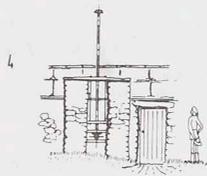
No surviving machinery.

ROADSIDE,
 Papa Westray.
 HY 495 525.



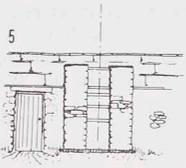
Only sail shaft and the threshing
 machine survives.

NORTH VIA,
 Papa Westray.
 HY 498 532.



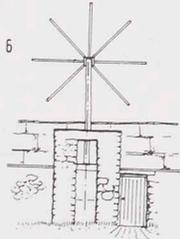
a. bevel gear 20 teeth.
 b. 1:2.2 bevel gears.

SOUTH VIA,
 Papa Westray.
 HY 498 532.



No surviving machinery.

GOWRIE,
 Papa Westray.
 HY 497 537.



Now demolished, details based
 on a photograph.

HOOKIN,
 Papa Westray.
 HY 499 513.

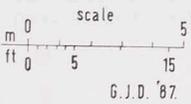


FIGURE THREE: Comparative Drawings of Wind Engines on Papa Westray (all to scale)

7 (Fig. 4) NAME: Threshing Machine, Rusness NGR: HY 736444
ISLAND: Sanday PARISH: Lady
RECORD: Fully recorded, photos Date: 14.09.1985

Until recently, this was a very complete wind-engine with only five of its six sail arms, and the sail frames missing. Unfortunately, the upright shaft guide has corroded where it meets the capping stones at the top of the masonry piers, and has as a result caused the collapse of the engine. Nevertheless, the two masonry piers still survive, and are detached, being located 1.5m away from the end wall of the threshing barn. The tower and the barn are connected by a single wall of the same height as the barn. Projecting from the face of the wall is a course of flagstones which probably formed part of a cover for a drive belt to the barn.

The drive from the top horizontal (sail) shaft to the lower shaft (and the threshing machine) is transmitted by means of a flat belt drive. The drive pulley on the lower shaft also acted as the brake (or governor), and measures 0.74m in diameter by 0.08m in width. Located between it and the drive belt is a wooden lever which was applied by pulling a rope from inside the barn in an arrangement which allowed the user of the threshing machine to control its speed from within the barn. The brake-lever acted upon the face of the pulley.

The ratio of the top horizontal (sail) shaft to the drive pulley was six to one (ie: one revolution of the sails turned the drive pulley on the lower horizontal shaft six times). The mechanical advantage of the brake lever was approximately nine to one.

8 (Fig. 4) NAME: Threshing Machine, Lettan (site of) NGR: HY 757454
ISLAND: Sanday PARISH: Lady
RECORD: Description & photo DATE: 17.09.1985

This site has been included here because of information supplied by several local people (who were able to provide a photograph and specific details of the wind-engine). The unit consisted of a wooden tower, with fixed sails (facing south). The drive from the tower was through a rope belt system to a second horizontal shaft at the base of the tower. This lower shaft carried two pulleys, one being in line with, and driven by, a pulley on the sail-arm shaft. The second pulley on the lower shaft was in line with the threshing barn, and a rope belt transferred drive to another pulley on a shaft powering the threshing machine. The tower was located about 6m from the end of the barn.

The unit had four sails which were rectangular in shape, measured about 5m in total diameter, and were attached to a wooden frame on the sail arm. Each sail was approximately 1m wide. The tower and engine were built in about 1934, and remained in use until about 1950.

9 (Fig. 4) NAME: Threshing Machine, The Links, Pierowall NGR: HY 441498
ISLAND: Westray PARISH: Westray
RECORD: Fully recorded, photos DATE: 30.05.1981

The masonry piers and their cross members are complete, but the upper horizontal shaft, the vertical shaft and its guide, and the sail arms are missing. The lower horizontal shaft remains in place, and on its end inside the threshing barn is the

wooden brake wheel, 0.28m diameter by 0.08m wide. The brake lever pivot shaft hole can still be seen in the wall.

10 (Fig 4) NAME: Threshing Machine, Sanguhar
ISLAND: Westray
RECORD: Fully recorded, photos
NGR: HY 508417
PARISH: Westray
DATE: 10.11.1981

This wind-engine is probably the most complete unit in Orkney, and has lost only its sails and five of its six sail arms. The drawing which illustrates the anatomy and operation of the Orkney wind-engines was based on this example.

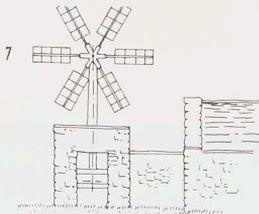
One revolution of the top horizontal (sail) shaft turned the lower shaft twice through the two to one ratio of the lower bevel gears. The ratio of the threshing drum to the sail shaft is 21.4 to one. The brake is complete, and the mechanical advantage for the lever is 13 to one.

11 (Fig 4) NAME: Threshing Machine, Swartaback
ISLAND: Westray
RECORD: Fully recorded, photos
NGR: HY 495428
PARISH: Westray
DATE: 11.11.1981

The masonry piers and cross members are all that remain at this site.

12 (Fig 4) NAME: Threshing Machine, Hillhouse,
Skelwick
ISLAND: Westray
RECORD: Fully recorded, photos
NGR: HY 488444
PARISH: Westray
DATE: 11.11.1981

Only the masonry piers, the cross-members and the lower horizontal shaft survive. However, the owner reported that the wind-engine was installed in 1926, and was last used in 1945.



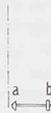
- a. 1:2 bevel gears.
- b. 1:3 bevel gears.
- c. flat belt pulley, 0.74 m. dia. (brake wheel.)

RUSNESS,
Lady,
Sanday,
HY736444.



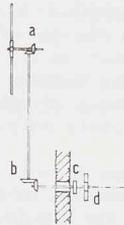
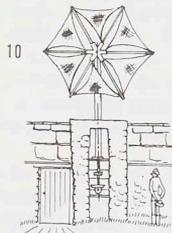
Now demolished, details based on a photograph.

LETTAN,
Lady,
Sanday,
HY757454.



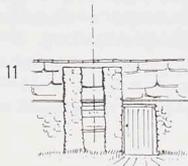
- a. bevel gear 15 teeth.
- b. brake wheel 0.28 m dia.

THE LINKS,
Pierowall,
Westray,
HY441498.



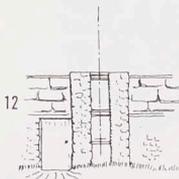
- a. 1:1 bevel gears.
- b. 1:1.9 bevel gears.
- c. brake wheel.
- d. 1:9.5 spur gears.

SANQUHAR,
Rapness,
Westray,
HY508417.



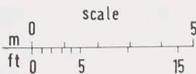
No surviving machinery.

SWARTABACK,
Rapness,
Westray,
HY495528.



No surviving machinery.

HILLHOUSE,
Skelwick,
Westray,
HY488444.



G.J.D. '87.

FIGURE FOUR: Comparative Drawings of Wind Engines on Sanday and Westray (all to scale)

DEMOLISHED WIND-ENGINE SITES (Documentary Evidence Only)

NAME: Threshing Machine, Chinegar	NGR: HY 325061
ISLAND: Mainland	PARISH: Orphir
RECORD: Description & photo	DATE: 24.10.1981

Apart from the threshing machine, there are no surviving remains at this site. According to Donnachie and Stewart⁵², this engine did not have the usual pair of masonry piers, but instead had a wooden tower located away from the threshing barn. Power was transmitted to the threshing machine by means of a rope or belt drive. It is likely that the engine was fixed, and that the sails could not therefore be turned into the wind.

NAME: Threshing Machine, Cuppin	NGR: HY 497505
ISLAND: Papa Westray	PARISH: Westray
RECORD: Description & photos	DATE: 07.04.1984

A photograph (dated about 1920) shows a group of people standing outside a croft and its wind-engine. The engine had six sail arms, each with triangular sails. (The photograph was provided by Dr Graham Ritchie).

NAME: Threshing Machine, Rusness	NGR: HY 740441
ISLAND: Sanday	PARISH: Lady
RECORD: Description & photo only	DATE: 17.09.1985

Two photographs owned by the local postmaster, Mr Ken Foubister, reveal that the engine drove the threshing machine via a flat belt drive which passed through the end of the threshing barn. The engine itself had six rectangular-shaped sails mounted on light-weight frames, all of which were angled to the main sail arms, thereby giving the necessary sail 'slope'. The engine was housed within a wooden tower in a similar arrangement to the other wind-engine at Rusness (No 7).

⁵² *op. cit.*

LOFTED OPEN-HALL FARMHOUSES IN SCOTLAND: A PRELIMINARY STATEMENT

Bruce Walker

Documents relating to pre-improvement farm buildings often refer to the farmer's hall, and farm names through Scotland carry the descriptive prefix 'haton' a corruption of 'ha'toun', Scots for 'hall town'. This poses the question - 'What were these halls like?' We do know something of the overall dimensions, based on the number of structural bays⁵³, but the honest answer is that "we don't know". When faced with this situation, the only course of action open to the researcher, is to link the few known documents and descriptions to contemporary drawings, paintings and prints, in an effort to create an impression of the internal finishes and fittings. An impression of this type can then be helpful in creating links to surviving structures: links that are not always apparent when reading the original documents.

One type of hall, found on large progressive farms during the early stages of the agricultural revolution, contained lofts at one or both ends. The earliest located references are in two appraising tickets prepared in 1725⁵⁴. These are from the Redcastle Estate in the parish of Inverkeilor, county of Angus. The farms to which they refer are large and are situated close to the coast where produce could be shipped to a number of market centres. The accommodation provided at Priestfield (NO 670490) consisted of a hall with four windows, a chimney, a boarded timber runwall (cross-wall) and three doors. The loft in the hall is described as having five joists. In addition there was a south barn, a stable, an eight-oxen byre, and an outer chamber. The relationship between rooms and their position on the farmstead is not given but the 'runwall' would cross from front to back of the hall and 'five joists' probably represents between six and eight feet of floor space. Assuming that the couples or crucks were spaced approximately eight feet apart, the hall would have been sixty-four feet long.

The hall at the neighbouring farm of Mains of Redcastle (NO 687503) was much larger, having a loft of twenty-nine joists in a hall of twenty-three couples or crucks. The remainder of the accommodation was similar to that at Priestfield.

Mains of Redcastle and Priestfield were unusual in the Angus area at that time, being the only two of the many farmhouses covered by appraising tickets to have this particular feature. This situation is likely to have changed as the century progressed, as by 1807, halls of this type were to be found on the richer farms of Kincardineshire some twenty to thirty miles to the north. The improvement appears to have started about 1770 and the new class of building is described as follows:

The walls, erected of better materials and more compact, were raised to a man's full height, instead of, as formerly, being obliged to bend down when entering at the door; and in place of a slit or hole in the wall to enable the inmates to distinguish day from night, the glass window was adopted; but in general not exceeding four panes. The different apartments still continued to be divided by the furniture. In the better end of the house, an iron gate was introduced into the

⁵³ Walker, B. 'Farm Buildings and Archaeology: The Evidence of Appraising Tickets', *Scottish Archaeological Gazette* 8 (Summer 1985) 8-12

⁵⁴ *SRO-GD45/18/1275 - Panmure. Priestfield and Mains of Redcastle.* Walker, B. *The Agricultural Buildings of Greater Strathmore 1770-1920* (unpublished PhD thesis: University of Dundee 1983), 157

fireplace, and this room was rendered more comfortable by having a loft over it for holding lumber. In the kitchen end, neither of these refinements were to be seen. The bare kebbers were the only ceiling; while fuel, generally peat or broom, was kindled on the hearth by the gable, and the smoke had to find its way through an aperture in the roof, or, more commonly, made its escape by the door. The horses and cattle were put up in a similar penurious style, and generally in the same range of building with the dwelling house. But 'the barn' was generally in a separate building, and was always the best house about the place...the good old muck-midden, or dunghill, still kept its immemorial stance by the house door.

