CONFERENCE
PROCEEDINGS

MEDIEVAL OR LATER RURAL SETTLEMENT IN SCOTLAND: 10 YEARS ON

Edited
by
Sarah Govan

ANCIENT
MONUMENTS
DIVISION

HISTORIC · SCOTLAND ·

M.S.R.G.

CONTENTS

FOREWORD

Scotland is very lucky in possessing an enormously important archaeological resource, and an extensive collection of abandoned medieval or later rural settlements. Any visitor to Scotland today is familiar with the site of abandoned farm buildings dotting the countryside. These are but the tip of a much larger iceberg. Most abandoned farms have now crumbled into grass-covered mounds. These are the farms and settlements abandoned from the late 18th century onwards. Even earlier farms and houses are all but invisible to us today. Many buildings in earlier years were built of turf and these have decayed back into the earth from which the turf was cut, and are now lost. This creates an enormous problem for archaeologists and historians seeking to understand the history of settlement in Scotland from the early centuries of the first millennium AD through to the 17th and 18th centuries.

In many ways, our knowledge of settlement in Scotland in the Iron Age is far more extensive than our knowledge of settlement in later centuries. This is partly as a result of the materials used to build these settlements. Round stone buildings, especially those as well built as brochs and duns, can survive well, and even when collapsed can form substantial mounds. Excavations of the last century and more have helped us understand and date these settlements, as well as similar structures which continued into the period when the Romans occupied the southern part of Britain. However, from about the 4th century AD dateable artefacts dry up while the settlements become invisible. Certainly some Pictish settlements have been recognised, though in small numbers and of a variety of types, which render the identification of further Pictish settlements rather more difficult. Norse settlements are readily recognisable in the Northern Isles, though not, for reasons which we do not entirely understand, in the Western Isles. Generally, however, it is extremely difficult to identify sites of this period.

It was in the face of this great gap in our knowledge, lasting for over a thousand years of Scottish history from the 4th to the 17th century, that a generation ago Horace Fairhurst undertook a campaign of excavations on abandoned farms in order to see if they had medieval predecessors. His investigations were fruitless, and so the problem remains.

In fact, the surviving remains of farms and field systems probably date to a relatively restricted period, perhaps a mere two centuries long. Nevertheless, they offer a rich archaeological and historical resource, allowing the study of regional patterns, the development of individual settlements, and farming methods. Furthermore, in view of their relatively modern date, they are an important connector to the past for many people, whose recent ancestors lived and farmed at these sites. Visitors today can frequently identify the very farm their ancestors left a hundred or a hundred and fifty years ago. This in itself is a powerful inducement towards the preservation of this significant part of our inheritance and its presentation to the public.

DAVID J BREEZE
Chief Inspector of Ancient Monuments
Historic Scotland

SEMINAR PROGRAMME

The Spring Conference of the Medieval Settlement Research Group in Association with Historic Scotland

Saturday 20th and Sunday 21st April, 2002

David Hume Tower, University of Edinburgh

SATURDAY 20th APRIL (In Lecture Theatre B, the David Hume Tower, University of Edinburgh)

9.30 - 10.00   Assemble and coffee/tea

10.00 - 10.15   MSRG President and Lesley Macinnes (Historic Scotland)   *Welcome and Introduction*

10.15 - 10.40   Olivia Lelong (GUARD)
                 Settlement in the Highlands and Islands

10.40 - 11.20   Steve Boyle (RCAHMS) and Robin Turner (National Trust for Scotland)
                 The Ben Lawers Project: survey and management

11.20 - 11.45   John Atkinson (GUARD)
                 Late Medieval Bloomery Sites: settlement and industry in the Scottish Highlands

11.45 - 12.10   Ross Noble (Highland Folk Museum)
                 Earth Buildings in the Central Highlands: research and reconstruction

12.10 - 12.45   Discussion

12.45 - 2.00   LUNCH

2.00 - 2.25   Piers Dixon (RCAHMS)
                 Champagne Country? A review of medieval settlement in Lowland Scotland

2.25 - 2.50   Fiona Watson (University of Stirling)
                 The Nature of Identity

2.50 - 3.15   Strat Halliday (RCAHMS)
                 'The Furrowed Brow': the ridged landscape

3.15 - 3.40   Tim Yarnell (Forestry Commission)
                 People, sheep, trees, now people again! Issues relating to the conservation and preservation of medieval or later settlement remains in the Forestry Estate

3.40 - 4.10   Tea

4.10 - 5.00   Discussion

                 Discussions will be chaired by Ian Shepherd (Aberdeenshire Council) and Peter Yeoman (Historic Scotland)

SUNDAY 21st APRIL
Piers Dixon (RCAHMS) and John Harrison led a field trip to examine the well-preserved and well-documented pre-Improvement landscape in Menstrie Glen, Perthshire.

INTRODUCTION

PAUL EVERSON

The Medieval Settlement Research Group (MSRG) was very pleased to hold its spring conference in April 2002 in Edinburgh, in association with Historic Scotland, on the topic of 'Medieval or Later Rural Settlement in Scotland'. We are equally pleased to see the rapid publication of the valuable papers given during the indoor part of the conference, and in this small way to support Historic Scotland's welcome initiatives in this field.

The phrase 'Medieval or Later Rural Settlement' has contributed another example – MoLRS - to the already well-populated world of archaeological acronyms. But its promulgation some ten years ago marked an important step in the widespread recognition of a rich archaeological resource of pre-Improvement settlement remains throughout the upland areas of Scotland, and in the determination to understand and value them. This is a resource, moreover, of especial social and cultural interest to the people of Scotland. Picking up this initiative, the MSRG's Annual Report in 1994 contained a brief, pioneering statement about MoLRS in Scotland by Richard Hingley and Sally Foster, entitled 'MoLRS – defining, understanding and conserving an archaeological resource'. And at about the same time, several members of the Group attended and contributed to a conference in Glasgow on broadly this theme, the proceedings of which were duly published.

The papers that follow here provide a timely update and re-visiting of this important theme. They are an opportunity to glimpse the new work that is taking the study forward in Scotland and some of the ways in which public interest and involvement is being engaged in this material. There are clear resonances in the current work promoted by CADW on deserted rural settlement in Wales, much of which is upland settlement and essentially undated at this stage of study, and with the parts of the Discovery programme in the Republic of Ireland. There are more resonances than Scottish colleagues may think, too, with evidence for upland settlement and cultivation in England. Like other aspects of largely dispersed settlement, this has perhaps been comparatively neglected in favour of lowland and nucleated remains but now – in the Atlas of Rural Settlement and various associated pieces of work – there is a national framework within which it can be more effectively characterised. What England already has is an impressive record of excavations of medieval settlements going back 50 years and more, which others may envy for the secure chronological depth they provide. Without them, the natural tendency may be to peer backwards from the secure ground of the well-documented late 18th and 19th centuries, which in Scotland's case afford a key to much of the wonderful fossilised upland landscapes. The potential here both for set-piece interdisciplinary study and for public communication is enormous. But it is encouraging also to see several approaches to the severely modified lowland landscapes of Scotland, and to their inter-relationship with their adjacent uplands, included within these papers.

This reference to the excavation tradition in England is a reminder that the MSRG was established in November 1986 from an amalgamation of the Medieval Village Research Group (founded as long ago as 1952) and the Moated Sites Research Group (founded 1971). On the basis of that pedigree, it is therefore celebrating its 50th anniversary this year. Archaeologists, geographers, historians, environmental scientists and others belong to the Group, aiming to use their disciplines and enthusiasm co-operatively in order to advance knowledge of settlements of all kinds. The Group acts as the lead special interest body for medieval and later settlement studies for the British Isles, and as a focus and inspiration for such studies in all parts of Europe*. The Edinburgh conference and this publication therefore further at least two of the Group's primary interests

- to increase public awareness of the subject by spreading information about medieval settlement as widely as possible

- to encourage the preservation of settlement sites wherever possible

We hope that they do both, and will take the Group (and those, like Historic Scotland, with whom it is glad to cooperate) into a second 50 years with renewed eagerness to understand past settlements and the societies they represent.

* (www.britarch.ac.uk/msrg/index.html)

MEDIEVAL OR LATER RURAL SETTLEMENT IN SCOTLAND: 10 YEARS ON

LESLEY MACINNES

In 1991 Historic Scotland (HS) organised a seminar to discuss issues surrounding the management and preservation of Medieval or Later Rural Settlement in Scotland (MoLRS). The papers presented at that seminar were published in 1993 (Hingley 1993), together with a note of the discussion sessions. As a direct result of that meeting, HS set up an Advisory Group to help develop relevant policy, and provide a focus for networking and discussion among interested professionals. HS also commissioned a report into the state of knowledge about MoLRS (Atkinson 1995), and subsequently produced its own guidance document on issues relating to the protection, management and interpretation of the MoLRS resource (Historic Scotland 1998).

In 2001, ten years after the original seminar, HS and the Advisory Group felt that sufficient progress had been achieved to make a second conference worthwhile. This was originally planned for April 2001, but had to be rescheduled for April 2002 because of the foot and mouth epidemic. At the same time, the Advisory Group was reformed as the more independent MoLRS Working Group, and a MoLRS Discussion Group was established to draw in a wider group of people who were either already involved in MoLRS research, or who may be interested in becoming so involved. This publication contains the papers presented at the 2002 conference, a collection that reflects the progress made in MoLRS studies in the ten years since the first seminar.

Considerable progress has indeed been made since then. There have been important new contributions in the fields of survey, excavation and research (archaeological, documentary, environmental and historical). Several surveys by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) have focussed on MoLRS landscapes, for example Waternish in Skye, Strath of Kildonan in Sutherland, and Mar Lodge in Strath Dee in the north (RCAHMS 1993; 1994; 1995); and Southdean in the Scottish Borders, and Eastern Dumfriesshire in southern Scotland (RCAHMS 1994b; 1997). Important investigations include Lairg in Sutherland (McCullagh and Tipping 1998), Easter Raitts in Badenoch and Strathspey (Lelong and Wood 2000) and Ben Lawers in Tayside (Atkinson 2000). Some projects have made particularly close use of documentary evidence, such

as Ben Lawers and Menstrie Glen (RCAHMS 2001), while the experimental research at the Highland Folk Museum at Kingussie has been of fundamental importance in helping to understand the structures themselves and their archaeological traces. Overall, there has been considerable and varied research, for instance into aspects of field systems (Foster and Smout 1994; Barber 2001; PhD theses such as by Chrystall and Guttmann at Stirling University), and farm buildings (RCAHMS 1998). Particularly important recent contributions to the body of literature on MoLRS include the proceedings of a major conference held in Glasgow in 1996 (Atkinson et al. 2000) and the series of papers in Archaeological Dialogues (Dalglish 2001). All of this work has improved the state of our knowledge of MoLRS substantially.

One thing these projects have consistently underlined is that MoLRS sites need not always represent physical continuity from the medieval period. Although this problem was first addressed by Horace Fairhurst over 30 years ago, evidence for medieval rural settlement still remains elusive. A partial explanation for this may be found in the documentary and experimental work that provides evidence for the re-use of structural timbers and other materials, and stresses the general fluidity of settlement and society. Although some evidence for the early historic and early medieval periods has been located, for example at Pitcarmick in Perthshire (Barrett and Downes 1993 and 1994; RCAHMS 1990, 71-81), it seems clear that we need to look for earlier settlement not only in the body of MoLRS remains, but also elsewhere.

At the other end of the chronological range, there has been an ambitious project by RCAHMS, with funding support from HS, to map settlements depicted as unroofed on the First Edition OS Survey of Scotland, the First Edition Survey Project (FESP). Because of the date of mapping and the timing of agricultural improvements across the country, it is likely that most of these settlements belong either late in the pre-improvement sequence of settlement, or to the early phases of improvement. They give an insight into rural settlement as it underwent considerable upheaval, and show aspects both of the pre-existing pattern and of the impact of the improvement process. This information has added over 20,000 new sites to the MoLRS

resource, all of which have been incorporated into the National Monuments Record for Scotland where the data can be accessed through the web-site, CANMORE. A preliminary analysis of this data has recently been published (RCAHMS and Historic Scotland 2002) and shows clear regional variation relating to the nature of settlement and land-use in the pre-improvement period. This is sure to assist in future MoLRS research, raising some issues to explore and assisting in answering others.