The roofs of all the houses were composed of feal, or thin turfs, spread upon a profusion of unshapely timbers, and carefully thatched from year to year with a thin covering of straw or rushes tied on with ropes of the same materials, like a hay sow⁵⁵.

The same writer describes the farmhouses of the Lothians at this time as being of the 'but and ben' type with a low attic storey⁵⁶. This appears to be a late stage in the lofting of the hall prior to the introduction of two-storey farmhouses. It is also the forerunner of a building type which remained popular for the next hundred and fifty years as it gradually moved down the social scale. The 'but' end of these houses remained open to the apex of the roof whereas the 'ben' end and 'mid closet' were floored to form a loft. Large numbers of these houses were erected in South Uist between the 1880s and 1928. The latest example in this area was built circa 1935 on a croft at Howbeg, South Uist (NF 764351). This building was occupied in an unaltered condition until 1987⁵⁷. The majority of these South Uist houses had a form of ceiling inserted in the late 1940s and 1950s. These ceilings were applied to the inclined rafters of the roof, the only horizontal area being under the collars near the apex of the roof. In this way they continued the tradition of the double volume kitchen or 'hall' coupled with a loft over the room and mid closet.

Returning to the early illustrative material: a black chalk drawing, tinted with watercolour, by Sir David Wilkie (1785-1841) appears to illustrate an open hall with a loft at one end⁵⁸. The drawing entitled 'The Wool Spinner' depicts a household scene in a room or 'hall' open to the rafters. A woman is working a 'muckle wheel' in front of a large dresser, decorated with plates, and standing against an internal gable wall or 'runwall'. This wall is penetrated by three doorways, one on either side of the dresser and a third at high level, slightly off centre, to the right of the dresser. The upper doorway is approached by means of a ladder.

The farmhouse on the Mellon homestead at the Ulster-American Folk Park, Omagh,

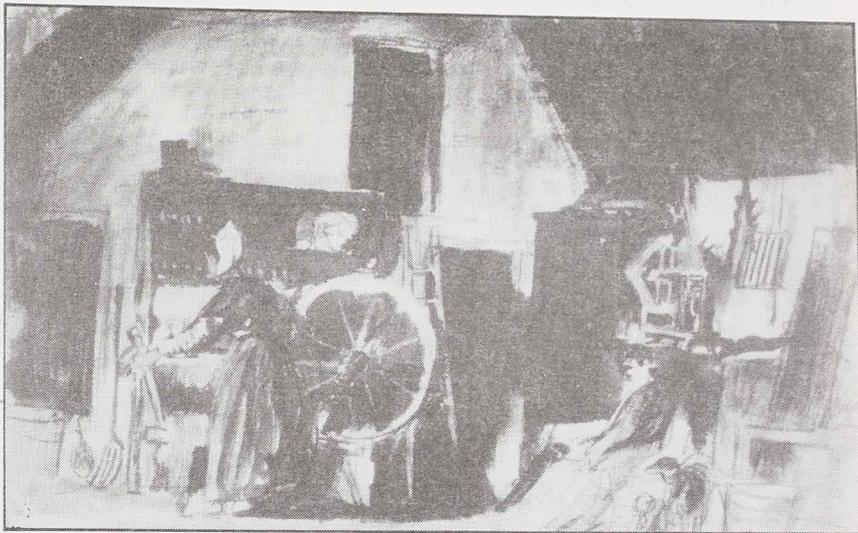
⁵⁵ Robertson, G. *Rural Recollections: or the improvement in agriculture and rural affairs* (1829), 409-11

⁵⁶ *Ibid* 70-100 Fyfe, J G. *Scottish Diaries and Memoirs 1746-1843* (1942), 261-74

⁵⁷ Verbal information from a number of sources in Howbeg and Howmore, South Uist

⁵⁸ *NGS - D4688* Reproduced by kind permission of the National Galleries of Scotland

Co. Tyrone, Northern Ireland has an almost identical arrangement in the kitchen. Here the doorway to the small room, to the back of the parlour, has been moved from the kitchen into the parlour but otherwise the Wilkie drawing could have been prepared in this house. Reliable informants told of a similar house near Carrickfergus⁵⁹ with an identical arrangement of doors to those depicted by Wilkie.



Sir David Wilkie - 'The Wool Spinner'

The lofted hall appears to have been a common building type in Ireland in the nineteenth century and a number of variations on this arrangement can be seen in the buildings collection at the Ulster Folk and Transport Museum, Cultra Manor, Holywood, Co. Down. These include a low loft off the kitchen over a byre using the slope of the ground to keep the loft within a few steps of the kitchen floor⁶⁰. Another farmhouse has a three-quarter loft leaving a well, the width of the kitchen canopy chimney, over the main work area⁶¹.

A drawing by David Allan (1744-1796) dated 1785 and entitled 'The Penny Wedding' depicts a large room in which people are eating, drinking and dancing. The room has windows on both sides and the far end is lofted with four joists⁶². This is probably an early version of the open hall where the loft, and the space under it, is left open to view rather than being enclosed behind a runwall or an internal gable. A crude drawing of similar composition shows a similar arrangement, in a room without windows, where the loft is being used for storage.⁶³

⁵⁹ Verbal information from Dr Philip Robinson, Ulster Folk and Transport Museum and Professor R Buchanan, Institute of Irish Studies, The Queen's University of Belfast

⁶⁰ House from Cruckaclady, Plumbridge, Co Tyrone, Northern Ireland in UFTM, Cultra Manor, Holywood, Co Down

⁶¹ House from Ballydugan, near Lurgan, Co Armagh, Northern Ireland in UFTM, Cultra Manor, Holywood, Co Down

⁶² NGS - D/N(7)613 Reproduced by kind permission of the National Galleries of Scotland

⁶³ NGS - D/430

The loft in the Wilkie interior is reminiscent of the first floor hall and lofted end rooms recorded by Geoffrey Hay and Geoffrey Stell in the former Bay Horse Inn, Panha', Dysart, Fife (NT 303929) in 1969, prior to the building's conversion. This building is much earlier than the farmhouses being discussed and was obviously built to serve a higher social class but the relationship is still obvious. The rooms under the lofts were superior apartments as each contained a painted ceiling: that to the east dating from around 1583 and that to the west somewhat later⁶⁴. The lateral fireplace in the hall of this building may give some clue as to the organisation of halls with lofts at both ends.



David Allan - 'The Penny Wedding' (1785)

⁶⁴Walker, B. and G Ritchie, *Exploring Scotland's Heritage: Fife and Tayside* (1987), 62-4

Although there is an obvious physical relationship between Scots farmers' halls and the Bay Horse Inn, the farmers' halls appear to be part of the 'hallen-haus' tradition of northern Europe⁶⁵. There is a great difference in scale and building quality between the European hallen-haus and the Scots farmer's hall but in each region the buildings comprise three main areas: the sleeping apartment(s), sometimes serving as a formal room for entertaining guests of superior social status; the hall, acting as both living room and kitchen; and the byre, sometimes incorporating a hay barn. In both regions, early examples appear to have been completely open, any division being the result of judicious placing of furniture. These divisions became more formal as living standards changed until, in both regions, they became a series of separate apartments: three single rooms in the Scottish examples and three suites of accommodation in the larger 'hallen-haus'.

To summarise the currently available evidence: the lofted hall first appears on the east coast of Scotland in the first half of the eighteenth century, almost at the same time as canopy chimneys are introduced to tenant farmers' dwellings. The feature appears to follow the normal acceptance pattern of spreading quickly up the east coast, then ever more slowly westwards. It appears to have been established in Ulster by the last years of the eighteenth century but only reaches the Outer Hebrides in the 1880s. The Ulster dating is open to question as there has been no proper search of the documentary evidence with this concept in mind. The only known survivals at present are in Ulster and South Uist. This is likely to be a false distribution similar to the known distribution of crucks in the early 1960s. One problem is that most illustrative material, be it drawings, paintings or photographs, tends to focus on the hearth, thus looking in the wrong direction for seeing the loft. Certainly there are literally hundreds of illustrations in which the bare rafters can be seen but these fail to answer the question of whether the whole building is open to the ridge or only the kitchen. This general hypothesis was put to a group of farmers from the Black Isle Agricultural Society at a lecture in November 1987. Afterwards a farmer's daughter from the Muir of Ord area told of a former house servant visiting their farmhouse. She described the interior of the farmhouse when she worked there as being similar to the Wilkie interior. All evidence of this arrangement has been swept away in remodelling prior to the present farmer entering the property, but it does show that this type of farmhouse survived into the recent past. If this is the case then there is every chance that others may survive perhaps in buildings deserted in the 1940s or 1950s. In other instances the presence of a former loft might be identified through changes in the first floor joist dimensions.

Readers are requested to look out for this type of farmhouse as survivals or in drawings, paintings, prints, photographs, or reminiscences of the older members of the community. If you have information please contact the author at Duncan of Jordanstone College of Art, 13 Perth Road, Dundee, DD1 4HT or by telephone at 0382-23261. All information will be treated in the strictest confidence and will remain the property of the individual informants unless formally released.

⁶⁵ Personal observations on a visit to Fresia, West Germany in 1984. House from Ostenfeld, South Schleswig, in Frilandsmuseet, Lyngby, Denmark. Houses from: Drenthe; Twente; Overijssel; and Achterhoek, Netherlands in Nederlands Openluchtmuseum, Arnhem, Netherlands.

THE ELUSIVE SCOTTISH BASTLE HOUSE

Tam Ward

Until a few years ago the words 'bastle house' conjured up a picture of a certain style of building found almost exclusively on the English side of the border, with the exception of a few examples in Selkirk, Roxburgh and Berwick. Current research can now demonstrate that this type of building was adopted much further north, at least in the area of Upper Clydesdale.

Volunteers of Biggar Museum and the Lanark and District Archaeology Society are currently involved in a project to excavate and consolidate the remains (often scant) of medieval and post-medieval buildings in the area of the Upper Clyde and Tweed valleys. With the deliberate demolition of a fine seventeenth-century house, the remains of a sixteenth-century towerhouse, and ongoing vandalism of ancient ruins in this area, a plan was formulated to save as many sites as possible and to encourage owners to adopt a more sympathetic attitude.

The site chosen to start this work was an enigmatic pile of turf-covered stones known as Windgate House (NT 016273), located at the head of the Cowgill reservoir near Coulter. There had been speculation over the years as to the style and period of this ruin. The general belief was that it had been a towerhouse of the sixteenth century, but of unusual elongate plan. A search for documentary records produced little information on the site apart from mention of a feud between the lairds of Symington and Lamington⁶⁶. The site and lands around it were in Lamington parish and belonged to the Baillies of that ilk during the sixteenth and seventeenth centuries. One reference shows a transaction of the lands of Kyegill between members of that family in 1621⁶⁷. The site was marked as Kyegill on Pont's map of 1596, but changed to Windgate House on Roy's map of the mid-eighteenth century. Forrest shows it as a ruin in 1813. A small painting in the possession of Biggar Museum, executed around 1865, shows part of a stone vault standing above the ruin. Irving confirms this in 1864 when he states: 'all that remains is a rudely constructed vault'⁶⁸.

Upon excavation, it became apparent that the plan compared favourably with those of bastle houses on the English side of the border, which generally tend to be longer in plan than tower-houses. This ruin is over forty miles from the border and led to the question: 'what is a bastle house?' The word bastle is derived from the Old French *Bastile*⁶⁹ and was in contemporaneous use to signify a strong or defensive place. It should be noted that usage of the word bastle has been applied to other types of strong houses, as have the terms pele or peel, castle and tower. Indeed a few of the sites at present under investigation in Clydesdale are labelled on the OS maps as 'castle' or 'peel'. The writer is confident that some of these places will be shown to be of an architectural style more befitting the term bastle. The nearest known use of the word to Clydesdale is in Peebles, where a

⁶⁶ *New Statistical Account of Scotland - Lanark* (1845), 819

⁶⁷ Baillie, J W, *Lives of the Baillies* (1872)

⁶⁸ Irving, G V & A Murray, *The Upper Ward of Lanarkshire described and delineated* (1864), 245

⁶⁹ *Scottish National Dictionary*

barrel-vaulted chamber in the County Hotel is described as a bastel. Crockett⁷⁰ states: 'There were several bastle houses in and around Peebles, but all have disappeared'. Chambers' History of Peebleshire⁷¹ gives an illustration of a 'bastle house door in Peebles' (this may have been the County Hotel) but does not know 'how many were the strengths of this kind in Peebles'. He also informs that 'Scott, in his Border Antiquities, speaks of the number of bastle houses in Jedburgh, Melrose and Lessudden, this last place having as many as sixteen strong bastle houses when burned by Sir Ralph Evers in 1544'. The famous Mary Queen of Scots House in Jedburgh is said to be the survivor of 'six bastle houses built round the town for protection in times of siege'⁷². The style of the five absent buildings is unfortunately not known; but it may be considered that the surviving house is a somewhat superior structure to be described as a bastle, although it does comply with the defensive criteria if not the architectural one, chiefly by the fact that it has more than one floor level above the vaulted basement and it also has a wing. Nomenclature is still a problem when attempts are made to typify these defensive houses, and, as with most efforts to classify a subject, there will always be the 'non-conformist' examples. Students of the domestic and defensive architecture of Scotland should therefore be wary of random and perhaps debatable descriptions. Our enquiry takes us to the days of feuding between the inhabitants of the Border region around the mid-sixteenth to seventeenth centuries. The area was known as the debatable lands because the administrators of both countries found it impossible to maintain law and order. Therefore any person attempting to settle there had to look to their security; and also the security of possessions, including their livestock.

The following is an extract from the report of the excavation of Windgate House⁷³, a copy of which was published in *VB 10* (1987). The reader's attention is drawn to the definitive work by RCHM England, *Shielings and Bastles*⁷⁴, dealing exclusively with English bastle houses. Briefly, a bastle house was a defensive farmhouse, rectangular in plan, consisting of a basement, usually barrel-vaulted, and sometimes having an area separated off. Above this was a single storey. In general two entrances existed – one on the ground floor to admit provisions and livestock and another above, reached by an external stair or ladder for access to the living area. In some instances the stair was located inside or a trap door connected the two levels. The entrance had a draw-bar which reinforced the door against attack and the windows were generally fitted with iron bars. The remains of Windgate House (fig. 1) are now interpreted as being those of a bastle house of the sixteenth/seventeenth century. The complete ground-floor plan survives, providing features and dimensions which, if compared with examples from *Shielings and Bastles*, show conclusively that it is of the bastle tradition of building. The construction of the walls is of lime-mortared greywacke, known locally as whinstone, and built on the random-rubble principle. This stone is very difficult to work, but does tend to cleave naturally into blocks ideal for wall faces. The stone would have been gathered and quarried in the immediate vicinity of the site, as it abounds there. The external walls measure 1m in thickness and are extant up to

⁷⁰ Crockett, W S, *Scott Country* (1902)

⁷¹ Chambers, W, *History of Peebleshire* (1864)

⁷² *Official Guide to Mary Queen of Scots House, Jedburgh* (1968)

⁷³ Ward, Gillanders & Christison, *Report on excavations at Windgate House, 1981-1986* (1986)

⁷⁴ Royal Commission on the Historical Monuments, England, *Shielings and Bastles* (1970)

2m in height. The springing of the vault starts at a height of 1m above the floor level. Remains of a dividing wall, having a doorway in its centre, partitions off a quarter of the south end of the building. It is 0.6m thick and the doorway is 0.9m wide. This small room measures 2.6m x 4m. At the opposite end of the remaining area is the 1m wide entrance to the house. The facing stone from around the doorway had been removed and is presumed to have been dressed sandstone. Trace of a draw-bar tunnel is evident on the east side of the doorway and a large piece of greywacke, smoothed by usage, is used as a doorstep. In the north-east corner of the large room, a straight flight of four steps is preserved. These steps are of greywacke and consist of single stones shaped as well as this intractable rock allows. They do not show as much wear as the entrance step. Each measures 0.85m wide and 0.22m high. It is supposed that the stair would have turned at right angles to reach the upper floor. At this point the walls may have been slightly less thick and the continuing steps not as wide as those that survive.

WINDGATE HOUSE

NAT GRID REF NT 016273

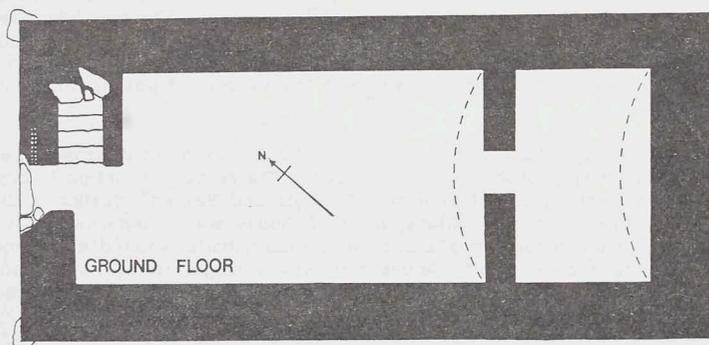
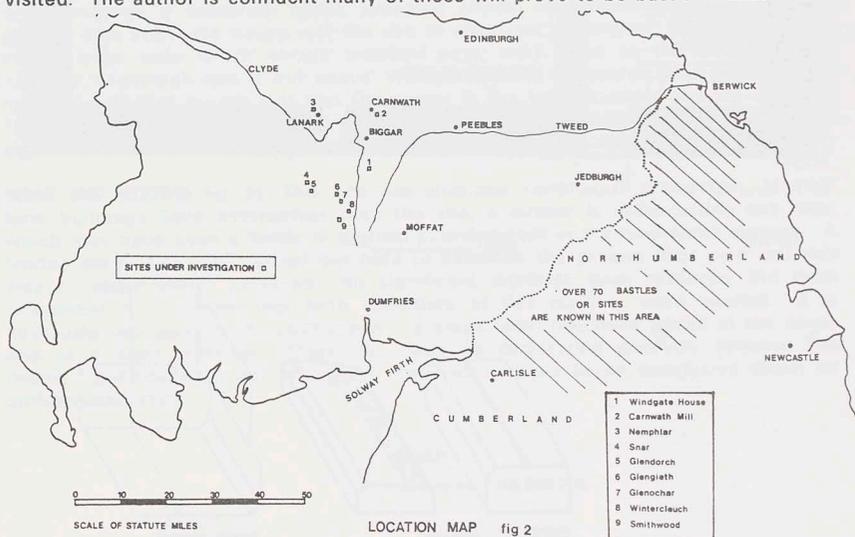


fig 1

SCALE: 1 2m

The window openings were of dressed sandstone. Parts of sills and lintels were found with holes cut into them to accommodate iron bars, two in number, inserted vertically and approximately 0.15m apart. Measurements taken from the assembled pieces of a sill suggest the width of a window opening to be 0.6m. The roof was covered with slates typical of the Southern Upland variety, each slate having a hole 0.01m in diameter to take a wooden peg to fix it to the roof. In general the walls had a projecting plinth on the outside formed of large irregular stones. The surviving corner stones are battered in an attempt to round them off. Windgate House has the main characteristics of a bastle house as described in *Shielings and Bastles*. These include the elongate plan, the barrel vault, draw-bar tunnel, partitioned basement and barred windows. However, in Windgate House, the stair is located inside the building and is relatively wide. The windows are of typical size and had two iron bars built into them. The fact that fragments of the lintels and sill were found on both the east and west sides of the building indicates the position of at least two of them. The position of one may have been immediately above the deepest part of the midden, 5m from the south gable. As no window glass was found we may conclude that the windows were not glazed but simply shuttered. The basement may have been lit and ventilated by a couple of slit windows with internal splay through the vault. However, no evidence was found to support this

theory, although such an arrangement is evident on most of the English examples and also at Glendorch and Nemphlar (see below) which are also interpreted as bastle houses. It is reasoned that the original roof surface was slate from the fact that complete and broken slates were found below the occupation deposits on the outside of the ruin. The nails as described in the finds list would have been used for wood work only, the slates having been fixed by wooden pegs. The finds from the dig also help in dating the occupation of the house to the sixteenth/seventeenth century. As a result of these conclusions the question was asked: was this an isolated example? A further search, using maps, local knowledge and books, was initiated for other sites of a similar nature. Local enquiries immediately produced four more places, and by using Timothy Pont's map of 1596 another site was located. These were all to the south and within ten miles of Windgate House (fig. 2). Several other buildings and places are now suspect but to date have not been visited. The author is confident many of these will prove to be bastle houses.



The excavation and survey work to date of other places will be dealt with individually for convenience.

GLENDORCH (NS 870188) fig. 3: This ruin was part excavated. Unfortunately (for our purpose) the site had been in continuous occupation until 1957. As a result of this the remains of the original house and the archaeological deposits have suffered. However enough has survived above and below ground to give a complete plan at ground level and this compares favourably with that at Windgate House. An original slit window (fig. 4) is still complete, the aperture measures 1.5m x 0.075m, the tiny window is splayed through the haunch of the surviving part of the vault on the south wall and would have given light and ventilation to the chamber. The maximum heights of the surviving wall and visible curve of the vault are 3.5m and 2.2m respectively. The positions of the doorways were found with door check stones and steps in situ. The lower pintle of the external door hinge is also in situ. On three external corners squared sandstone quoins are still in place and several other dressed stones were found in the excavation. Stones were also noted in the nearby nineteenth-century shepherd's cottage (now also a ruin) and in drystone dykes which had obviously been re-cycled from the older house. All these dressed stones were of good quality red sandstone and were worked to a high standard.