We can anticipate that FESP will help us make better informed conservation decisions through identifying priorities for survey, protection and management. It shows where the data is likely to survive best, and it gives clues into regional characteristics that will help us make selections for protection and management among this enormous resource. This process is also being assisted by the Historic Landuse Assessment (HLA) of Scotland. This project, again a joint venture between RCAHMS and HS, is seeking to map the historic influences still evident in the modern countryside (Dyson Bruce et al. 1999; Dixon et al. 1999; Dixon and Hingley 2002). Based on the OS 1:25,000 map, it uses topographical and landcover maps and datasets, vertical aerial photographs and archaeological and historical data to identify historic landuse patterns and relict landscapes over 1 hectare in extent. The resultant HLA is contained in a GIS database.

HLA depicts the dominant historical landuse processes that have affected the present day landscape and the survival of archaeological sites within it (see illus. 1). It shows patterns of historic landuse and identifies substantial areas of relict landuse. Relict areas can either be historic landuse patterns no longer in use for their original purpose but still identifiable in the landscape, or archaeological areas. These give an impression of the chronological depth surviving within the modern landscape, and, at the same time, they give a broader context to the work of FESP and the regional patterns highlighted in that project.

Over 20% of Scotland has been covered by HLA to date, taking in a reasonable geographical spread. Summary reports based on it have been published for the first two proposed National Parks in Scotland, Loch Lomond and the Trossachs (RCAHMS and Historic Scotland 2000), and the Cairngorms (RCAHMS and Historic Scotland 2001). These give an insight into the development of the landscape of the Parks, particularly for the periods relevant to MoLRS research. The combination of HLA and FESP is currently being put to practical use in assisting with the development of management strategies for some of Scotland's National Scenic Areas, in Dumfries and Galloway and in Wester

Ross. Together, HLA and FESP are helping us not only to understand better how the modern landscape character has developed, but also to articulate this understanding more easily to colleagues in other disciplines. They are particularly significant initiatives for the study of MoLRS, as these remains form the predominant element of relict landuse across most of the country.

Protection and management options for the MoLRS resource have not changed significantly in scope since 1991, though there have been important developments. Although there has been an increase in the number of MoLRS sites scheduled, progress has not been substantial. However, the results of FESP now give us a better understanding on which to build a more comprehensive scheduling programme. In other areas, improvements in planning guidance (most notably NPPG 5 and 18) are likely to have benefited MoLRS as much as other archaeological evidence. Although the range of agri-environmental schemes have developed into the unified Rural Stewardship Scheme, its broad parameters remain much the same as its predecessors. However, the establishment of National Parks in Scotland should make a big difference in the future, because their aims include conservation of the cultural heritage, of which MoLRS remains form a significant part in the first two prospective Parks, Loch Lomond and the Trossachs, and the Cairngorms. MoLRS are also likely to figure in the improved management strategies for National Scenic Areas across Scotland, currently at pilot stage, because they have played a key part in forming the character of these landscapes through both their physical presence and their influence on subsequent vegetation patterns.

For the future, there is a need for more inter-disciplinary research, along the lines of the Ben Lawers Project (Turner 2000). That project is supported by the Heritage Lottery Fund (HLF), a potentially rich vein of support because MoLRS can have a high recreational value and lend themselves well to the links with people and places that the HLF favour. Indeed, the recreational potential of MoLRS has already been recognised by the National Trust for Scotland and Forest Enterprise, both of whom present relevant sites for the public (Turner 2000; Yarnell this volume). This potential may be developed more widely within the new National Parks as these offer an opportunity to improve access and presentation for the public, with concomitant benefits for wider conservation. Access to the documentary side of MoLRS studies may also be developed further as a result of the inclusion of records relevant to MoLRS within the Scottish Cultural Resources Access Network (SCRAN), a project specifically designed to make specialist information accessible to wider audiences in their own locality.

Initiatives such as these can draw wider interest into MoLRS studies, which is vital to secure the long-term future of the resource. MoLRS are an ideal medium to stimulate interest in the heritage of different areas, partly because they can be found everywhere and partly because they are often more immediately meaningful to a wider audience than many archaeological remains. Many local archaeological and historical groups are already involved in primary research of the MoLRS resource of their own areas, encompassing both survey and documentary work. We hope that the Discussion Group will stimulate such interest elsewhere and support local groups in developing their work further. The Discussion Group will be supported by a web-site that is being developed to facilitate access to information about MoLRS and to encourage networking among those involved in its research. These developments should help give research into, and conservation of, the MoLRS resource a stronger footing for the future. They also give us great confidence as we look forward to the next ten years.

Illus. 1 The Historic Landuse Assessment shows that the modern landscape is still influenced by historic land-uses, and that these have had a major impact on the survival of archaeological evidence. Here the impact of farming, grazing and woodland is clearly reflected in the character of the modern landscape. ©Crown copyright: RCAHMS

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FINDING MEDIEVAL (OR LATER) RURAL SETTLEMENT IN THE HIGHLANDS AND ISLANDS: THE CASE FOR OPTIMISM

OLIVIA LELONG

Where upstanding MoLRS remains, particularly constituents of townships, have been excavated in the Highlands and Islands, the majority have been found to date to what is termed in this area the post-Medieval period -- that is, the century or two preceding the widespread eviction of tenants from townships in the Highlands and Islands in the early nineteenth century. A pessimist might conclude that, based on the overall picture so far, the anagram 'MoLRS', when applied to the visible remains of township and shieling sites in the Highlands and Islands, is in fact a rather wistful euphemism. That pessimist might argue that a more appropriate anagram for these sites might be 'PoMoPERS' (Post-Medieval or Possibly Earlier Rural Settlement), which rolls off the tongue nearly as easily as 'MoLRS'.

But I am not that pessimist. In this paper I would like to review the reasons for optimisim: the weight of historical, archaeological, place-name and other evidence that together comprise what Dixon (1993, 24) has called 'a *prima facie* case' for the occupation in the post-Medieval period of some earlier settlement sites and for at least some continuity in the vernacular traditions they expressed, although that settlement may have shifted, expanded or contracted over time. After briefly reviewing the archaeological evidence found so far for Medieval settlement in the Highlands and Islands, I want to consider what models and methodologies might prove fruitful in future research.

Archaeological evidence for Medieval settlement: the picture so far

Where have archaeologists found evidence for Medieval settlement, and where have they looked for it and not found it? The answers to these questions highlight certain patterns which in turn can help guide future research into Medieval rural settlement. What follows is a review of the results of archaeological investigations on MoLRS sites and the diffuse but promising scatter of Medieval rural settlement remains found in the Highlands and Islands. The review begins in the southern Highlands and moves northward through the central and northern Highlands, briefly considers the Northern Isles and then finishes in the Western Isles and western seaboard. Figure 1 shows the locations of sites discussed here.

In north-east Perthshire in the southern Highlands,

investigations at North Pitcarmick found evidence of the early Medieval occupation of an upland prehistoric landscape. Excavation of a Pitcarmick-type building produced radiocarbon dates in the seventh century A.D. for the building itself and the tenth to early eleventh centuries A.D. for the smaller structure built atop one end of it (Barrett & Downes 1993; 1994). A sherd of thirteenth- to fourteenth-century pottery was found in a rabbit scrape in another of these smaller buildings (Hooper 1997). It appears that here, upland areas favoured by prehistoric populations were inhabited for a time during the earlier Medieval period, later abandoned for the neighbouring straths and subsequently used as shieling grounds. A similar picture emerged at Carn Dubh, a few kilometres west of the known distribution of Pitcarmick-type buildings. Here a similar structure, built atop two hut circles, was found to date to the eighth century A.D.; artefacts of eleventh- to fourteenth-century date in deposits sealing the structure suggested continued activity there through the Medieval period (Rideout 1995).

Moving westward to Loch Tayside in Perthshire, excavation at Balnahanait on the supposed site of an eighteenth-century settlement found a long-cist cemetery radiocarbon dated to A.D. 640-780 (Atkinson et al. forthcoming). This date is consistent with the 'annaid' place name, indicating an association with a church probably established by the ninth century, possibly a mother church (Clancy 1995, 111). The question of whether the settlement associated with the burial ground was on the same site or in the immediate vicinity is linked to broader questions about the relationship of churches and chapels to settlement in the Medieval period; I will be returning to these questions in the latter part of this paper.

The construction of a longhouse in the nearby township of Balnasuim was dated by finds sealed within its wall to the late seventeenth or early eighteenth century (Atkinson et al. forthcoming). On the upper slopes of Ben Lawers, above Loch Tay, a suite of radiocarbon dates from shieling structures indicated their use from as early as the fifteenth century (ibid.). By contrast, a longhouse at Lianach, Balquhidder appeared to date to the eighteenth century (Stewart & Stewart 1988), while at Lix, a site known to have been occupied since the Medieval period, only the remains of late eighteenth- to early nineteenth-century occupation were found (Fairhurst 1969a). Excavations of five houses at Allt

na Moine Buidhe and Allt Lochan nan Losgunn near Kinlochrannoch in Perthshire by the late Dr. Margaret Stewart found several sherds of thirteenth- to fifteenth-century pottery at the former site, but most of the finds dated to the mid eighteenth- to early nineteenth-century (Stewart et al. 1999).

Moving northward through the central Highlands, at the township of Raitts in Badenoch, four longhouses and four outbuildings were at least partially excavated over a period of five seasons (Lelong & Wood 2000). All produced evidence of eighteenth-century occupation, but none of Medieval, although the township is documented from the fourteenth century. However, survey and trial excavation have confirmed the location of the chapel and burial ground dedicated to St. Molúog at Raitts, known to exist in the late fourteenth century and most likely pre-dating the twefth century (Lelong 2000, 83-96; Barrow 1989). Again, the relationship of the Medieval chapel to the settlement it served remains an unanswered question. The chapel site is on lower ground on the edge of the strath, while the township occupies a terrace above it.

Moving northward again, ongoing fieldwork at the homestead moat of David's Fort, near Conan Bridge, is investigating what appears to be a local power centre of likely twelfth to fourteenth-century date. Fieldwalking is being undertaken in an attempt to locate associated settlement in the vicinity (Hooper et al. in prep).

On the northern mainland, certainly in Caithness and Sutherland, one is in the area of Norse settlement from the late ninth to the twelfth centuries. By the late thirteenth century, the northern mainland had largely come under the control of the Scottish crown and became increasingly bound up in feudal charters and systems of land assessment. Norse archaeology in Scotland has tended to be treated as a separate field of enquiry from Medieval or later archaeology, perhaps because there is so much of it, at least in the Northern Isles (but for an alternative view see Crawford & Ballin Smith 1999). I would argue that this is a false separation for the northern Highlands and the Islands, one not justified by the historical circumstances. Where archaeological evidence exists for it, Norse settlement appears to have been substantial and the place name evidence would also indicate it was of a fairly committed, permanent nature (Fraser 1979; Waugh 2000; Crawford 1987). To ghettoise it as something separate from Medieval settlement (whether early or late) is to exclude a large proportion of northern settlement archaeology from the ninth to the thirteenth centuries.

Almost all of the instances of archaeological evidence for Norse settlement on the north mainland correspond to place names that are Norse in origin. The remains of substantial Norse settlement dating from the eleventh

through the thirteenth centuries A.D. have been excavated on the eastern coast of Caithness, at Freswick Links (Batey 1987a; Morris et al. 1995). On the northern coast of Caithness, settlements of Norse date have also been investigated at Dunnet Bay (Pollard 2001) and Robert's Haven (Barrett 1992). Other possible Norse sites on the northern Caithness coast have been identified as eroding midden material and fragmentary structural remains, in some cases of rectangular form; these are usefully reviewed by Batey (1987, 131-38).