GLENDORCH

NAT GRID REF NS 870 188

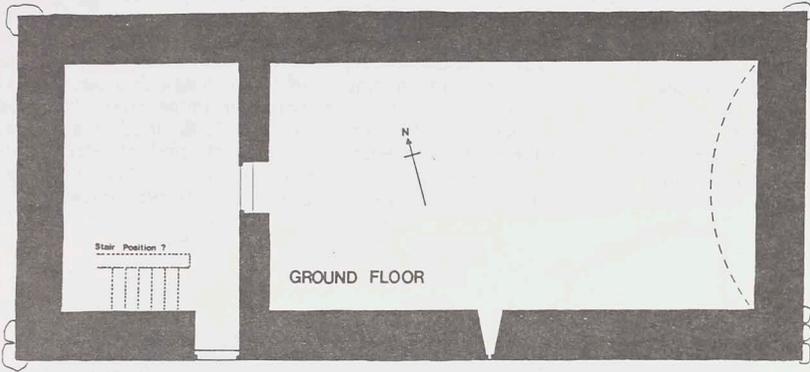


fig 3

SCALE: 1 2M

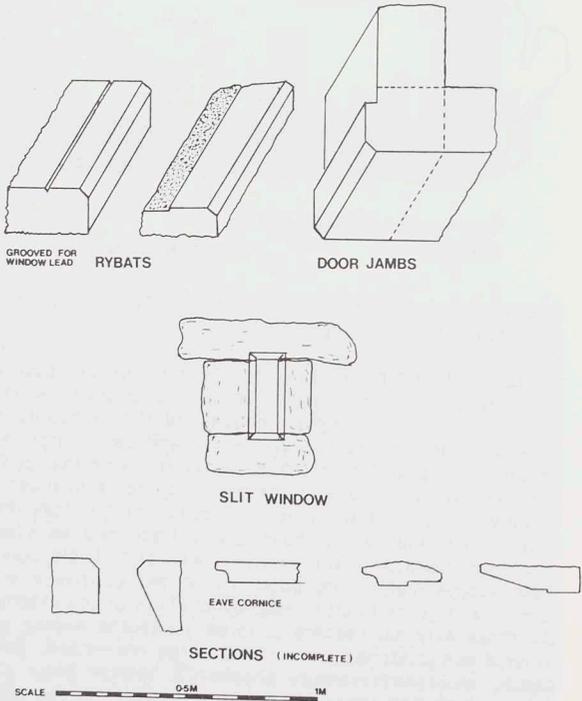


fig 4 GLENDORCH DRESSED STONWORK

plain chamfering of the corners being the only attempt at embellishment. Two particular shapes recognised were eaves cornice drip stones (fig. 4) and a stone with a V-groove cut into it to accommodate leaded glass (fig. 4). Window glass and its lead strip were also found. Neither ridge stones from the roof nor evidence for the style of skews were found. A peculiar arrangement of mortared stone-work beneath the floor level and which is bonded into the south-west corner of the smaller room cannot be explained satisfactorily. It is suggested that this may be the foundation of an internal stair. Many interesting objects dating throughout the seventeenth/eighteenth century were found. Perhaps the most interesting were three types of substances (possibly used as keel) which were found on the site. In the seventeenth century the occupants used red haematite (same as Windgate House) as a colouring agent, and in the eighteenth century an altered felsite had been ground to give a yellow powder, and two modern jam jars of bright red keel had been abandoned on the walls of the ruin - three substances presumably for the same purpose, a colouring agent, spanning almost four hundred years! Another parallel with Windgate House was the use of slates on the original roof. These also had a large hole which shows wooden pegs were used to fix them. Clearly however Glendorch was a 'cut above' Windgate House in architectural quality. This may be explained by the fact that the owner in the late sixteenth century was one Thomas Foulis, a wealthy Edinburgh goldsmith who had a licence from James VI to exploit the nearby lead deposits at Leadhills. Foulis died in 1628.

SNAR (NS 862200) fig. 5): This site has also had continuous occupation. Modern farm buildings have encroached onto the site, a stream is undercutting one side, which may have been a factor in its final abandonment in the nineteenth century. A limited excavation was carried out here to establish the ground floor plan and this was to some extent achieved. No significant artefacts were retrieved, but from references it is known that both chambers of this building were vaulted. It is obviously two periods of construction - a small room has been added at the south end of a main chamber. There has been no connecting doorway between the rooms. Unfortunately not enough of the ruin survives to be conclusive about its architectural style.

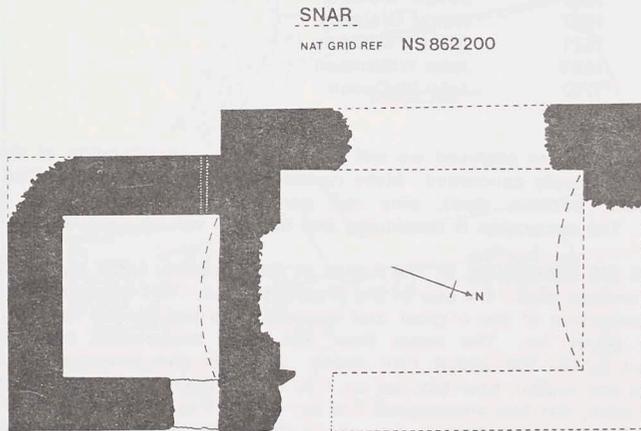
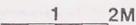


fig 5

SCALE :  2M GROUND PLAN

GLENOCHAR (NS 946139) fig. 6: The investigation of this site (fig. 7) is ongoing and is proving to be very exciting. The complete plan of the house survives at ground level and, like Windgate House, it has a similar stair arrangement just inside the entrance. A piece of sandstone from the doorway was found in the entrance; it had a draw-bar tunnel cut into it. The entire curve of the vault is evident on the south gable and would have been 3m high. A small slit window survives on this same wall at a height of 2m; this has been splayed on the inside. A cobbled drain (not on plan) runs the length of the room and discharges through a tunnel beneath the window. Some additional walls in the basement are attributed to a late occupation of the ground floor in the early eighteenth century when the upper floor was ruinous. An extensive cobbled courtyard area has been excavated on the west side of the house. Within this area, a system of drains has been incorporated in the cobbles, these channels were covered by thick slabs of slate. Also on the cobbled surface in one area a multi-period burning activity was noted which is suspected of being a corn-drying area, perhaps a kiln. The house was built using random rubble technique with rubble quoins and lime mortar and set amid an arrangement of earth works which include field systems, boundaries and also quite clearly other buildings (see fig. 7, which does not show the entire site). At least some of the rectangular features south of the house are thought to be other dwellings, and if this is proved to be so then Glenochar has been a seventeenth-century farm town. This theory is supported by the following list of testaments registered in the seventeenth century⁷⁵:

1623	James Grahame
1626	Bessie Weir (widow of James above)
1629	Charles Thomson
1635	James Grahame
1636	John Thomson
1638	Roland Thomson
1655	William Thomson
1664	Margarate Vallance
1665	Adam Grahame
1667	Bessie Thomson
1667	Walter Grahame
1671	William Kirkhope
1681	John Williamson
1702	John McQueen

When these wills are analysed we will have a better understanding of the material wealth of the people concerned. Many typical items have been recovered including knives, coins, buckles, pipes, pins and parts of wine bottles; also the usual haematite. The excavation is continuing and this ruin will be consolidated.

NEMPLAR (NS 856444) fig. 8: The house at this location, some two miles east of Lanark, is without doubt the star of the project to date. This bastle stands complete with the exception of the original roof timbers. The wall heads have in fact been raised by about 1m. The upper floor has been modernised and attic rooms constructed within the raised roof space. However the basement is absolutely original. It has a stair, now blocked up, five slit windows and a small window high under the vault, this has one original iron bar still in situ. The entrance in the north gable has two draw-bar tunnels one above the other. A slab trough and drain on

⁷⁵ Commissariat Record of Lanark. Register of Testaments 1595-1800. Scottish Record Office

GLENOCHAR

NAT GRID REF NS 946139

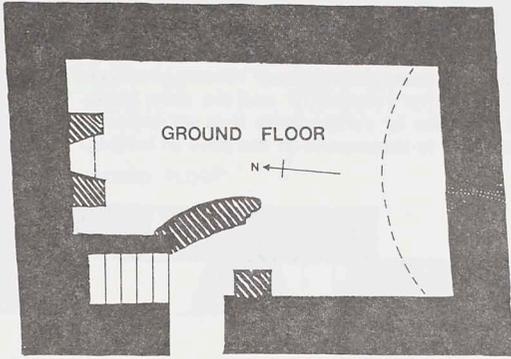


fig 6

SCALE: 1 2M



18 CENTURY

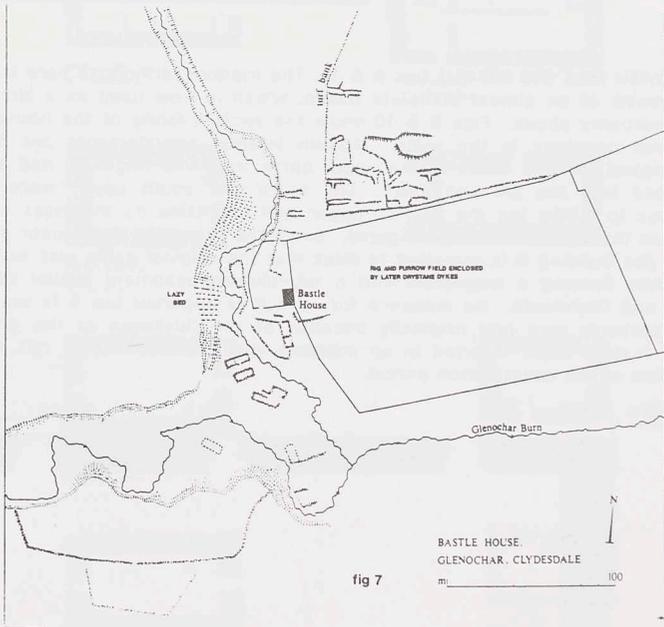


fig 7

Crown copyright, Royal Commission on Ancient Monuments, Scotland.

the floor discharge through a tunnel in the south gable (not on plan), this is a similar arrangement to that at Glenochar. One original window on the upper floor has been blocked up and several new openings have been formed including a new entrance at this level, reached by an outside forestair which has been built against the east wall, blocking the two slit windows there. The upper floor walls reduce in thickness to about 0.60m. A stone mantelpiece recently removed from a fireplace has two sets of initials carved in relief on it and the date 1607. While this is not conclusive proof as to the date of construction it is an indication. The survey of this house, which is occupied, is incomplete at the time of writing.

NEMPHLAR

NAT GRID REF NS 856 444

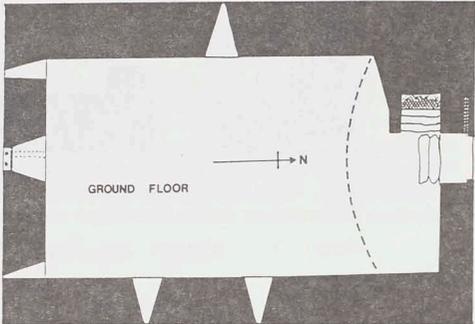


fig 8

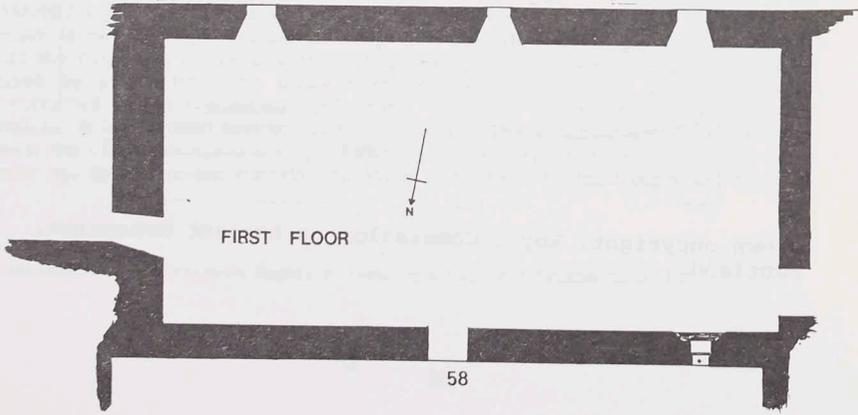
SCALE: 1 2M

CARNWATH MILL (NS 997454) figs 9 & 10: The modern farmhouse here incorporates the remains of an almost complete bastle, which is now used as a kitchen below with bedrooms above. Figs 9 & 10 show the ancient fabric of the house including additional openings in the walls. Modern internal arrangements are not shown. One original window exists in the upper north wall; this originally had an iron bar imbedded into the sill and lintel. The north and south upper walls reduce in thickness to 0.60m but the eastern upper wall maintains its thickness of 1m; it is reasoned that this is the original gable. Since the same does not occur at the other end of the building it is tempting to think that the original gable was further to the west thus forming a long plan with a sub-divided basement similar to Windgate House and Glendorch. No evidence for a vault is apparent but it is reasoned that there probably was one originally because of the thickness of the ground floor walls. A date stone inserted in an adjacent wall has 1611 on it; this may be an indication of the construction period.