Another potentially important concentration of Norse archaeology occurs westward along the northern coast of Sutherland, around Durness, where place names of Norse origin cluster. In 2000, fragments of Norse structures and midden layers were excavated above the beach at Sangobeg, while post-Medieval structural remains were also found in the vicinity (Brady et al. 2001). Middens excavated in two caves in the inlet of Allt Smoo have been radiocarbon dated to between the ninth and eleventh centuries A.D.; they may have been left by passing mariners using the caves for shelter, but some of the findings suggest links to permanent agricultural settlements nearby (Pollard forthcoming).

An ongoing research project on the headland centred on Loch Borralie, on the eastern side of the Kyle of Durness, has identified possible Norse structures eroding out of stable sand dunes; in one case later structures of seventeenth- or eighteenth-century date directly overlie them, hinting at continual occupation of the same sites over hundreds of years through the Medieval period (Lelong & MacGregor in prep).

As elsewhere, township sites investigated in the northern Highlands have so far yielded only evidence of later phases of settlement, although documentary and place name evidence indicate earlier use. Excavation at Rosal of a complex of structures, including a longhouse and barn, found evidence for its late eighteenth-century use but none for earlier, Medieval occupation (Fairhust 1968). Yet records exist for Rosal as far back as 1269 (Johnston & Johnston 1928, 35). The only evidence for a Medieval presence found was part of the handle of a late Medieval, green-glazed pitcher, retrieved from around the entrance to the souterrain near the centre of the township, which was also investigated. Like Rosal, Lairg is likely to have been a focus for Medieval settlement and an important routeway leading from eastern Sutherland to Strathnaver from the period of Norse settlement (Crawford 2000). However, the longhouse excavated at Lairg produced evidence of occupation from the mid to late eighteenth century (McCullagh & Tipping 1998).

The Northern Isles are, of course, exceedingly rich in traces of Norse settlement, with excavated sites and

Illus 1. Map of the Highlands and western Isles, showing sites mentioned in the text.

place name evidence too abundant to begin detailing here; it seems clear that Norse settlers continued to occupy farms throughout the Medieval period, such as that at Kebister in Shetland. (See Crawford (1987) and Graham-Campbell & Batey (1998) for detailed reviews of the Norse/Medieval settlement evidence in the Northern Isles.)

In the Western Isles, the Inner and Outer Hebrides have produced some of the most substantial traces of settlement from the early to late Medieval periods. On South Uist, research has suggested that, from the Norse to the Medieval and later periods, settlement shifted to different sites on the machair (Parker Pearson 1996; Parker Pearson & Roper 1995). Buildings from as early as the ninth century, but mainly from the Norse and Late Norse periods, have been excavated at Cille Pheadair and Sithean Biorach, producing imported green-glazed pottery from the thirteenth to fourteenth centuries; to the north, traces of buildings containing fourteenth- to eighteenth-century pottery were found at Upper Bornish. Excavations on North Uist around Loch Olabhat found the remains of post-Medieval farmsteads (Armit 1997). On St. Kilda, some traces of late first millennium settlement have been found in the

form of a midden deposit radiocarbon dated to the ninth century A.D., but evidence for the later, Medieval phases have yet to be found (Will 2001).

On the small island of Gunna in the Inner Hebrides, several structures – possibly shielings – dated by artefacts to the fourteenth century were excavated (James 1998). On Islay, extensive work has been conducted at Finlaggan, the power centre of the Lords of the Isles, finding traces of occupation from the thirteenth to the fifteenth centuries (Caldwell 1993; Caldwell & Ewart 1997).

On the western seaboard, place name evidence indicates an abundance of early Medieval church sites, most of them presumably established to provide pastoral care to nearby communities. In some cases upstanding field remains suggest continuous settlement from the Medieval period. At Kilmory Oib in North Knapdale, for example, the remains of a township cluster around a Medieval cross slab and well (Campbell & Sandeman 1964). Wordsworth (in prep) has identified a group of settlements at Brae Lochaber for which documentary evidence exists from the fifteenth century onward. At Loch Glashan, near Loch

Illus 2. Township and chapel sites in Strathnaver, mentioned in the text.

Fyne, a small island settlement dating from the later fourteenth century was interpreted by the excavator as an ecclesiastical settlement (Fairhurst 1969b), and considered atypical of Medieval rural settlement. Further north, fieldwork at Achnahaird in Wester Ross has identified the remains of buildings dating to the eighteenth and nineteenth centuries, as well as occupation debris and industrial activity from the fourteenth to the seventeenth centuries (Long 1996; Farrell 2000).

This review has constituted something of a gallop through the evidence, and it is by no means exhaustive. Nevertheless, it does give an idea of the general nature and distribution of the evidence. Both the gaps in the evidence and the places and circumstances under which it does occur are useful: they highlight the biggest questions facing MoLRS research in the Highlands and Islands and point to specific methodological approaches that could prove fruitful.

What patterns emerge in the presence and absence of archaeological evidence for Medieval settlement? What might explain the survival of Medieval remains where they have been found, and their absence where they might be expected? Are we looking in the right places?

From the preceding review, it appears that we generally find Medieval settlement in particular circumstances:

• on sites that did not continue in use until the nineteenth century, but were abandoned sometime during the Medieval period; examples include Pitcarmick and Carn Dubh, Freswick Links, Dunnet Bay, Cille Pheadair and Sithean Biorach. Documentary evidence records the Medieval occupation of some of the sites in this category, such as Finlaggan.

• on sites where occupation was intermittent, so that the resulting deposits were allowed to build up rather than wear away and buildings may have continued in use for a longer period of time; examples include shieling sites such as those at Ben Lawers and on Gunna.

• on sites where settlement continued through the Medieval period and into the post-Medieval, but its location shifted slightly over time; examples include Borralie and Upper Bornish.

• as artefacts or fragmentary traces surviving among or beneath later, post-Medieval township or other remains; examples include the finds of pottery at Kinlochrannoch and Rosal.

To this list I would add one other, perhaps marginal category. We often find evidence of Medieval settlement, by implication, at burial grounds and church or chapel sites with place name or other documentary evidence for Medieval origins. While, strictly speaking, these kinds of site do not constitute settlement remains, they can yield the remains of the people who actually occupied those settlements and tell us much about their lifestyle, diet and so on. Moreover, they would have constituted an important part of Medieval settlements. While the spatial relationship of churches and chapels to local settlement is poorly understood, I will argue below that such sites might be some of the best leads we have to that settlement, if methodologies can be finely tuned to find it.

Finding the Medieval horizon: Models and methodologies

In the second part of this paper, I would like to consider what methodological tools and approaches might prove fruitful in future research into Medieval rural settlement, beginning with the most common kind of MoLRS site, the township.

Discussing the absence of any evidence for Medieval occupation at Rosal, Fairhurst offered this explanation:

> The site is not littered with puzzling grassy banks and fragments of dry-stone buildings inviting further excavations. The reason seems clear. The buildings themselves were largely of turf on a dry-stone footing around an earthen floor and there were no trenches for foundations. When such structures fell into disrepair as would be inevitable after a generation or so, it would be easier to rebuild on a new site nearby, utilising the stones again, and then to run a plough over the old site to freshen up the ground (1968, 164).

Writing in the early eighteenth century, Edmund Burt caught something of this fluid cycle of buildings' abandonment and renewal. His first impressions of townships were that they were quite large; however, on drawing nearer he found that

> all the outskirts, which served to increase the extent of them at a distance, were nothing but the ruins of little houses, and those in pretty great numbers. Of this I asked the reason, and was told, that when one of those houses was grown old and decayed, they often did not repair it, but, taking out the timber, they let the walls stand as a fit enclosure for a kale-yard . . . and that they built anew upon another spot (Jamieson 1974, 29).

Given that few township investigations (of the relatively few carried out) have found traces of Medieval settlement, other than stray artefacts, is it worth investigating them at all in the hope of finding it?

As Dalglish (forthcoming) points out, one reason that excavations of township sites such as Rosal and Easter Raitts have failed to find evidence for their Medieval occupation may lie in their rather vague methodologies. Such excavations have focused on the visible remains of township buildings, 'in the hope that earlier material *may* be recovered below.' In most cases - one exception being Lairg (McCullagh & Tipping 1998) - the buildings investigated have not been entirely removed during excavation in order to expose any earlier remains sealed beneath the walls. In the structures excavated at Easter Raitts, successive layers of flooring and hearths were found, indicating a sequence of occupation but not one that apparently extended back beyond the seventeenth or eighteenth century (Lelong & Wood 2000). Fairhurst (1968) interpreted an even shorter period of occupation of the longhouse at Rosal, no more than a few decades before the eviction of its tenants.

Perhaps this should not be surprising. As Fairhurst (1968, 164) points out in the passage quoted above, the continuous occupation of a site over hundreds of years, where building stances shifted and areas between them were cultivated, would tend to sweep away earlier occupation traces rather than allow them to build up. Still, where townships have documented Medieval origins, they may hold the potential for fascinating insights into how rural vernacular settlements changed over the centuries of their existence. Further fieldwork is needed to establish whether that evidence indeed survives on township sites, if suitable methodologies are employed to find it.

Given what we know from observers like Burt, a fruitful approach might be to open up larger areas in townships than have previously been excavated. Trenches might be opened over visible buildings but also over the apparently blank spaces between them, and the remains of post-Medieval buildings could be entirely removed. Work at the Highland Folk Park in Newtonmore has shown that a single course of stone footings as a base for a turf wall acted as a kind of damp course, helping walls to survive for longer (R. Noble, pers. comm.). It would have been easier to shift a single course of stone footings from an old house stance to a new one than it would have been to find and carry other boulders and start afresh. Organic materials such as wood, turf and wattle-and-daub may have been favoured above stone in earlier centuries, and these would have left only ephemeral traces. Even given these factors, by looking more thoroughly and widely in township sites, we might find features such as postholes or pits, hearths or floor scoops.

In addition, we ought to prospect actively around the edges of townships for the remains of its earlier incarnations, through walkover survey, geophysical survey, fieldwalking and test-pitting. Dodgshon (1998, 57) postulates that feudal control over tenanted lands gradually encouraged the 'ring-fencing' of separate farms, bringing tenants together spatially, economically and socially in necessarily cooperative arrangements. Burt's observations also indicate that township sites shifted slightly over time -- coalescing, expanding, contracting, with houses left abandoned to decay while new ones were built around them. If either is correct, the areas around visible remains should contain the buried remains of earlier structures and field systems.

While townships with documented Medieval origins may still be worth investigating for evidence of earlier occupation, other kinds of sites, such as those abandoned earlier or occupied intermittently, are likely to yield better preserved evidence -- as the review in the first part of this paper demonstrates. How, then, do we find these sites and gain access to that evidence?

Interpretations, theories and models such as Dodgshon's can be valuable aids to finding archaeological evidence of Medieval settlement. However, they should be treated as the theories they are, not assumed to reflect historical or archaeological reality. In fact, archaeological fieldwork provides the opportunity to test such theories about, for example, the role of land assessment in the process of township formation and the relationship of infield and outfield to that process. By the same token, they can provide useful guidance to research designs and a focus for hypotheses and predictive models. For example, as suggested above, one could begin at extant township remains and work outwards, prospecting for earlier remains to find phases of settlement pre-dating the final coallescence.

In designing surveys and forming predictive models, we should be considering what factors would have influenced settlement location in the Medieval period. These factors might include good drainage, access to water, natural shelter, favourable aspect, productive soils and so on. In a particular area or strath, the zone of presumed settlement might be narrowed down by examining the known distribution of townships. For example, in Badenoch the townships tend to occupy the fluvio-glacial terraces that line upper Strathspey, rather than the wetter floor of the strath or the rougher, higher ground. It is likely that the Medieval pattern of settlement was similar, perhaps more diffuse than the post-Medieval. Within a given area, finding spots with favourable conditions on the micro-topographic scale could help to identify those places with high potential as house sites. Targeting sites which appear to have high potential, which lack nineteenth-century records of occupation and which also lack visible prehistoric remains, could yield negative features dating to

Medieval occupation. That occupation would have stripped away prehistoric field monuments, which might normally be expected on a favourable site (R. McCullagh, pers. comm.).