CARNWATH MILL

fig 9

SCALE: 1 2M



CARNWATH MILL

NAT GRID REF NS997454

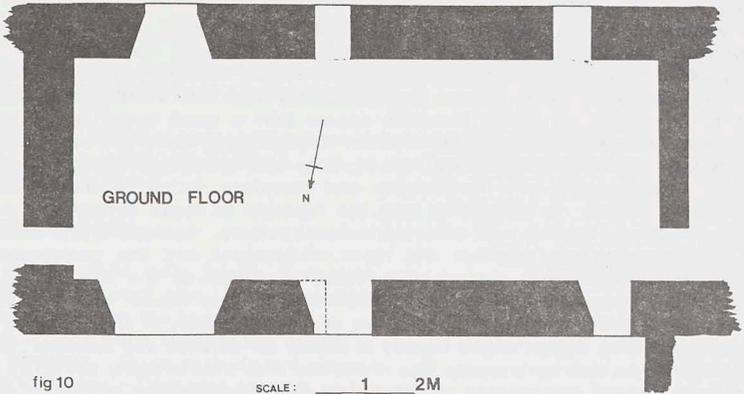
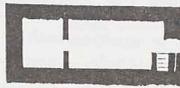


fig 10

COMPARATIVE GROUND FLOOR PLANS OF BASTLE HOUSES



WINDGATE HOUSE
(CLYDESDALE)



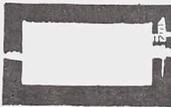
GLENDORCH
(CLYDESDALE)



WOODHOUSES
(ENGLAND)



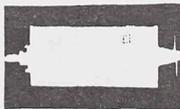
CARNWATH MILL
(CLYDESDALE)



CRAG BASTLE
(ENGLAND)



GLENOCHAR
(CLYDESDALE)



HIGH SHAW BASTLE
(ENGLAND)



NEMPHLAR
(CLYDESDALE)

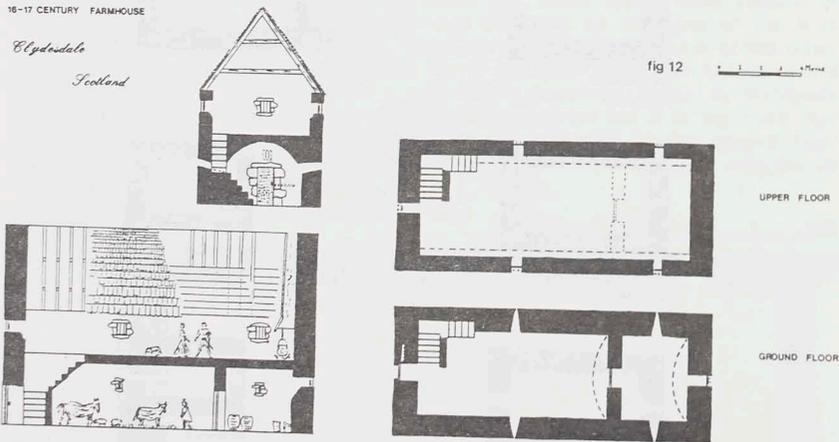
fig 11

SCALE 3 6 9 12M

SUMMARY OF PROJECT

By reference to fig. 11 it can be seen that two types of building occur in Clydesdale: a) a long house with a division in the ground floor and b) a shorter type. Two more long buildings and one short type have now been identified but not yet excavated, whilst several high-probability sites and standing buildings have yet to be visited. It would therefore appear that a much larger group of these particular houses exists in the area of Clydesdale. Many are surrounded by associated earth-work structures, field systems and enclosures which are reckoned to be contemporary with the houses and therefore dating to the seventeenth century or earlier. It is believed that the function of these settlements was for extensive sheep farming with other agricultural activity. Analysis of the testaments is now revealing the numbers and types of livestock and this corroborates the sheep aspect as being the main livestock economy of the district. A small collection of bone from a midden deposit at Windgate House was analysed and shown to be predominately representative of a small variety of sheep similar to the Soay breed. The design of the houses is clearly for defence and security. Reasons for this may be that lawlessness was rife in the area (this is easily shown to be the case with several documented references to raiding and indeed murder)⁷⁶, and that the people who were building these relatively substantial, strong defensive houses around 1600 had a new-found wealth to be protected, which in turn suggests the emergence of a new level of rural Scottish society - the tenant farmer, who would in some places develop into the bonnet lairds of the later seventeenth century farm towns. It may be considered that these people laid the foundation for the more documented improvers of the eighteenth century to build upon.

The bastle project is now an extensive enquiry into the lifestyle and architecture of the upland farmers in Clydesdale. As a result of the evidence so far retrieved a model of a hypothetical farmhouse c1600 was produced (fig. 12). With the exception of the 'hingin lum' every other feature or dimension is taken from one of the excavated sites or another. The roof construction is that of a house in Lanark (not a bastle) which dates to 1650, the timber of which is entirely original.



⁷⁶ Fraser, George McDonald, *Steel Bonnets* (reprint 1986) and Chambers, Robert, *Domestic Annals of Scotland* (1859)

This paper model has now been converted into a 1:20 scale model in stone, slate and wood to demonstrate how substantial and grand these buildings were at a time when most people were living in turf and stone hovels which may have had difficulty keeping out the weather, let alone an intruder. This model can now be seen along with a permanent display of artefacts, photographs and information in the new Moat Park Heritage Centre in Biggar.

It is believed that this study will further enlighten this shaded area of architectural history in the south of Scotland, and so the search continues for 'the elusive Scottish bastle house'.

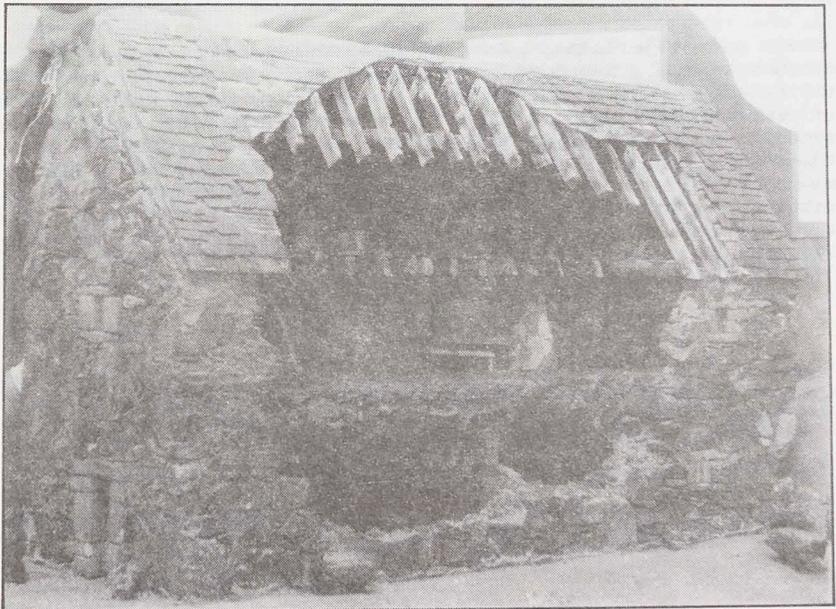
Acknowledgements

This article could only briefly deal with the project and detailed reports are forthcoming for each site. In the meantime the writer is indebted to the following for assistance with the bastle project: -

Mary Harman - Bone analysis and report
Robin Murdoch - Glass analysis and report
Dennis Gallagher - Clay pipe analysis and report
RCAHMS - Site survey work

All land owners, gamekeepers and tenants who kindly gave permission to excavate and rendered cheerful assistance.

Society of Antiquaries of Scotland - Grant Aid
Lanark & District Archaeological Society - Grant Aid
Biggar Museum Trust - Grant Aid



Model bastle house - on display at the Moat Park Heritage Centre, Biggar.

TWO EARLY EIGHTEENTH-CENTURY INVENTORIES OF THE BUILDINGS AT COXTOUN, SUTHERLAND

Malcolm Bangor-Jones

Introduction

The study of vernacular building in the Highlands of Scotland has tended to concentrate either on the field survey and excavation of settlements 'cleared' in the period of agricultural 'Improvement' which began in the second half of the eighteenth century or on the investigation of ancient building forms which have survived into more modern times⁷⁷. Pre-Improvement buildings have been comparatively neglected⁷⁸. However, as Whyte has demonstrated for the seventeenth-century Lowlands, a good deal of information can be gained from estate papers⁷⁹.

The valuations or comprisings which follow were made in 1713 and 1722 and are of buildings at Coxtoun, a small settlement in the parish of Golspy which disappeared in the enlargement of the Dunrobin policies by the Sutherland family prior to 1750. The exact location of Coxtoun, also spelt Cockstoun, is unknown but it was probably situated on the coast near to the western end of the present park.

In the seventeenth and early eighteenth centuries, houses and farm buildings in Sutherland, as in most of Scotland, were the property of the landlord⁸⁰. At Coxtoun, the landlord provided not only the great timbers, the couples or cruck trusses, but also the small timbers. This is a different arrangement from that recorded at the time of the Sutherland Clearances, 1807-21, when only the couples were provided by the landlord and the small timbers were the property of the small tenants⁸¹.

Tenants were obliged to keep buildings in good repair and valuations were made to ensure that outgoing tenants accounted for any neglect or received the benefit from the landlord or incoming tenant for any improvements or meliorations. Thus a tack or lease dated 1698 of lands in Dornoch, one of the few tacks surviving from this period, bound a tenant to 'keep and uphold ye said house kilne and oyr's houses adjacent yrtoe belonging water-tight dureing ye said tack and to leav ye saids...In alse good case and condition at his removeall yrfræ as he finds ye samen at his entrie yrto be compryseing or ye sight of three or four newtrall men'⁸². The comprisers at Coxtoun included several substantial tenants or tacksmen, craftsmen and estate officials.

⁷⁷ See for instance Fairhurst, H, 'Rosal: A Deserted Township in Strath Naver, Sutherland', *PSAS* C (1968); Mercer, R. J. *Archaeological Field Survey in Northern Scotland* 3 vols (1980, 1981, 1985); RCAHMS, *Inventories of Argyll* (1971-); Stell, G, 'Some small farms and cottages in Latheron parish, Caithness', In Baldwin, J R, ed., *Caithness: a cultural crossroads* (1982)

⁷⁸ Fenton, A, 'Twenty Years of the Scottish Vernacular Buildings Working Group', *VB* 11 (1987) 2-5

⁷⁹ Whyte, I, 'Rural Housing in Lowland Scotland in the Seventeenth Century: The Evidence of Estate Papers', *Scottish Studies* 19 (1975). See also Walker, B, 'The Vernacular Buildings of North East Scotland: An Exploration', *Scottish Geographical Magazine* 95 (1979)

⁸⁰ Whyte, I, *op. cit.*

⁸¹ SRO SC9/7/75 Report of the Valuation of the Moss-fir in the tenants houses; see also Stell, G, *op. cit.*

⁸² National Library of Scotland (hereafter NLS) Dep.313/3490 Scroll tack Garty to George McCulloch

The valuations are of particular interest as they not only relate to a variety of buildings, including a kiln, granary, barn, byres, stable and various houses, but also reveal how buildings could be altered or be demolished. By 1722 the timbers of the mailer's houses, for instance, had been 'made use of to Build the Deacon's house'. Moreover the 1713 valuation records a number of changes carried out since a previous comprising presumably made prior to when John Ross, the outgoing tenant, first entered into possession.