A predictive model along the lines suggested above could, especially when linked to other kinds of evidence, prove extremely fruitful in locating more substantial traces of Medieval settlement in the Highlands and Islands. In particular, the evidence of place names, charters and chapel sites seems especially relevant, although their use requires a critical approach that sets out to form and test hypotheses about the past. I want to consider how these different kinds of evidence might be used to locate Medieval settlement sites with particular reference to Strathnaver, the valley in northern Sutherland that drew Horace Fairhurst's attention almost 40 years ago.

The place name evidence from Strathnaver suggests the continual occupation of settlements from the period of Norse linguistic influence, before A.D. 1200 (Fraser 1979, 18), to the early nineteenth century, when many of the townships were cleared for sheep walks. Thirty-six settlement names that are Norse in origin are known in the strath. Thirteen of the Norse names, or 36%, appear in charters throughout the Medieval period, and 23 of them, or 63%, are shown as settlements on the late sixteenth- to early nineteenth-century maps. In all, a suite of 18 settlement names appears consistently in charters from the thirteenth to the sixteenth centuries and on maps from the late sixteenth to the early nineteenth centuries (see Illus 2). The precise location and nature of the settlements may, of course, have altered over time (c.f. Dodgshon 1998).

This consistency does suggest that these 18 names applied to settlements that continued to exist, in some form or other, throughout this period of 1000 to 1300 years, by people who worked the land and generated the produce that made their farms desirable subjects of grants and feu agreements. The charters demonstrate the degree to which lands in Strathnaver were bound up in the feudal system of land assessment as early as the late thirteenth century.

Six of these townships may have even earlier origins, pre-dating Norse settlement, indicated by chapel sites with probable early Medieval origins (see Figure 2). There are five chapel sites in the upper strath – Klibreck, Grumbeg, Langdale, Skail and Rivigill, all names Norse in origin -- and two at its mouth, Farr and Eilean Coomb. The latter is the supposed site of a monastery dedicated to St. Columba, and was shown as an ecclesiastical site on Pont's map of the late sixteenth century. Of these seven chapel sites, four have archaeological evidence in the form of early cross slabs (Klibreck, Grumbeg, Skail and Farr) or an oval enclosure (Rivigill) to suggest their origins in the late first millennium A.D.

The relationship of chapels to local settlement is a tantalising and contested question; see, for example, Macquarrie (1992) and Foster (1997) for discussion of these issues. While it would be unwise to assume simple and close proximity of settlement to chapel site, it does seem likely that chapels and churches that existed to provide pastoral care to communities (as opposed to providing eremitic withdrawal for monastics) would have been reasonably close to the settlements they served. The pattern of townships and chapel sites in a particular area might, when combined with geographic factors, provide leads to their spatial relationships in that area. In Badenoch, for example, while the townships occupy the better drained fluvio-glacial terraces along the sides of Strathspey, a suite of early chapel sites hugs the edges of the strath's floor, perhaps lying along an old routeway (Barrow 1989; Lelong 2000).

In Strathnaver, the distribution of chapel sites along the strath sheds light on the Medieval settlement pattern. There are chapel sites at fairly regular intervals along the upper part of the strath, but none in the lower except for the two at its mouth. Most of those in the upper strath occupy the flat ground on the floor of the strath, good arable ground, while townships tend to cling to the edges of the strath, often the first terrace above the floor. The positions of chapels on the floor of the strath, taking up potentially good farmland, may reflect their importance to communities. At Grumbeg and Klibreck, however, the chapels sat just below the undulating ground occupied by township remains.

The cumulative evidence of the chapel sites in Strathnaver, on the ground and in their names, would indicate that from the early Medieval period (from c. A.D. 700) through that of Norse influence in Strathnaver (to at least A.D. 1200) and the succeeding centuries, there were communities along the strath to which they provided pastoral care. Excepting Eilean Coomb, all of the chapel sites correspond in name to settlements known to exist throughout the Medieval period and into the early nineteenth century. Grumbeg's and Klibreck's chapel sites lie within the upstanding remains of the later townships, but in the other cases nothing is visible above the surface of the townships themselves; early twentieth-century crofting activity removed or cannabalised the remains of many cleared townships (Temperley 1977).

Of the townships of Strathnaver, Klibreck best illustrates the potential for MoLRS research into earlier occupation of townships. Klibreck, its name Norse in origin, lies along what was most likely an important routeway from the eastern seaboard in the Norse/ Medieval period (Crawford 2000). A chapel site with a cross-incised slab sits in a boggy hollow at the lower edge of the township. The remains of the township are spread along an undulating terrace above it, restricted

by crags to the south. Unlike Rosal, which is devoid of 'puzzling grassy banks and fragments of dry-stone buildings' (Fairhurst 1968, 164), Klibreck consists of a bewildering jumble of visible remains: sub-circular, oval and rectangular structures and enclosures; amorphous platforms, traces of walls and fragments of turf banks, with intermittent orthostats. A small, rectangular structure here has been identified as possibly Norse by Batey (1987). Given the indications of its early origins, this township is one of the most likely to have had continuous occupation for a long period of time, and the surface remains further hint at chronological complexity.

One way forward for MoLRS research in the Highlands and Islands might begin by targeting sites such as Klibreck, where documentary and place name evidence and its chapel site all point to Medieval origins, and where the visible remains suggest that not all traces of earlier occupation have been obliterated by the later. Detailed survey of the township could be followed by sample excavation of some of the more amorphous features to assess the potential for survival of any earlier deposits. Elsewhere in Strathnaver, a different approach might be employed. For example, Langdale has a chapel site, a Norse place name and documented Medieval settlement, an intriguing sub-circular earthwork (known as 'The Tulloch') of possibly Medieval date on the floor of the strath and the remains of the township on the edge of the strath above it. Here, prospection techniques such as detailed walkover survey and geophysical survey could be combined with trial excavation of the earthwork and the township to locate evidence of Medieval occupation and understand the socio-economic and chronological relationship, if any existed, between them.

These ways forward would be suitable, with adjustment to local topographic conditions and historical evidence, to many parts of the Highlands and Islands under the auspices of a research project. However, commercial archaeological projects offer the chance to examine areas for Medieval settlement on a larger, if still restricted scale. For example, linear projects such as roads upgrading or pipeline construction present the opportunity to study a slice through the landscape, to identify sites with high potential for Medieval remains through walk-over survey and documentary research and then test that potential through trial trenching or topsoil stripping.

The places where Medieval remains have already been found in the Highlands and Islands can illuminate why the large gaps exist in the record for these areas. By learning from what we know; by actively engaging with and formulating field strategies to test historical theories; by developing, refining and testing models designed to predict where Medieval settlement might be expected, and by using documentary evidence as a general guide to fieldwork designs, we will gradually fill in the picture of the 'Medieval' as well as the 'later.'

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BEN LAWERS: AN IMPROVEMENT-PERIOD LANDSCAPE ON LOCHTAYSIDE, PERTHSHIRE

STEVE BOYLE

Introduction

During 2000, the Royal Commission on the Ancient and Historical Monuments of Scotland undertook a detailed survey of the southern slopes of Ben Lawers, which rise above the north shore of Loch Tay in central Perthshire. The survey was conducted in partnership with the National Trust for Scotland, which owns both the open ground of the mountainside and some of the enclosed ground below. The Trust supported the project with the assistance of a grant from the European Union. The principal aim was to map the visible archaeology from the mountainside down to the shores of the loch as a preliminary to the forthcoming Ben Lawers Historic Landscape Project (Turner, this volume). Sixteen weeks were spent on the ground, mapping and recording over 2,000 structures and almost 300km of earthen banks, stone dykes and trackways in an area amounting to about 68 sq km.

The survey revealed a wide range of monuments dating from the Neolithic period onwards, including a large number of cupmarked rocks. The vast bulk of the data, however, dates from the last 300 years and, in

Illus 1. Location map, showing places mentioned in the text. Nos 1-13 indicate the sites of farmsteads depicted on illus 2.

particular, from the period of agricultural improvements in the late 18th and early 19th centuries. This paper focuses on the evidence from that period. A brief discussion of the historical background is followed by a summary of the recorded archaeological evidence for settlement and agriculture on the enclosed ground before and during the agricultural improvements. Finally, the use of the open mountainside for shieling and peat extraction is discussed.

The Survey Area (Illus 1)

Ben Lawers, which rises to 1214m OD, is the 10th highest mountain in Scotland. It stands at the centre of a range of peaks forming the watershed between Loch Tay, to the south, and Glen Lyon, to the north. The range is composed principally of schists, overlain on the lower slopes by glacial deposits. A band of limestone runs from south-west to north-east across the lower slopes of the mountain. The ground rises steeply from the lochside, but towards the centre of the area it flattens out at about 200m OD onto a terrace about 1km broad, which is studded with numerous morainic mounds. Behind this terrace the ground rises steeply again, crossing onto open moorland at about 400m OD. At the eastern and western ends of the area, however, the ground rises more steadily from the loch to the open hill. The lower slopes are largely given over to farms raising a mixture of sheep and cattle, though diversification into tourist developments, including caravan parks, pony-trekking and a chalet complex, is making an increasingly visible impact. Most of the loch shore is fringed with birch and oak woodland but, apart from small pockets of forestry, and two areas on the open mountainside where the National Trust for Scotland is encouraging the regeneration of broadleaf species, the rest of the area is largely unwooded.

Previous fieldwork

The quantity of archaeological remains on Ben Lawers has often been recognised. Miller (1967) drew attention to the large numbers of shieling-huts on the mountainside, and his work was augmented by the Archaeology Division of the Ordnance Survey in 1969 and 1978, and by the Association of Certificated Field Archaeologists in 1994-5 (MacInnes 1996). On the lower ground, a study of farming settlement has been undertaken by Morrison (1985), and McKeague and Sangster (1991) have mapped the farm of Cragganester in detail. Most recently, from 1996 to 1998, Glasgow University Archaeological Research Division (GUARD) completed a series of pilot studies in advance of the Ben Lawers Historic Landscape Project, including the survey and excavation of a group of shieling-huts on the Burn of Edramucky and part of a township at Balnasuim (Atkinson 2000; Atkinson et al. 1997a, 1997b and 1999; MacGregor 1999).

Historical background

The survey area lies at the heart of the former estates of the Campbells of Glenorchy, who were created earls of Breadalbane in 1681. The Breadalbane Muniments now form one of the largest deposits within the National Archives of Scotland (NAS), offering an enormous quantity of information on the management of the estate, particularly during the improvement period. To date it has only been possible to scratch at the surface of this archive and examine a few readily-identifiable documents in order to illuminate the process of improvement and enable changes in the tenant structure to be explored. More thorough research is planned by the Ben Lawers Historic Landscape Project, and the following sketch is offered in the knowledge that much of it will shortly be amplified and amended.

A key component of this archive for the interpretation of the archaeological remains is the survey of North Lochtayside in 1769 by John Farquharson, which was commissioned by the 3rd Earl of Breadalbane (McArthur 1936). With two assistants, Farquharson spent twenty-three weeks in the field, and another eighteen weeks drawing up his results, producing a series of twenty-four plans. These show buildings, fields, woodland, watercourses and trackways at a scale of 1:5400 (NAS RHP 973/1), and they are accompanied by a Book of Reference (NAS RHP 973/2) detailing tenants' names, landuse, acreages and offering general comments on the condition of each farm. Three years later, Farquharson produced a more generalised map of the whole area at 1:17800 scale, which also showed grazing divisions on the mountainside and the location of several groups of shielings (NAS RHP 569).

The area of the archaeological survey is shown by Farquharson to have been divided between thirty-six farms. Four farms were held by a single tenant, but the others were held jointly by up to ten tenants. The farms varied in size from 33 to 303 Scots acres (c.17 – 156ha), of which a little under a quarter was classed as infield, continuously cropped with bere or oats. A slightly smaller proportion was described as outfield, cropped with oats for several years and then grazed to enable it to recover. Meadow and woodland were relatively minor components, but grass accounted for almost half the enclosed ground. Grassland was particularly dominant in the large farms between the Allt a' Mhoirneas and the Lawers Burn. Here, Farquharson depicts two head-dykes (Illus 4), the upper one enclosing 'grass lately taken from the muir'. This intake added about 650 Scots acres (c.334ha) of grassland to the farms concerned, an increase of 68%, reflecting the importance of the cattle trade in the mid-18th century.

Farquharson's plans depict 684 buildings, most of them clustered into about 120 settlements, all of which were located amongst or adjacent to the infields. Each settlement comprised on average five or six buildings and one or two small enclosures, though some clusters were much larger, seven examples having ten or more buildings. Some of these settlements no doubt represent the steadings of individual tenants, but it is clear that many tenants lived with their neighbours in large settlements. At Croftantayan, for example, one large settlement of twenty-seven buildings accommodated all six tenants.

Farquharson suggested a variety of improvements, and noted that progress had already been made on a few farms. Improving leases of twenty-one years' duration were granted to some tenants between 1771 and 1773, but otherwise little change appears to have taken place until 1797-8. The joint holdings were then finally broken up, and each farm was divided into lots, to be leased for fifteen years. The 'Terms of the General Lease for Loch Tayside' (NAS GD112/10/2/2/23) laid down standards for buildings, stone dykes and drains, and insisted that a five-fold rotation be followed. Initially, the new regime met with some discontent, prompting the 4th Earl (later the 1st Marquis) to condemn those who spread disaffection (NAS GD112/14/13/7/6). Premiums were offered to the best improvers (NAS GD112/12/1/2/36) and, in 1800, progress was reported in enclosing, clearing and draining fields, and also in the construction of new steadings (NAS GD112/12/1/2/2, 7 & 12). Among these new steadings there are several built on the old outfields, which were divided into new farms in their own right.

The improvement process on Ben Lawers did not involve large-scale clearance of small tenants. Indeed, in 1803 the factor noted that no more than eighteen families around Loch Tay had been removed (NAS GD112/12/1/2/36) and estate rentals confirm that tenant numbers were maintained. Wester Carawhin, for example, which had nine tenants in 1769 and eight in 1796 had ten or eleven named in rentals from 1811 to 1828. A change in policy followed the succession of the 2nd Marquis in 1834. An assessment made in 1836 of the 'management and character' of each tenant, complained of the poor attention given to rotation, stone clearance and drainage works. The tenantry of the western half of the survey area, from Kiltyrie to Tir Artair, were singled out as being particularly unsatisfactory, and amalgamation of holdings was advocated by the estate factor (NAS GD112/12/1/6/53 & 56). In the event, however, two large farms, Tir Artair and Morenish, were soon cleared altogether, in order to make way for sheep (NAS GD112/10/2/4/45-6). Change appears to have been more gradual in the rest of the area, but by 1862, when the Ordnance

Survey (OS) mapped the area (Perthshire 1867, sheets LVIII, LXVIII and LXIX), a process of amalgamation had left a landscape littered with ruined settlements, most of which survive to this day.

The archaeology of the improvements

Farming settlements

The remains of 108 settlements were recorded during the archaeological survey. They range from small farmsteads comprising two buildings and an enclosure to extensive clusters of ten or more buildings. Sixty-five of them occupy the sites of settlements depicted by Farquharson, representing just over half of those mapped on the 1769 survey, the rest of which are now overlain by modern buildings or lost to agricultural improvements and forestry. At forty-six sites the ground plan visible today at least partly matches that depicted in 1769, suggesting that Farquharson's plans are not stylised, but are reliable representations of the settlements as they were in the mid-18th century. If this is correct, it follows that where the extant remains do not match his survey this can be taken as good evidence that the settlement has been remodelled since 1769. The forty-three settlements that do not occupy the site of a settlement on Farquharson's plans were probably established following the reorganisation of joint tenancies into individual lots in 1797-8. Almost all of these new steadings were constructed on the former outfields, and very few appear to have been established amongst the infields. The infields were also divided into single-tenant lots, but here it appears that rather than construct new steadings on their individual holdings, the tenants continued to live at the old settlements.

A representative sample of settlement plans has been drawn together to illustrate the variety of layouts (Illus 2). The first six are farmsteads standing on the former outfields. Most of these have a simple layout, comprising a house or byre-house (that at Achadh Ban has a byre drain), a barn and one or two enclosures. Limekilns are also common. Farquharson repeatedly drew attention to the ready availability of limestone across the outfields, but lamented that little use was made of it. Lime, however, would have been essential to bring the outfields into regular cultivation; accordingly, there are numerous small quarries across these areas, and kilns can be found adjacent to many steadings and occasionally at the edges of fields. The farmsteads on the outfields had a short life, and almost all of them were abandoned by 1862. One exception was Tomavorar, constructed on the outfields of Carawhin in an area described by Farquharson as 'good deep dry ground and better than some of the infields' (McArthur 1936, 27). This steading is likely to be the

one constructed in 1800 by John Malloch, a tenant repeatedly praised in the estate records as a good improver. It survived into the late 19th century but is shown unroofed on the second edition of the OS map (Perthshire 1900, sheet LXIX NW).

The other settlements illustrated all appear in some form on Farquharson's map. The layouts at Tomocrocher, Blaliargan 2 and Wester Kiltyrie match closely; at the first of these the buildings are disposed in an informal arrangement, but at the other two they are grouped around a central yard, indicating a degree of planning. Blarmore and Margdow contain some elements of the 1769 plan, but Balnreich has been completely remodelled, as have the settlements of Tomour and Croftvellick, each of which has been redesigned as a pair of steadings comprising house, barn and ancillary outbuildings.

The physical remains of the farmstead buildings range from well-preserved shells to rows of large grounders edging slight platforms. Where walls survive, they are usually of drystone rubble with squared corners and roughly-dressed quoins; hardly any show traces of mortar, but this need not indicate drystone building as both lime and clay bonding could easily have washed out. Stone gables were recorded in eighty cases, though often collapsed into piles of rubble. Cruck-slots, usually blocked up during a later refurbishment, can be seen in the walls of eighteen buildings, invariably starting a little over 0.5m above ground level. One cottage, which is still roofed, retains a pair of crucks *in situ*. The buildings range widely in size, but the majority measure internally between 6m and 12m in length and between 3.7m and 4.4m in breadth.

No significant difference can be detected between the buildings of the infield steadings and those established on the outfields. This may indicate that most of the infield steadings were extensively refurbished at the same time as the new farmsteads were established on the outfields. Thus, while the layout of many of the infield farmsteads was retained from the mid-18th century, the buildings themselves were replaced. Certainly, in 1800 several tenants were commended for building new steadings on both the infields and the outfields (NAS GD112/12/1/2/2, 7 & 12), and the general lease of 1797 ordained that tenants' houses should be 'thirty feet (9.1m) in length and fourteen feet (4.26m) in width both within walls' and that the offices (barn, byre and stable) should not be less than thirteen feet (3.9m) in width, proportions that are close to the size of most of structures recorded (NAS GD112/10/2/2/23).

The infield settlements at Wester Carawhin illustrate patterns of development that have been observed throughout the survey area (Illus 3). In 1769 three settlements, Marragnaha, Marragdow and

Marragphuil, were held by a total of seven tenants. Marragphuil, the easternmost, does not appear in the rentals after 1796, and was probably merged with the other two, which between them maintained seven tenants until at least 1828. By 1835, however, there were only five tenants, three of them at Marragdow and two at Marragnaha. Despite a proposal to amalgamate the five holdings into one (NAS GD112/12/1/6/50 & 56), five tenants are again named in an 1862 list of arrears (NAS GD112/9/2/4/8). By coincidence, the Ordnance Survey mapped Lochtayside in that year, and they depict five roofed farmsteads – three at 'Margdow', one at 'Margnaha' and another one named Margcraggan. Two further steadings, one of them at the site of the 18th-century settlement of Marragphuil and the other to the north of Margcraggan, were both roofless in 1862, and may account for the sixth and seventh tenants listed up to 1828.

The remains at Margcraggan match closely the OS map depiction of 1862, but a comparison with the 1769 survey suggests that the steading had been extensively remodelled by that time. The steading to the north presumably dates to the years following the reorganisation of 1797-8, and is a rare example of a farmstead established amongst the infields after 1769. The buildings at Margnaha closely match those at the centre of the 1769 settlement, though the other buildings have been destroyed. The township at Margdow had by 1862 been remade into three farmsteads, each with a house, a barn and one or more small enclosures. Something of Farquharson's plan, however, survives in the southern steading, where a byre-house and a barn probably stand on the foundations of 1769 buildings. Immediately to the north of the byre-house there are traces of two further buildings, now reduced to rectangular platforms, which also match Farquharson's plan. Finally, Marragphuil has also been partly rebuilt since 1769, but again traces of buildings not depicted by the OS in 1862 bring the overall ground plan closer to that of 1769.

Fields and trackways

The pre-improvement infield areas are, by and large, those that have continued to be farmed most intensively down to the present day. In these areas, mostly confined below the line of the modern public road, the stone-walled fields of the improvement period have been thoroughly cleared of traces of the earlier regime. Above the road and to the west of the Lawers Burn, however, extensive traces of rig cultivation and earthen field-banks survive. The field-banks tend to follow the burns and the edges of boggy ground, enclosing irregular plots of dry ground, and in several instances they correspond well with the boundaries of outfield plots depicted by Farquharson. The rig is usually
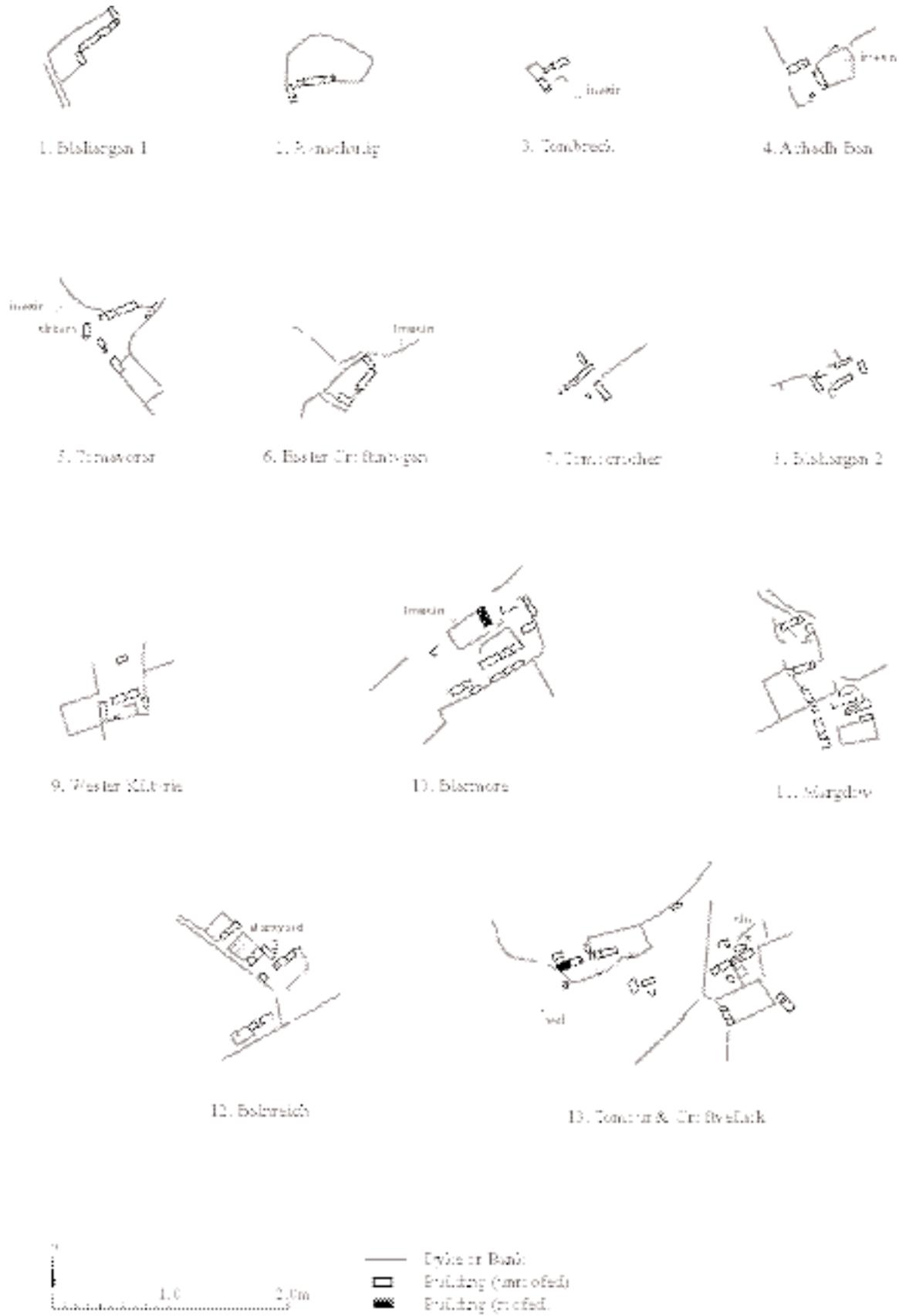
Illus 2. Comparative plans of farmsteads.

straight and defined by shallow grooves, a type that has been associated with improvement period agriculture elsewhere (Dixon 1994, 41; Halliday, this volume), and much of it is probably contemporary with the colonisation of the outfields from 1800 onwards. Some areas of rig, however, are enclosed by banks and traversed by stone dykes probably dating from the reorganisation at the end of the 18th century. These areas may be of slightly earlier date.