The main elements which were valued were the roof timbers: couples, rails, or purlins, and the smaller cabers, or rafters; and the entrance including doors, checks, bands, or hinges, and, where appropriate, locks. The kiln also contained a killhead, or drying floor for the grain, and the stable contained mangers and hecks - wooden racks for holding fodder. Other interesting details include stake-and-rice or wattle partitions, possibly with clay covering⁸³, in the brew house and a loft, partitions, windows and a brace or chimney in the 'body of the house' - features which must have set it apart from most other tenant houses.

The significance of the buildings is confirmed by what is known about Robert Gordon, tenant of most of Coxtoun from 1713 to 1722. Gordon first appears in the estate records in 1709 when he received a 7-year tack of his holding in Rhives, near Golspie. The following year he entered into possession of part of Orltown, a township situated to the north of Coxtoun and which also eventually disappeared into the Dunrobin policies. Prior to 1713 Gordon appears to have lived in Rhives. However, in August 1713 he is on record as 'vintner in Dunrobin' and by the following year he was living in Coxtoun. His various holdings were considerable, amounting in any one year to between 30 to 50 acres of arable land. While often referred to as 'vintner in Coxtoun' he was also designed 'tacksman of Rhives' and his nomination for jury service at the Circuit Court of Inverness in 1718 is a further indication of his status. While at Coxtoun the rents for all his holdings were paid for by ale given out on Lord Strathnaver's orders to the local boatmen, servants, foresters, salmon fishermen, the 'gairdiners men' and the 'mauers & turners of ye hay' as well as wine and claret sold to Dunrobin. In 1722 he moved from Sutherland to become 'vintner in Nairn' leaving behind him a claim for £10-14-4 Scots for the 'melioration of the Biggings possess by him in Coxtoun as per two Separat compriseings thereof he being by his Tack allowed mellioration'⁸⁴. By 1735 the fishermen, who were responsible for the local carriage of grain, salt and fish and whose boats were provided by the landlord, had been removed from Coxtoun to Golspie and the 'stance of their houses & yards inclosed in the New Parks'. The houses and yards of the two cottars had been 'likewise inclosed' but there was still a tenant left in Coxtoun in possession of a croft and with the privilege of brewing⁸⁵.

The valuations

A note on The Compriseing of John Ross in Cockstown his Biggings, Comprised by Mr Robert Gray, James McBeth, Geo: Munro, Donald Ross, Alexr Gordon, Hector Munro, John Munro, Donald Munro

⁸³ Walker, B. *op. cit*

⁸⁴ NLS Dep.313/916 p256, 1607 Abstract of Accmpts Due..To Robert Gordon, 1610, 2133; SRO JC26/D1043

⁸⁵ NLS Dep.313/737, 2133

Thomas Knight & Thomas Munro The 9th of May 1713⁸⁶

	£	s	d
Imprs a Malers house comonly called the weavers house consisting of 3 Couples	3	0	0
Itt 20 railes; 19 only priced, at 3s 4d pr piece	3	3	4
Itt Sex Score of Cabers at	1	6	8
Itt door and door checks lock & bands	2	16	0
Itt The Jam or outhouse, Couple railes & Cabers Comprised at	1	15	8
Itt The door & door checks & bands of ye house	1	0	0
	13	1	8
The Kiln			
Imprs four Couples twenty five railes & Cabers Conform, inserting ye Killhead wt its timber furniture the two doors with their posts & bands, excludeing ye Lock all:	18	0	0
The victuall house opposite to ye kiln			
Imprs The floor consisting of ten Sparrooff valued at 5s pr piece	2	10	0
Itt in the sd floor three score of backs valued at 3s pr piece	9	0	0
workmanship & nailes remitted for wear			
Itt two Couples & a geabill Couple valued at	4	0	0
Itt twenty three railes at 3s 4d per piece	3	16	8
Itt two hundreded Cabers esteemate to	3	0	0
Itt The fore doore, doorchecks, lock & bands	3	12	0
Itt The back door, doorchecks, bands & steple	1	10	0
	27	8	8
The litle house at ye geabill of the Kiln comonly called ye Chaff house			
Imprs two Couples railes & Cabers Conform all Comprised to	2	0	0
The Barn			
Impr Couples railes, Cabers, doors & lock formerly Comprised to 8 £ Scots but the addition of a new Couple wt its railes & Cabers Conform Comprised at 2 £ Scots makes	10	0	0
The mickle Byer			
Imprs four Couples esteemate to	4	0	0
Itt twenty railes at 3s 4d pr piece	3	6	8
Itt 9 Score of Cabers priced at	4	0	0
	11	6	8

⁸⁶NLS Dep.313/1610 A note of The Comprising of John Ross his biggings

	The litle Byer Formerly comprised to 3 £ Scots but because of melioration (door only excluded) Comprised now to	4	6	0
	Common Stable Consisting of 3 Couples wt yr railles & Cabers and hecks & mangers wt the door wtout lock as formerly	5	0	0
	The outter new Chamber Consisting of one Couple wt Eleven railles & Cabers Conform	6	16	8
Itt	The door of yt Chamber wt its bands	2	0	0
Itt	The window Case & bands	1	0	0
		9	16	8
	The litle Chamber at ye hall door consisting of one Couple wt its railles and Cabers, wt its door & door checks & bands	6	0	0
	Note of Compriseing Continued			
	The Brew house Consisting formerly of two Couples, railles & Cabers conform wt, its door esteematt formerly to	4	0	0
Itt	more of addition to it Since, one Couple wt its furniture of railles & cabers Com: to	3	16	8
Itt	two partitions of stake & rice wtout doors valued at	5	0	0
		12	16	8
	The Body of the house			
Imprs	The Court Chamber, loft partitions two Couples, side trees, Cabers sex Jests 3 windowes, 2 foot of Glass in one of ye windowes, all at	23	13	4
Itt	The Hall from Geabill to Geabill four Couples side trees Cabers, two par: -titions door, windowes brace	22	15	0
		46	8	4
	The Totall of all the totalls of ye within & above Compriseings amounts to ye Soum of ane hundreded & sixty sex pounds four shills Eight penies Scots money	166	4	8

Subscribed & attested by the within written
Comprisers day place & year forsd

Robert Gray
George Munro
A Gordon

Ja McBeth
Donnald Ross
Hector Munro attests

J.M.

Thomas Knight
Tho: Munro

D M

Memorandum

That there are two fisher houses belonging to the sd John Ross in possession with two of my Lords fishers Comprised at ye sd fishers Entry to three pounds Scots each house

Itt That there are two Cottar houses in the sd John Ross his Tack in Orletown that by reason of the foul day were not Comprised &

Note of the Comprising of Robert Gordon in Coxtoun his Biggings Comprised by Hugh Gray in Salloch Geo: Gordon in Cullmelie John Couper in Kirkton Donald Ross in Drumouie Geo: McComash in Mains Dunrobin John Munro in Coxtoun & Donald Munro Smith there⁸⁷

	£	s	d
Im: Nota a mailers house Comprised in the former Comprising made use of to Build the Deacons house by Lord Strathnavers order at	13	1	8

The Kiln

Consisting of 4 Couple 26 Rails and Cabers Conform Includeing the Kiln head with its timbers 2 doors with there posts and Band	18	0	0
--	----	---	---

The Victual House

Consisting of two Couples and a Gavill Couple with Rails Cabers Doors with the floor Consisting of 10 Sparroofs and 60 Backs and a Lock	26	2	0
---	----	---	---

The Barn

Couples Rails Cabers Doors and Lock	10	0	0
-------------------------------------	----	---	---

Litle Byer

Consisting of 2 Couples Rails and Cabers and a Door	4	10	0
---	---	----	---

The Common Stable

Consisting of 3 Couples with there Rails Cabers 2 Hecks 2 Mangers Door and Lock	6	13	4
---	---	----	---

The Outer new Chamber

Consisting of One Couple Rails Cabers Door and Lock & Window	11	4	0
--	----	---	---

⁸⁷NLS Dep.313/1610 Comprising of the Bigging of Robert Gordon in Coxtoun

GLEANINGS FROM GALLOWAY FIELDWORK

Judith Anderson

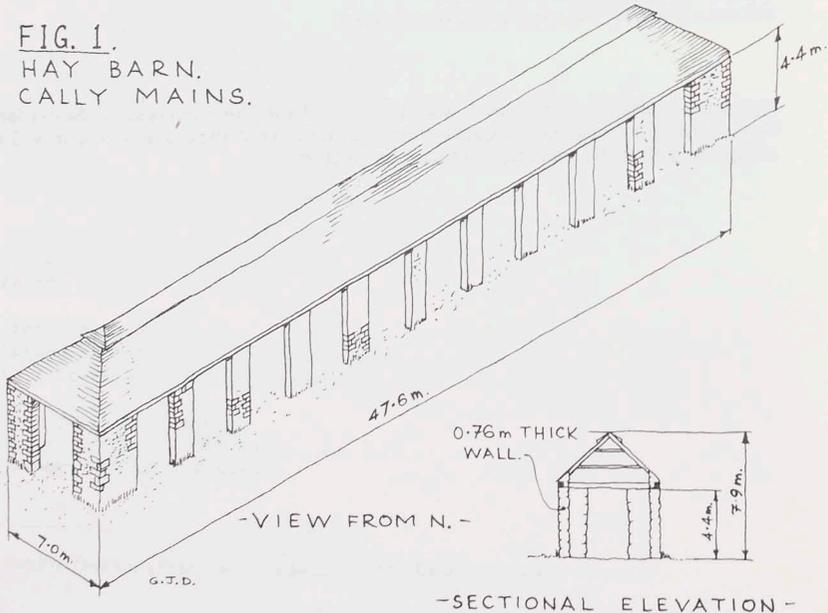
The updating of the Secretary of State's List of Buildings of Special Architectural or Historic Interest provides an unparalleled opportunity for comprehensive fieldwork in specific geographical regions of Scotland. Each building in an area is visited, whether listed or not, and many are photographed. What I hope to do in these short notes is to put before readers a sample taken from the many sites visited during fieldwork for the resurvey of Stewartry and Wigtown Districts which I hope will prove of interest. All the sites mentioned except Stellock are currently listed. The rather longer final note is the result of a survey carried out in July 1988 with Graham Douglas to whom I am indebted for all the accompanying drawings and many helpful comments. I should also like to acknowledge the help of my colleagues in SDD Historic Buildings and Monuments Directorate in preparing this paper.

1 CALLY MAINS HAY BARN (NX 591 542) Girthon parish, Stewartry.

Cally Mains was the home farm to Cally House, built in the later eighteenth century for James Murray of Broughton, noted entrepreneur and Galloway cotton magnate. Cally Mains is a well kept courtyard steading, but pride of place goes to the hay barn (Fig. 1) which stands detached to the east. The sheer scale of this open-sided 10-bay barn marks it as outstanding. Measuring overall 47.65m long by 7m wide and 7.9m to ridge, a large volume of hay could be kept dry and well ventilated.

Granite quined piers of hammer-dressed rubble support timber lintels of up to 9m in length, from which rises a common rafter roof with a pair of collars to each rafter couple. It is a blue slate roof with a raised ventilator running the length of the ridge. The barn probably dates from the end of the nineteenth-century and thanks to the remarkably wide openings it continues in use today as a straw barn.

FIG. 1.
HAY BARN.
CALLY MAINS.



2 HORSE ENGINE HOUSES

Whitehill of Balmaghie (NX 725 615), **Hill** (NX 727 609) and **Barnboard** (NX 715 619) in Balmaghie parish, Stewartry. **Tonderghie** (NX 441 353) in Withorn parish, Wigtownshire.