The establishment of the new farms on the outfield effectively cut off the older settlements from the hill grazings. To circumvent this problem a series of loanings, or broad trackways, was constructed, leading from the road to the head-dyke. Many of them can still be followed, defined by pairs of stone or earthen dykes and usually climbing straight up the hill (Illus 5). Frequently, one side of a loaning coincides with a march dyke that is still maintained, while the other is reduced to a low spread bank.

Shielings

Above the head-dyke lay the high pastures, or shielings, which were exploited during the summer months in order to keep the stock away from the growing crops and the pasture on the low ground. The practice of shieling is recorded on Ben Lawers from the early 16th century (Bil 1996, 10) and recent excavations on a group of shieling-huts on the Burn of Edramucky have produced radiocarbon determinations spanning the period from the late 15th to the early 17th centuries (Atkinson 2001, 125). Bil (1996), drawing on the Breadalbane Estate papers, particularly the Baron Court records, has illustrated something of the complexity of the regulations governing the shielings from the 17th to the early 19th centuries. Stock were taken above the head-dyke in early May for five or six weeks, before being removed for a further month to more distant shielings. Some of these lay in the upper reaches of the glens beyond the watershed dividing Lochtayside from Glen Lyon, where the North Lochtayside tenants had rights to pastures belonging to the Glen Lyon tenantry. In the late summer the milk cows were returned to the low ground, where they grazed on the stubble in the arable fields, though other stock might remain longer on the hill. Traditionally, the women and children tended the livestock, milked them and produced butter and cheese, living in groups of small huts at each shieling.

By the late 18th century the system was in decline. Part of the hill grazings had already been enclosed by the construction of a new head-dyke. Further pressure on the shielings came from the introduction of flax and potatoes, crops that needed closer attention during the summer months than bere and oats, but the most significant factor in highland Perthshire was undoubtedly the drive towards sheep farming (Bil 1990, 282-292). Although no Ben Lawers farms were cleared for sheep until 1840, their arrival in upper Glen Lyon in the 1790s resulted in the loss to Lochtayside tenants of some of the high pastures on the Glen Lyon side of the watershed, given in compensation to Glen Lyon tenants. The erosion of traditional grazing patterns continued into the early 19th century, and the practice of shieling had dwindled away by about 1840 (Bil 1996, 11-19).

The principal archaeological evidence for shieling lies in the huts that survive in large numbers above the head-dyke (Illus 4). Over 700 huts were mapped and measured during the survey, and fragmentary traces of another 200 structures, too degraded to classify satisfactorily, were also recorded. The majority are to be found between 450m and 650m OD, concentrated into groups along the major burns and at the edges of terraces of relatively level, well-drained ground, where the best grazing was presumably to be found. Many of these groups are quite extensive, often containing more than twenty huts, and one group on the Lawers Burn boasts over sixty. Farquharson's 1772 map shows the hillside divided into nine grazing areas. At least one large group of huts, occurs within each area except Kiltyrie, which is noticeably smaller than the others. Bil (1996, 16) notes that in 1682 part of the Riol, a large grazing beyond the watershed, was rented out to Kiltyrie but, as several other farms had grazing rights there too, this does not entirely explain the absence of huts on its share of the ground above the head-dyke.

The huts can be divided into three classes on the basis of their construction. A fourth class of structure, previously considered to be a type of shieling-hut, is discussed in the next section. The first class, comprising the vast majority of the huts, are built largely or entirely of turf. Most of them are roughly rectangular in plan, averaging 2.9m in internal length by 1.7m in breadth, though some (especially the smaller ones) appear to be oval or circular. The second class comprises 165 rectangular huts with an internal stone facing encased within an outer shell or embankment of turf. These are distinctive structures, common on shieling grounds in many parts of the Central Highlands (e.g. RCAHMS 1995, 21). They tend to be larger than the turf huts, most measuring internally between 4m and 6m in length and between 1.5m and 2m in breadth, though twenty-four of them stand out as being very small, less than 2m in length. Many huts have small aumbries set into the walls;

Illus 3. Settlements on Wester Carawhin. Top: extract from John Farquharson's 1769 survey (reproduced with permission of the National Archives of Scotland, NAS RHP 973/1). Centre: extract from Ordnance Survey 6-inch map, surveyed 1862. Bottom: extract from RCAHMS survey, 2000. All maps at 1:5000 scale.

Illus 4. Hill grazings in 1772 and distribution of shieling-huts.

another common feature is an edge-set slab protruding from the inner wall face to one side of the doorway, and probably forming one side of a hearth. One example, at the head of the Lawers Burn, has a possible cruck-slot set into the wall at each end. The entrances are commonly flanked externally by a pair of broad turf banks, probably representing accumulations of midden material, though they might also have provided extra protection from the elements. The third class of huts comprises seventy-six rectangular structures that are built entirely of stone and have slightly larger average dimensions than those encased in turf. Following excavations on the Burn of Edramucky, Atkinson (2000, 155-6) has identified a further class of hut, comprising oval turf structures set into natural mounds; however, while huts on top of low knolls were recorded during the survey, they do not appear, from the surface

remains, to be sufficiently distinctive to constitute a separate architectural type.

In their degraded states it is sometimes difficult to assign an individual hut to one class or another with complete confidence. Many of those classified as turf-built incorporate a certain amount of stone in their walls, and some of these may be collapsed examples of the turf-embanked class – especially a few from whose remains an edge-set stone protrudes close to the entrance. Equally, several of the stone huts share characteristics with the turf-embanked huts – middens, aumbries and, once again, edge-set slabs.

Most of the shieling groups contain a mixture of turf and turf-embanked huts, and often one or two stone huts as well; only a handful comprise turf huts alone. This mixing of styles suggests some chronological

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depth, which has also been demonstrated by the excavations on the Burn of Edramucky. It seems likely that the turf huts are the earliest, though it would be dangerous to assume a simple progression from turf to stone, and the two materials may well have been used side-by-side. Frequently huts appear to have been built in pairs, with a large structure standing next to a much smaller one. This is a common feature of shieling groups across the Central Highlands; one explanation might be that the larger hut was a dwelling, the smaller one a dairy (RCAHMS 1995, 25).

Apart from the huts, most groups also feature a few small enclosures or folds, built of either turf or stone. These vary in size and shape, but one common and distinctive type is oval or circular in plan, measuring up to 6m in diameter within a turf bank.

Most huts are found in the groups discussed above, but there are also about fifty that stand in isolation, well away from any shieling group. Roughly half of these, all of them turf-built, are found amongst the outfields below the head-dyke, and are probably shelters associated with cultivation and stock management there. Those above the head-dyke probably served a range of functions. Some may indeed be shieling-huts, others, hidden in burn gullies, may have been illicit stills, but many of them are probably shepherds' huts dating from the 19th century. This may explain the scatter of stone huts above Morenish, towards the west end of the area, which was let to sheep farmers in the 1840s. Some of the stone huts within the shieling groups may also have been constructed by later shepherds who would have exploited the same grazings and would have found the earlier structures a convenient source of building material.
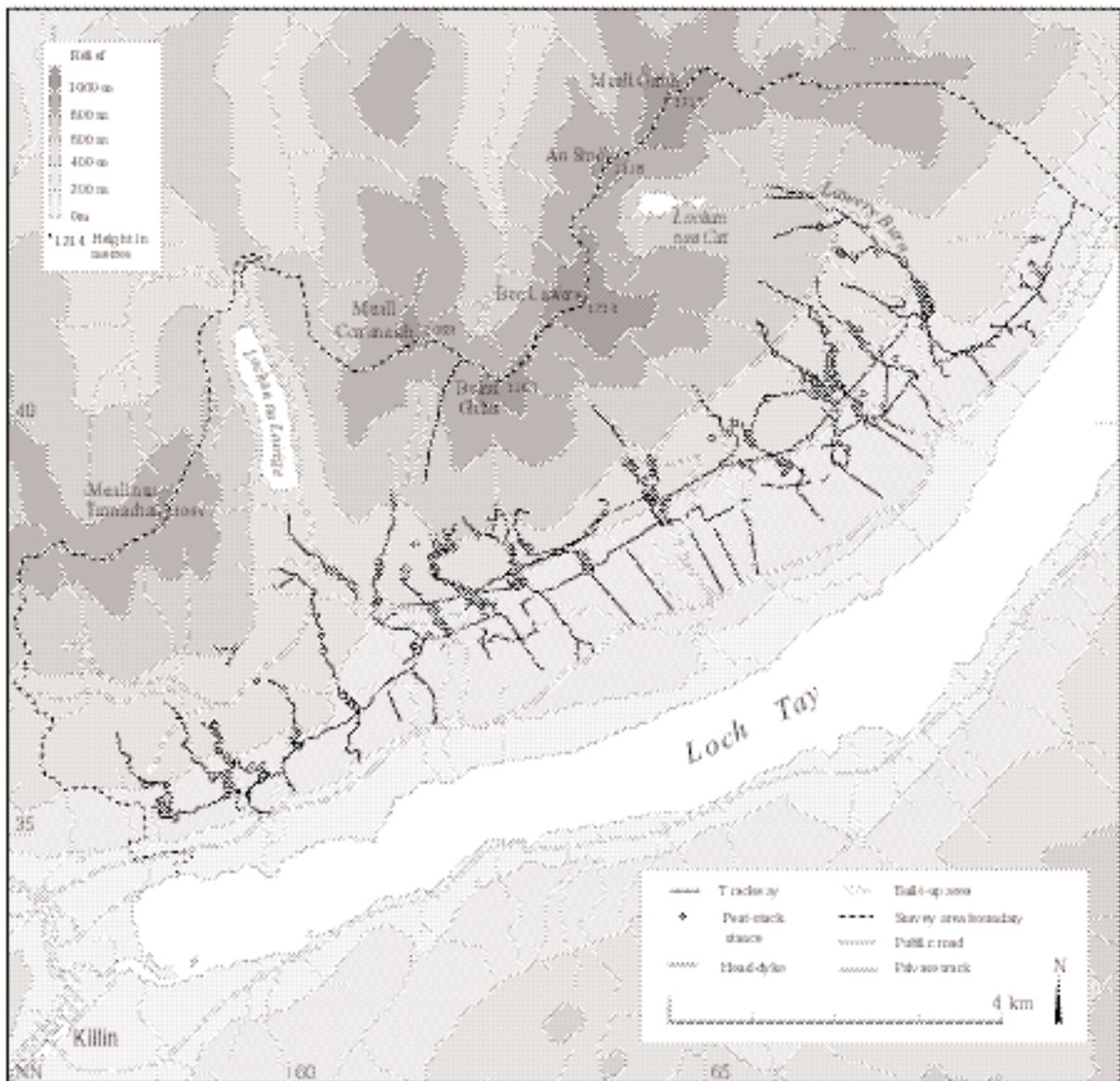
Illus 5. Distribution of peat-stack stances and trackways.

Peat stacks

In his discussion of the North Lochtayside shielings, Miller noted two 'curious' groups of bothies, one on the Lawers Burn, the other on the Burn of Edramucky, that were 'simple in the extreme, being only one or two stones high, presumably as a foundation for turf walls' (Miller 1967, 209). They were described as long, narrow structures, usually built with their long axis running down the slope and the uphill end left open. Subsequent fieldworkers – the Ordnance Survey in 1969 (NMRS NN64SE 3), Bil (1996), MacInnes (1996) and Atkinson (2000) have accepted that these are shieling-huts. It is argued here, however, that these structures have been misunderstood, that they are not shieling-huts at all and are more probably associated with the harvesting and storage of peat.

About 400 of these structures were recorded (Illus 5 & 6). They are concentrated between 300m and 550m OD and all but two lie above the earlier head-dyke. The vast majority of them stand immediately adjacent to a trackway and, on steeper ground where the track zig-zags uphill, they are commonly sited at each bend. They appear as long, narrow enclosures with one end (nearly always the uphill end) left open. The majority are constructed across the contour, but only a very few have been built up at the lower end to provide a level interior, even where they are set on steeply-sloping ground. They range in internal length from 1.3m to 12.7m and in breadth from 1.0m to 3.6m, but nearly three-quarters of them fall between 3.5m and 7m in length, and 1.3m and 1.8m in breadth. Their walls are usually no more than rough lines of schist slabs loosely piled one against another and rarely standing more than one course high – only twenty-three are more than 0.6m in height, and of these only four reach over 1.0m. The higher-walled examples, which are built of drystone rubble and are mainly clustered into four discrete groups, stand out as unusual variants. For the rest, there appears no reason to assume that the walls were ever any higher than they are now, with no evidence of stone robbing, no trace of a collapsed turf superstructure and no sign of any turf-stripping halos around them. Moreover, their rough construction makes it most unlikely that they could have formed the footings of a stable wall.

Their construction, situation on sloping ground and open uphill ends preclude a domestic function for these structures, and they appear equally unsuited to enclosing stock. In effect they provide little more than rough stances. An important clue to their function is provided by four examples that contain low, subrectangular mounds of peat, the largest measuring 8.1m by 3.3m. Until the mid-19th century peat was the principal fuel on Lochtayside, and traces of peat and turf cutting are to be found practically everywhere above the head-dyke. Writing on highland Perthshire, William Marshall (1794, 66) noted that 'at present, every man … manufactures and fetches home his own peats. Each little district has its separate moss, or peat bog; and each individual his separate pit'. Peats were carried down 'intolerably bad roads … sometimes on horseback, sometimes in baskets set on sledges or "slipes", and always in small parcels.' Before being taken off the hill, they would have had to be dried, first on end in twos and threes beside the cuttings, then in small piles and finally in large stacks (Fenton 1978, 221-2). The stances recorded on Ben Lawers, almost invariably adjacent to trackways, would have been ideally placed for the final stacking of the peats before they made the journey home. While this seems the most likely explanation for these structures, it is not entirely clear how they were used. It may be that the peats were stacked on timber palettes, laid across the stones to improve air circulation and assist drying. Alternatively, the stones may have been placed around the edge for no other reason than to discourage stock from climbing on the peats. Each stance was probably used by the same household every year, a practice which would have reduced the likelihood of confusion and dispute over the ownership of valuable fuel.

Peat-drying platforms broadly similar to the Ben Lawers examples are known from the Western Isles (e.g. NMRS NL58SE 25), but they have not been identified before now on the mainland. This may be partly a matter of recognition; isolated examples have recently been recorded in Rannoch (J Atkinson, pers. comm.) and the writer has learned of others next to a peat track in Glen Dochart. However, nothing closely resembling these features has emerged from extensive and intensive fieldwork by the Royal Commission in other parts of the Highlands. Possibly they were a local development, a response to the particular problems posed by the extraction of peat from the flanks of Ben Lawers.

Trackways

The trackways along which the peat stacks are to be found form prominent features on the mountainside (Illus 5 & 6). They emerge through gaps in the head-dyke, often at the head of loanings, and can be followed to well above 600m, where they generally fade out amongst peat hags. It would be a mistake, however, to assume that they were solely for the carriage of peats. One, for example, climbs unfalteringly to the col between Beinn Ghlas and Meal Corranaich, leading eventually to a shieling beyond the watershed, and there was presumably regular traffic between the home settlements and the shieling grounds.
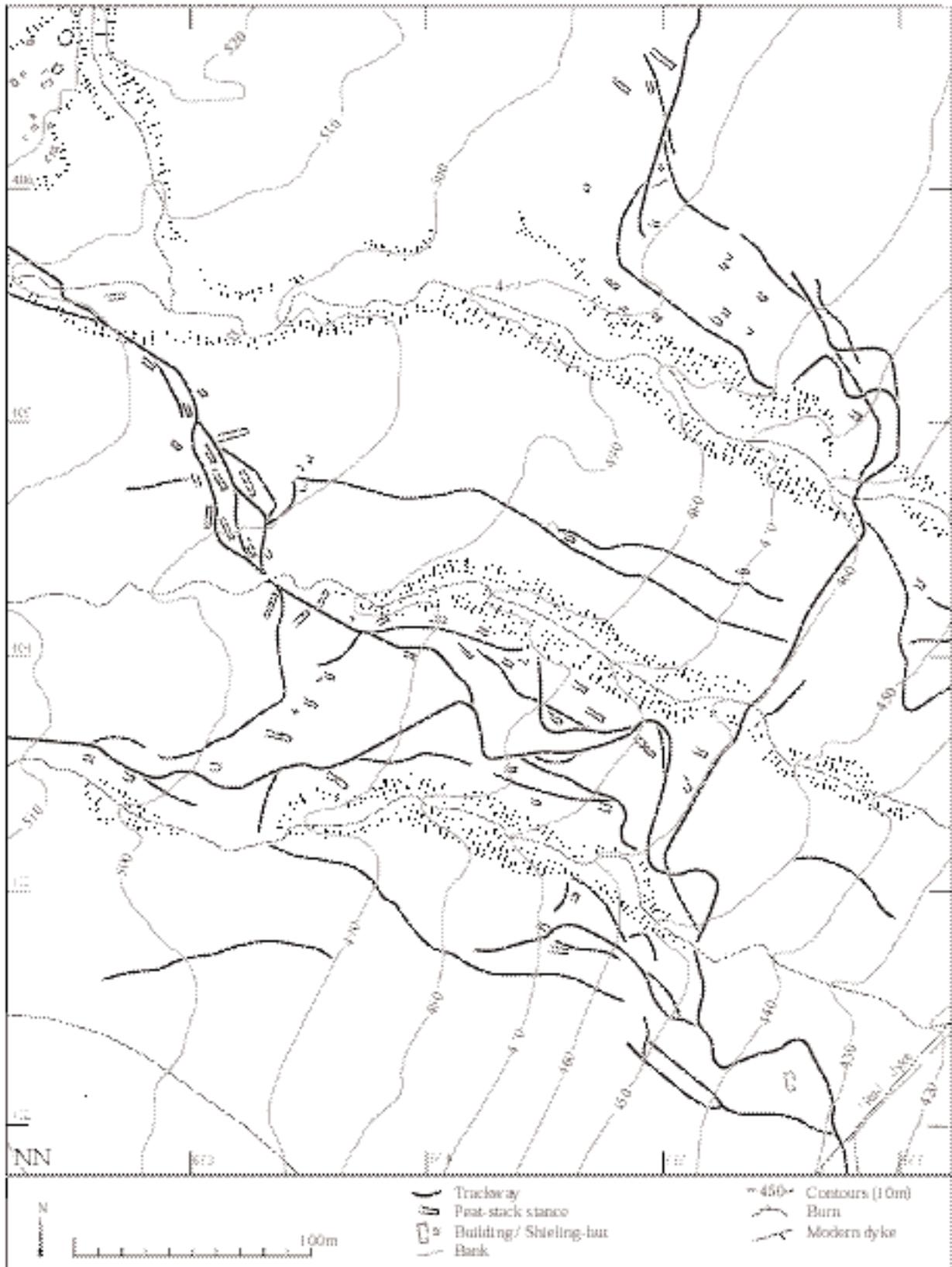
Illus 6. Peat-stack stances and trackways north-east of Meall Odhar.

On flatter ground the tracks appear as shallow depressions about 2m broad, but on steep slopes they become deeply incised gullies, up to 2m deep, no doubt scoured out by water as much as by traffic. Some have been recut several times, braiding into increasingly wide zig-zags in an apparent attempt to reduce the gradient (Illus 6). Marshall (1794, 15) was scathing of the roads and tracks he observed, particularly the peat tracks, which, he described as 'mere gullies, which … previous to the season of use are filled, so as to be rendered passable to Highland horses, with soil taken from the adjacent brae; which is thus ingeniously divested of the scanty portion with which Nature has furnished it.' He also describes how 'the first fall of rain washes away the loose earth, leaving the stones it contains as stumbling-blocks', an observation borne out by the characteristic litter of stones cast to either side of the more deeply-incised trackways on Ben Lawers.

Conclusions

The slopes of Ben Lawers preserve an important example of a Highland landscape containing elements of a pre-improvement agricultural regime overlain, but not entirely destroyed, by imperfectly-executed improvement. Elsewhere, equivalent landscapes have been obliterated by more intensive landuse and, more recently, widespread afforestation. On Ben Lawers, this landscape has not only escaped such a fate, but the combination of surviving archaeological remains and abundant documentary material offer an exciting opportunity that is rarely encountered in the Highlands. The possibilities of this opportunity will be more fully realised by the Ben Lawers Historic Landscape Project, not only in the study of the 18th-century landscape and the upheavals in the wake of improvement, but also in the study of its settlement history back into the Middle Ages.

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THE BEN LAWERS HISTORIC LANDSCAPE PROJECT

ROBIN TURNER

The survey by the Royal Commission team (Boyle, this volume) has revealed a landscape of exceptional archaeological and historical interest, but this is a living landscape, subject to constant pressure for change from both natural and human agents. It is a landscape that cannot be managed just for the conservation of its historic features: it has natural assets of national and international importance; it is renowned for its scenic beauty; and of course it has its own local community of people who live and make a living within it.

Illus. 1 Volunteers on a National Trust for Scotland Thistle Camp taking part in the excavation of an 18th-century longhouse at Balnasuim (Atkinson et al. 1999). The participation of the public is one of the key principles of the Ben Lawers Historic Landscape Project.

The land above the head-dyke, which separates the high pastures from the managed land, and some land between there and the loch is in the care of The National Trust for Scotland, but most of the landscape is in private ownership. However, the Trust aims, through advocacy and education, to influence its neighbours to manage their land for the benefit of the cultural and natural heritage. At the heart of this process is the Ben Lawers Historic Landscape Project – the essential character of which has already been explained (Turner 1995). This has now had three successful initial field seasons, followed by the Commission's base-line survey, and is poised to run for a further four seasons of excavation, survey, documentary analysis and scientific research focusing on the MoLRS landscape, its significance and its future management.

In broad terms, our Ben Lawers project will consist of a number of inter-related strands of documentary, archaeological and scientific studies. We already know from the work of Albert Bil and others the incredible depth of documentary information about the area; this is as yet largely unstudied, and we know we have only just scratched the surface. We will be looking in particular depth at the woodland history of the area, and using local volunteers to help with oral history collection and with delving deeper into the archives to produce information related to areas to be investigated archaeologically. The archaeological elements relate to the excavation of different parts of the MoLRS agricultural system, preceded by survey, and including the prospection for underwater features and deposits in the loch. We also intend to use soil science techniques to tease out information on land use and manuring traditions, and the success of a broad suite of geophysical survey techniques on MoLRS sites will be tested through excavation of the features and comparison with the remote-sensing results. A good deal of this will be put into context through palaeoenvironmental sampling, to give as clear an idea as possible about the environmental history of the hillside. However, the components of the current project proposals are just a selection of what the resource has to offer, and we will be actively looking for complementary projects – undergraduate and postgraduate, or with other government, educational and voluntary organisations. There are tremendous opportunities to add value, even though the scope of the proposed project is already ambitious.