In Balmaghie parish, Stewartry, there is a group of three unusual horse-engine houses, all shown on the first edition OS map of 1853. The standard Stewartry horse-engine house has substantial rubble piers supporting a conical slate roof (polygonal roofs are rare) and overhead harness-shaft and gearing. One recently visited at Tonderghie is a good exemplar of the type; here the roof structure supports a substantial polygonal timber drive shaft and formerly the harness-shafts (the latter alas not extant). In the adjoining barn is a complete threshing machine of roller-feed type, probably dating from the 1840s.

The Balmaghie group are all of a similar nature and seem to be of altogether a different type to Tonderghie. Fig. 2 illustrates Whitehill of Balmaghie as an example. All three horse-engine houses have comparatively flimsy roof structures which would seem incapable of supporting anything so heavy or stress-laden as a horse-engine and its accompanying gearing. Ten cast-iron columns support laminated timber lintels from which rises a conical slate roof supported by light-weight timber rafters. The absence of any substantial timber roof truss, or indications of its removal, would seem to rule out an overhead drive of the Tonderghie type and point to a sweep-drive underfoot gearing. If so the provision of a covered walk, especially in cast iron is unusual and noteworthy. Alas, as is often the case, there remains no visible trace of machinery in any of the Balmaghie horse-engine houses, nor in the accompanying threshing barns. Though the three horse-engine houses are very similar, the cast-iron columns used for each are slightly different in profile, some having rudimentary capitals, some with fillet moulding.

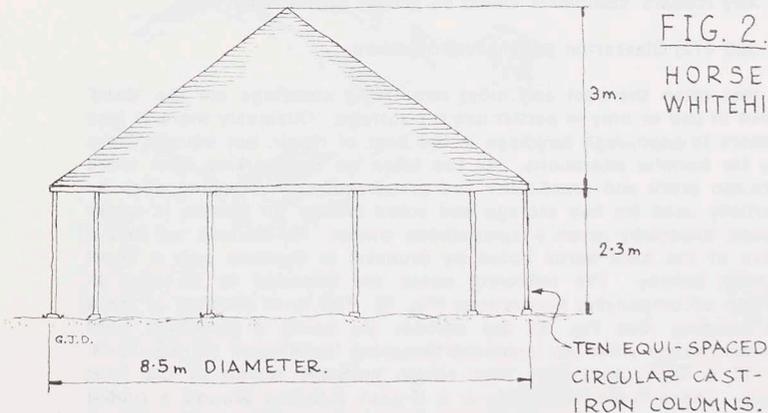


FIG. 2.
HORSE ENGINE HOUSE.
WHITEHILL OF BALMAGHIE.

3 BARHOLM MAINS, BARREL-VAULTED BUILDING (NX 470 593) Kirkmabreck parish, Wigtownshire.

This perplexing structure stands detached to the north-east from an elaborate early nineteenth-century formal courtyard steading, now partly altered. The building is rectangular in plan with gable walls to south-west and north-east and built into a bank at the north-east gable. The ground floor is entered from the south-west by a wide depressed-arch door above which is a blocked window. The ground floor is barrel-vaulted in stone, there appear to be no other openings or any sign of communication between ground and first floors.

The upper floor is entered from the bank at the north gable, the doorway has been widened. To the south gable is a projecting chimneypiece flanked by twelve-pane sash-and-case windows of a very domestic character. Above these, a centrally-placed blind oculus. There are no openings to the lateral walls. The masonry is squared granite rubble, quoins and margins more carefully finished, granite stack to south gable apex, straight skews and slate roof.

Flanking the south gable are butt-jointed curved rubble walls, partly acting as retaining walls and partly, doubtless, to give an added air of symmetrical harmony to the composition. Though butt-jointed, the masonry does not appear to be of such significantly different character to suggest much later construction; a water trough is incorporated into the western wall.

Clearly the barrel-vaulted ground floor must have been built with some specific purpose in mind, but what? By the masonry used and the style of the building it seems to be of mid-nineteenth century date. It is difficult to ignore the load-bearing qualities of such a vault, and the ease of access afforded by the 'bank-barn' layout, but the fireplace seems at odds with the idea of the upper floor as storage area. Equally the cold dark atmosphere induced by the vault may suggest some cold-storage purpose, perhaps connected with the fishing industry, given its proximity to the sea. There are no fixings in the lower chamber except for some metal hooks in the vault, these appear to be arranged at random and are of small size only. Any readers' comments would be greatly appreciated!

4 STELLOCK (NX 368 412) Glasserton parish, Wigtownshire.

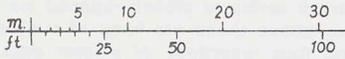
It is a sad fact that often the best and most interesting steadings are the 'dead' ones, i.e. those not in use or only in partial use for storage. Obviously there is less incentive for farmers to keep such buildings in the best of repair, but equally there is less necessity for harmful alterations. All too often on the working farm there are conflicts between profit and practicality and preservation. A steading such as Stellock, only partially used for hay storage and some shelter for beasts, is under much less pressure, especially given a sympathetic owner. At Stellock we find a very close relative of the bank-barns noted by Brunskill in Cumbria only a short distance across the Solway. The following notes are intended to be read in conjunction with the accompanying illustrations (Fig. 3). The farm consists of three main ranges of building (see Fig. 3), the earliest (A) being a threshing barn converted to a straw house when an improved threshing 'bank-barn' (B) was built. The third range (C & D) is an L-plan byre range, probably rebuilt in the later nineteenth century. These three ranges form a U-plan steading around a rubble walled cow-court (E). The farmhouse stands detached to the north-west; a substantial late-eighteenth-century two-storey building, the first edition OS map shows it as part of a courtyard steading. By the second edition these surrounding buildings are not shown.

A Eighteenth-century threshing barn, for hand then water-powered threshing. The

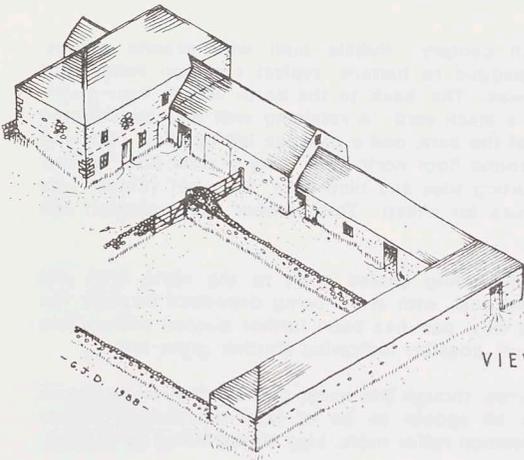
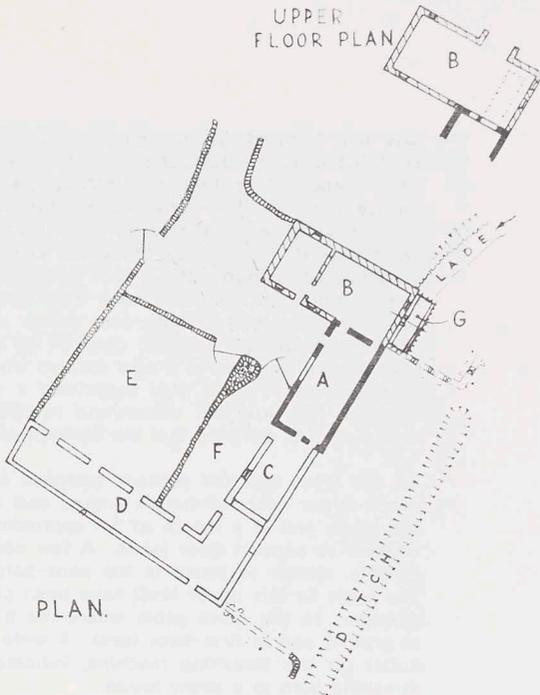
FIG. 3.
STELLOCK.

- A. STRAW HOUSE.
- B. THRASHING BARN.
- C. BYRE.
- D. LOOSE BYRE.
- E. COW COURT.
- F. FARM YARD.
- G. SITE OF WATER WHEEL.

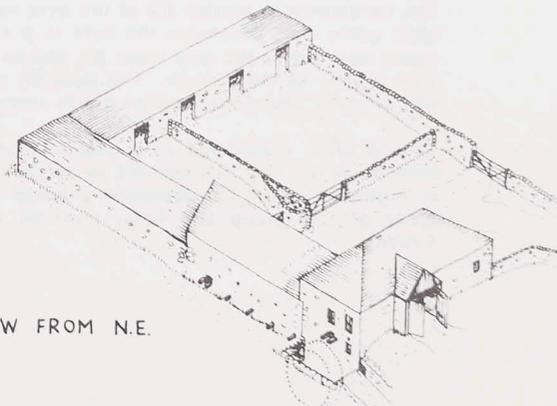
UPPER
FLOOR PLAN



PLAN.



VIEW FROM S.W.



VIEW FROM N.E.

way this building adjoins the bank-barn, and its unusual and early roof structure confirms it as the earliest part of the steading. The roof has principal rafters with collars and side purlins, the graded slates are pegged to battens and plastered underneath. At each rafter couple there are indications of a further lower collar beam having been checked in, these were probably removed when the floor levels were altered. At intervals along the exterior east wall are several projecting stone cantilevered supports, these bear no signs of fixings or wear marks. Their purpose is thus uncertain, but they must have functioned in conjunction with the threshing machine sited in the south-east corner of the 'straw-house', the opening for the drive shaft, though blocked, can still be identified. There are two alternatives: a) they carried the lade to a now defunct wheel, though there is now no trace of it or of a wheelpit. or b) they supported a drive shaft from a wheel in the current wheelpit (G); it is not uncommon to find wheelpits detached from the threshing barn, and it is possible that the Stellock wheelpit was always in its present position.

To the west wall the present entrance is a brick-quoined slapping. The original much larger near-full-height arched cart entrance has been blocked. Internally, to the south end at a height of 2m approximately, are a series of closely-spaced wall sockets to support floor joists. A few centimetres above these are lines of rubble corbels, similar to those in the bank-barn (B) and thus insertions of a later date. The walls to this upper level have been plastered, probably indicating use for grain storage. To the north gable where the building abuts the bank-barn are slappings at ground and at first-floor level. A wide opening at first floor, formerly the straw outlet for the threshing machine, indicates the change of usage from the earlier threshing barn to a straw house.

B Bank-barn. Earlier-mid-nineteenth century. Rubble built with granite quoins, piended slate roof, graded slates pegged to battens, typical common rafter roof construction. Wheelpit (G) to east wall. The 'bank' to the north wall is man-made, the raised area being walled off as a stack yard. A retaining wall was constructed to keep earth from the lower walls of the barn, and a passage left to allow light and ventilation to the windows in the ground floor north wall. The ground floor is now partly plastered and has ceramic skirting tiles and tiled floor, the west section was used this century as a slaughterhouse for sheep. Thick timber posts support the upper floor.

Access to the first floor is by a projecting gabled entry to the north wall, the threshing machine was housed to the east, with straw being deposited through the south wall as described above. The west part has been further divided with rubble corbels about 2m above the floor level, possibly indicating another grain-loft.

C & D Long single-storey L-plan byres, though the north part of this range shows some sign of alteration the byres all appear to be of later-nineteenth-century construction. Rubble walled with common rafter roofs, blue slates nailed to sarking.

The northernmost section (C) of the byre has been partitioned off by a butt-jointed solid gable wall, otherwise the byre is a single long L-plan building. Three wide doors lead out to the cow court (E), two to the farm yard (F), and one in the south wall directly to the pasture. The byre (D) shows some evidence at the south-east end of stalls, whilst the long west arm seems to have always been a loose byre.

Though often considered as a phenomenon of north-east England, it is clear that bank barns are well represented in Scotland. Elizabeth Beaton, during the resurvey of Highland Region has identified a group of about twenty in Lochaber district. A study of this group and other northern examples will shortly be published by SVBWG.

These are just four out of hundreds of sites visited during resurvey; obviously the vast amount of fieldwork and limits of time and manpower mean that the Lists cannot provide all the answers about every individual building. It must be remembered that their primary purpose is to guide Planning Authorities in application of Listed Building legislation. What they can do is highlight interesting buildings and set them in a local context; the groundwork of the Lists, especially in little-known areas, should provide readers with a valuable resource to aid further study.

BOOK REVIEWS

WELLS, Camille ed.: *Perspectives in Vernacular Architecture - II (1986)*, University of Missouri Press.
ISBN 0 8262 0628 X (cloth)
ISBN 0 8262 0613 1 (paper)

Price: £12.50

This is a useful book comprising twenty-one papers and thirty abstracts taken from the 1982 to 1984 conferences of the Vernacular Architecture Forum. The range and scope of the papers is impressive and reflects the same wide interpretation of 'vernacular' as is adopted by SVBWG.

The papers range in content from: single cell dwellings through various types of rural and urban houses to superior suburban villas; and from commercial retail outlets and rooming houses to religious meeting houses. These are presented under the headings: 'Methods for Understanding Buildings'; 'Buildings in their Geographical Contexts'; 'Types of Vernacular Buildings'; and 'Buildings in their Social Contexts'. Obviously, not all of the papers are directly applicable to the study of Scottish vernacular buildings but a book of this kind can only broaden one's perspective and heighten awareness of the value of Scottish studies in an international context.

Bruce Walker

Journal of the Historic Farm Buildings Group, vol. I (1987)
ISSN 0952 - 5513

The Historic Farm Buildings Group, formed in 1985, states its objectives to be 'the advancement of the study of the history of farm buildings in Britain, including their related equipment and the agrarian and economic environment of which they formed part, and the promotion, where appropriate, of their conservation'. From this complex piece of sentence construction it is immediately apparent that here is a broad church, within which several sects can find common cause. For some time the Group has published a lively Newsletter; the publication of its first Journal reflects the Group's growing confidence.

The diversity of backgrounds from which the Group has drawn its membership is amply demonstrated by the Journal's content. Nigel Harvey, Honorary Librarian of the Royal Agricultural Society of England, charts the growth in historic farm building research since the foundation, in 1953, of the British Agricultural History Society. Harvey traces the proliferation of interested parties: initially agrarian and academic, subsequently architectural and lay, latterly private and official. The formation of the HFBG is seen as an attempt to co-ordinate activity.

Eurwyn Wiliam, Keeper of the Department of Buildings and Domestic Life, Welsh Folk Museum, considers the use of barns. This is not so straightforward a matter as it might first appear to be; Wiliam rapidly sets to work sowing doubts where there have been superficial certainties and raising further questions which have yet to be answered. His rigorous analysis is a welcome antidote to publications, still all too common, based on generalisation or inadequate research.

Another Welsh contributor, Anthony J Parkinson (RCAM Wales), provides a farm survey report on Bryn Llefrith, Powys. Parkinson's account, which includes plans

and elevations, is descriptive and architectural rather than analytical and historical in character. Its origins, as an emergency survey (the steadying is threatened by opencast mining), may account for this approach.

John A Severn, a Nottingham-based architect, describes how redundant buildings at Manor Farm, Bleasby, have been rescued and adapted for tourist use. Severn's paper is not for the squeamish purist (the byre, turned tea-room, has distinctly non-traditional features) but it does address itself to the real problem of providing a future for redundant, and thereby useless buildings.

Kenneth Major, of SPAB, contributes an illustrated note on a farmhouse smoking chimney, one of a group of four in Hampshire. There is corroborative evidence here for 'hingin' (= hingin' food) lum proponents in Scotland. Finally, the *Journal* returns to its analytical mode in a wide-ranging paper by Susanna Wade Martins (University of East Anglia). Drawing on survey evidence from Norfolk, Martins provides tentative theories in response to a series of questions on the timing of, and motivation behind, farm building construction, the purpose of granaries and the origins of barns. As in Eurwyn Wiliam's paper, there are no easy answers; this is, however, a healthy state of affairs, given the subject's recent emergence, and it is to be hoped that publication will stimulate comparable research in other regions.

The Group has already demonstrated its enthusiastic commitment to its subject, an impression which the *Journal* helps to re-inforce. Many of the problems identified or explored by its contributors have a bearing on Scottish circumstances yet, at the last reckoning, the Group had only four members in Scotland. As yet no Scottish material has been published, and a more active Scottish involvement is needed to correct this imbalance.

The *Journal* is provided free to members of the Group (subscription £5 *per annum*). Information on the Group can be obtained from its Secretary, Mr Roy Brigden, Museum of English Rural Life, Box 229, Whiteknights, Reading, RG6 2AG.

John Shaw

Memorandum of Guidance on Listed Buildings and Conservation Areas (1987), Historic Buildings and Monuments Directorate.
ISBN 0 7480 0079 8

The Memorandum, whilst aimed principally at planning authorities, has much to commend it to amenity bodies, interested individuals or owners of listed buildings. It is pleasing to find that consideration has been given not only to Polite Architecture but also to Vernacular Building.

The main body of the work outlines and explains the legal framework within which listing takes place, the intricacies of listed building consent, the circumstances in which planning authorities might intervene and the rights of the applicant. A separate section outlines policy and practice regarding Conservation Areas. This is meaty stuff and is likely to be heavy going for the lay reader. However, for the historian of vernacular building there are several points of interest. Chapter 1 emphasises the important role which vernacular buildings of little architectural distinction can play, individually or collectively, in contributing to the character of an area. Amongst the criteria for listing, the Memorandum refers to the value of buildings in illustrating aspects of social and economic history or in demonstrating distinctive regional variations in design and use of materials.

Chapter 2, on listed building consent, advises planning authorities dealing with applications for demolishing, to take account of the light thrown by the design, plan, materials or location of a building on the character of a past age, or on the development of a particular skill or technology. Inevitably, however, this is balanced against 'the economic value of a building when repaired'. The same chapter, in acknowledging pressures for the re-use of redundant rural buildings, suggests that planning authorities might carry out surveys of such buildings in their area, from which a provisional assessment of appropriate new uses might be made. There is helpful advice on sources of architectural and historical guidance, though it is disappointing to find that SVBWG does not feature amongst the advisory bodies listed.

The second part of the Memorandum consists of a lengthy appendix giving a detailed analysis of constructional elements, external and internal. For each element there is an outline of historical developments and guidance on listed building consent. This provides easier reading than the main text and a considerable amount of sound historical information. In a more accessible format it could find a far wider market.

Coverage of vernacular detail is especially good and all the more important in that published guidance is otherwise difficult to come by. The Memorandum gives sensible advice on the sensitive questions of harling and pantiles but makes no specific condemnation of pantiles as a replacement for slate. It highlights the importance of clay and organic walling types, regional thatching materials, cruck frames and internal fixtures such as 'hingin' lums and box beds. On mills and farm buildings the Memorandum is realistic enough to recognise the probability of conversion to other uses, and the need to sacrifice secondary features while doing all that can be done to maintain each building's integrity. With the number of 'traditional' farm steadings rapidly diminishing, new purpose-built premises are seen as preferable to adaptation.

The last few pages contain a glossary of the terms used in the Memorandum.

Since January 1988 planning authorities have no longer been required to consult the Secretary of State on alterations and extensions to category C (S) or B for group buildings. Many of the buildings in these categories are vernacular in character. This is, therefore, a timely publication in that it provides the guidance needed by planners. There are, however, issues beyond the remit of this publication which are still to be addressed. No matter how great the powers that listing confers, the survival of our architectural heritage depends in the last resort on public awareness and appreciation; in an age of deregulation their importance cannot be overstated. In bringing this about, the Historic Buildings and Monuments Directorate has a key role, but the task is one in which each member of this Group should also play a part.

The Memorandum of Guidance may be obtained, price £5, from the Historic Buildings and Monuments Directorate, Scottish Development Department, 20 Brandon Street, Edinburgh EH3 5RA.

John Shaw

CONTRIBUTORS

Judith Anderson is a graduate in Art History of the University of St Andrews. She is an assistant inspector of Historic Buildings with the Scottish Development Department – Historic Buildings and Monuments Directorate. Most recently she has worked on the upgrading of the lists for Glasgow, the Stewartry and Wigtown.

Elizabeth Beaton is an assistant inspector of Historic Buildings with the Scottish Development Department – Historic Buildings and Monuments Directorate. She is particularly interested in buildings in the North of Scotland, where she lives and works.

Malcolm Bangor-Jones was educated at Jesus College, Oxford and the University of Dundee. He was awarded a PhD in 1987. Now a civil servant at the Scottish Office he is nevertheless continuing to work on various aspects of Highland economic and social history.

Robin Callander, now retired, has been involved in archaeological excavations and field survey work for many years. One of the group who prepared the recently published list of *Archaeological Sites and Monuments in Midlothian*, he is a member of ACFA and a fellow of the Society of Antiquaries of Scotland.

Graham Douglas works for the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) as a fieldworker recording Scottish industrial archaeology. Born in Australia, he has been working in Britain for two decades. After working at the Adult Education Centre in the University of Newcastle upon Tyne for several years, he took up the post of survey officer of the newly formed Scottish Industrial Archaeology Survey (SIAS) at Strathclyde University in 1978. The SIAS unit was transferred to RCAHMS in April 1985.

John Harrison has worked as a veterinary surgeon and a fish pathologist. He is now involved in historical research and writing, and is completing a book on social life in Stirling around 1700.

Miles Oglethorpe works for the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) as an investigator in industrial archaeology. After completing post-graduate studies at the Department of Geography in the University of Glasgow in October 1982, he joined the Scottish Industrial Archaeology Survey (SIAS) unit at Strathclyde University as a research assistant. He joined RCAHMS in April 1985 following the transfer of SIAS to Edinburgh.

John Shaw is an Assistant Keeper in the Working Life Section of the National Museums of Scotland. Having trained as a historical geographer, he spent four years with Glasgow Museums before joining the National Museums in 1980. He is a former SVBWG committee member and author of *Water Power in Scotland, 1550-1870*. His current work includes research into Scottish farm buildings, the vernacular buildings of East Lothian and 1920s silage towers.

Bruce Walker is co-ordinator of Scottish Building Studies, School of Architecture, Duncan of Jordanstone College of Art/University of Dundee. He is the Vice-President of SVBWG.

Tam Ward was born and brought up in Biggar. His lifelong interest in the past led to his becoming a member of the local museum and archaeology society and to fellowship of the Society of Antiquaries of Scotland in 1980. At this time some places of local historical interest were demolished and the desire to ensure that this trend should not continue led to a district-wide watching brief on all places of

antiquity, which led in turn to the excavation and consolidation work described in his article. He is the vice-chairman of the Lanark and District Archaeology Society and a trustee of the Biggar Museum Trust. He has been in charge of an MSC archaeology team at Summerlee Heritage Park and of another MSC team completing the Moat Park Heritage Centre in Biggar. He is currently co-ordinating a group of volunteers to develop all aspects of the Heritage Centre and is also preparing for two other projects: a vintage vehicle museum in Biggar and a village interpretation centre at Lamington near Biggar.

SCOTTISH VERNACULAR BUILDINGS WORKING GROUP

Subscription rates - 1989: Ordinary Membership - £4.00 pa
 Student Membership - £2.50 pa
 Joint Membership (single copy annual
 Vernacular Building only) - £6.00 pa

For membership application forms and details of publications please contact:

Sonia Hackett
Hon. Treasurer, SVBWG
24 Gardners Crescent
Edinburgh

Printed by M D Print & Design,
9 Castlebrae Centre, Peffer Place, Edinburgh.