We are still at the beginning of this process, having laid the foundations of our knowledge of the historic landscape. Abundant though the MoLRS and other remains are, they represent no more than the bones of the landscape. We must now continue the process of putting flesh on these bones, with the aspiration of understanding the landscape in considerable depth both in terms of how it has been changed by natural and human agents, and also about the secrets it holds - buried in archaeological deposits, locked within the soil, and locked away in the many volumes of archival documents for the area and in the folklore that has been handed down through the generations. It is by these means that we can learn about the people who populated Lochtayside through the centuries and left us such a rich cultural legacy.

In the first three pilot seasons of the Ben Lawers Historic Landscape Project, John Atkinson and his colleagues from Glasgow University have shown the considerable potential of sites within our study area to reveal potent information. Documentary sources, like the 1769 Lochtayside Survey, have led us to link townships with shielings, fields and grazings. Excavations in the Balnasuim township have produced evidence of everyday life in the post-medieval period (Fig. RT1), while at Cragganester (Morrison and Atkinson 1997) we have new information about the once thriving flax industry. Place-name evidence was used to locate an area of potential at a site with the – annat place-name, where geophysical survey followed by excavation unearthed a long-cist cemetery of Early Christian date (Atkinson et al. 1999): this is exactly what we would have expected at a place with this Early Christian place-name with ecclesiastical connotations.

Excavations further up the hill, on shieling huts at over 650m (2150ft) altitude, have confirmed occupation from at least the 15th-16th century - in the form of glazed redware (Morrison and Atkinson 1997), and there is ample evidence of the continued use of the hut group from medieval times to the 19th and 20th century, when the huts would have been shelters for picnickers. These excavations are amongst just a handful of investigations of shielings and their surroundings, and have shown that this is a promising avenue for further research. The Commission's survey has now expanded our knowledge of the MoLRS sites in the area to an extent that has surprised even our most experienced survey body. Through the Ben Lawers Historic Landscape Project we have the opportunity not just to know of the existence of these sites, but to gain a deep understanding of them, and through that, of the origins and development of the landscape as a whole. This understanding is one of the principal reasons for undertaking the project. In common with most countries in Europe - as demonstrated by the

European Landscape Convention (Council of Europe 2000) - we know a fair amount about the individual features of our landscapes, but we are hard pressed to talk about significance at the wider landscape scale. As the Historic Landuse Assessment Project and the First Edition Survey Project show all too clearly, many of the rural landscapes in Scotland still contain a framework of boundary divisions and relict features which are 19th or 18th-century or earlier in origin. These landscapes, North Lochtayside included, are subject to often major change through natural and human processes, such as climate change, afforestation, wind farms, and, especially now, agricultural decline. What we want to do at Ben Lawers is to establish the various different values that people place on the landscape once they appreciate, through seven seasons of fieldwork and research, the full story locked within it - particularly from the period under discussion here. We already have some clues that our knowledge and understanding will be substantially enhanced, and we hope to be able to argue convincingly that this time-depth is an asset that we all should value.

A principal objective of the Ben Lawers Historic Landscape Project is therefore to enhance our knowledge and understanding of the history and historic environment of the place. In terms of MoLRS, this means putting names to places, and finding out where people lived, how they made a living, and what sort of evidence remains visible, but also evidence which is invisible without excavation or scientific sampling. Throughout the life of the project we will be sharing this information with the local farmers, the lochside communities, and with local schoolchildren, so that their MoLRS landscape will begin to mean more to them in terms of their sense of place and sense of belonging (Fig. RT2). We are confident that we will be successful in demonstrating these values to local people (some of whom are already well versed in them), and by provoking or stimulating this interest we will be well on the way to helping people to care about how we manage change.

Managing change is clearly our aim on the ground. People are often afraid that archaeologists and other historic environment professionals want to fossilise the places where they live, but I'm sure we all realise that this is neither desirable nor usually even achievable. Particularly in the many parts of this landscape in which the NTS has no legal interest, the only way to facilitate good conservation practice is through influence and persuasion. This means reaching workable solutions to the management of change, and the sustainable use of the landscape in ways that are sympathetic to its environmental assets. In our survey area, this may well mean encouraging farmers to retain the old field boundaries, especially those shown on the

1769 survey, and to consider any other landscape-scale projects in light of the aesthetic and historical significance of the landscape as a whole. We therefore hope to work with people in the promotion of a vision of a thriving, living landscape where heritage is acknowledged as a clear asset in social, economic and environmental terms. If we are successful in this, then the results of our project will have demonstration value much more widely in Scotland and beyond. In MoLRS terms, I hope the project will lead to the wide recognition throughout Scotland of the importance of features and large-scale systems of the last five centuries, and ultimately to the protection of those assets.

illus. 2 The ruins of a MoLRS building in the mist.

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LATE MEDIEVAL BLOOMERY SITES: SETTLEMENT AND INDUSTRY IN THE SCOTTISH HIGHLANDS

JOHN ATKINSON

'When every Highlander was a soldier, and wore arms, a blacksmith was necessarily a man of consequence. In the simple state of the mechanic arts among these people, that of the blacksmith who could forge armour, was the most complex; and the demand for his productions universal' (Garnett 1800, 114-115).

Introduction

Thomas Garnett's rather kitsch, if somewhat derogatory, description of the role of the blacksmith in Highland society during the medieval period lies at the core of this paper. It is postulated that blacksmiths, their trade, products and the installations they used can provide a vehicle towards a better understanding of the history of rural settlement within later medieval Gaeldom. This postulation is based on three factors:

1) For the late medieval period evidence of the physical location of rural settlements is at best sketchy and in most cases entirely missing from the known archaeological record.

2) Our knowledge of documentary evidence for rural settlement in this period also 'tends to be vague or elusive' (MacNeill & MacQueen 1996, 286).

3) The bloomery mound or slag heap represents perhaps the only class of monument for the period, which reflects working life in the Scottish Highlands.

The purpose of this paper is therefore to utilise the archaeological evidence of a particular industry and see if a better understanding can foster a clearer indication of the location of late medieval settlements in the Scottish Highlands. In order to achieve this goal it is essential that the nature of the industry and its place in society be explored so that the historical context of today's archaeological record can be interpreted further.

Bloomery Sites in Scotland

Faced by the considerable body of work produced on English, Scandinavian and other European bloomery traditions, comparatively little research has been undertaken on Scottish bloomery sites. The work that has occurred has tended to remain in the background of archaeological interest, with no serious attempts to understand this class of site being brought forward until the mid-1990s. The work that had been pursued prior to this had come from non-mainstream academic groups, such as antiquarians (e.g. MacAdam 1887), local historians (e.g. Dixon 1886) and amateur archaeologists (e.g. Aitken 1973). In 1995 all this changed when Historic Scotland agreed to fund the Scottish Bloomeries Project to investigate bloomery iron making. The results of this three-year project have enabled for the first time a clearer understanding of this class of monument in Scotland to be developed. Although not fully published yet, many of the lessons learned have already been disseminated widely, providing a basis for future study of this neglected aspect of Scottish Archaeology (Atkinson & Photos-Jones 1999; Photos-Jones & Atkinson 1998; Photos-Jones et al 1998; Hall & Photos-Jones 1999; Photos-Jones 2001). Although the published articles have sought to address particular questions, none have attempted to give an overall synthesis of our current level of understanding of the bloomery tradition in Scotland. In consequence it is important to draw out that summary of findings here, prior to attempting to answer the key question posed by this paper: does the location of bloomery sites reflect the location of medieval rural settlement in the Scottish Highlands?

Distribution pattern

A search of the National Monuments Record for Scotland provides a list of 294 known sites under the three main search criteria of bloomery, slag and iron-working sites. If all criteria are taken into consideration and plotted on a map of Scotland the resultant distribution pattern is weighted heavily towards the Highland massif (Illus 1). Of the three main search groups "bloomery" registers the highest with 174 site records. At this scale of study there are also clear concentrations of sites, with large numbers present in the Cowal Peninsula and around Loch Rannoch. The densities involved at these locations acted as the catalyst for the first season of fieldwork associated with the Scottish Bloomeries Project in 1995. The distribution of sites in each of these areas appeared at first to suggest that these locations may be important in understanding the spatial concentration of iron production sites in Scotland. However, closer inspection of the archaeological record, particularly the detail of who discovered and reported the presence of these sites, has cast doubt on this distribution pattern.
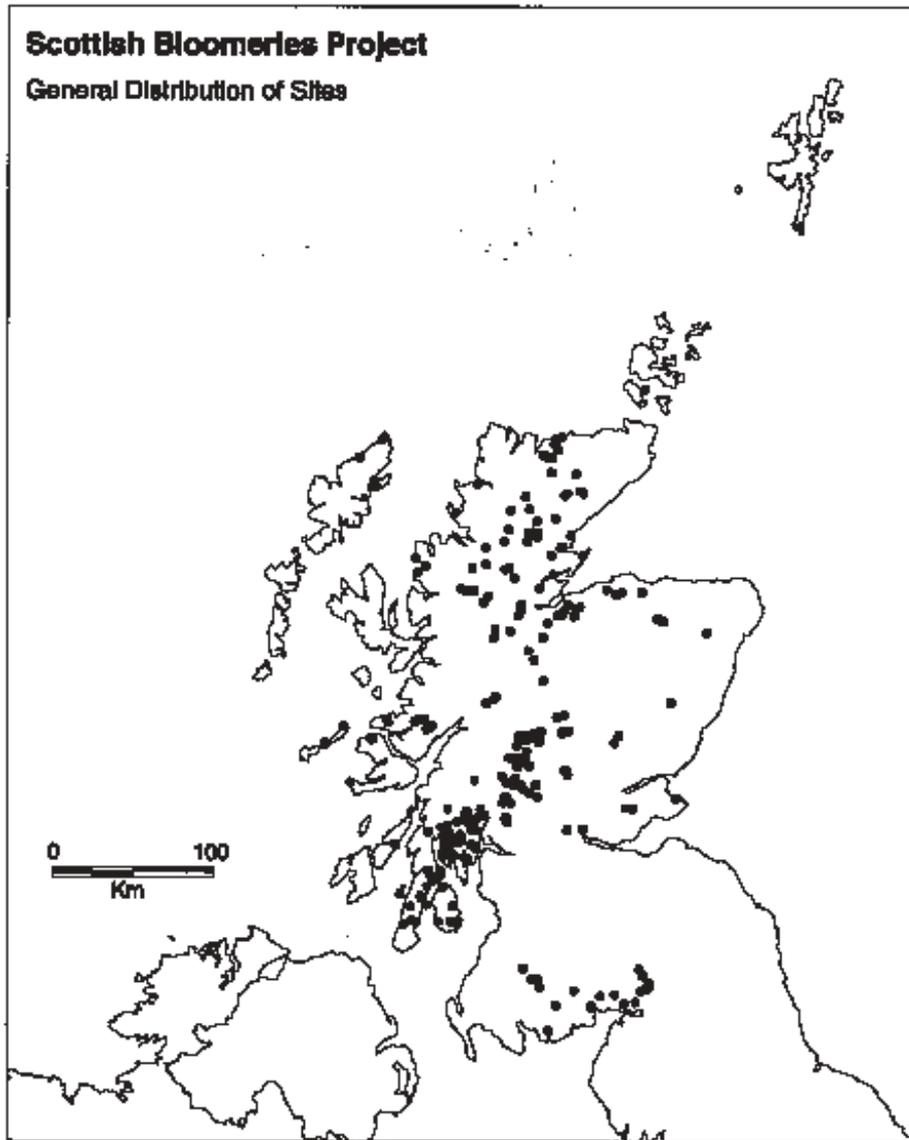
*Illus 1 Overall distribution plan of iron working sites in Scotland*

It is quite clear that the large concentrations of sites are the results of interest on the local scale, and in particular interest by individuals or local groups such as the Cowal Archaeological Society. In other words, the macro scale distribution of bloomery and iron working sites is an artefact. It merely records where people have bothered to look for sites, rather than providing an accurate national picture of their location.

In order to reach beyond this macro distribution scale, it is necessary to begin to classify what actually constitutes a bloomery site, as opposed to some other form of iron working installation. Bloomery sites by their very nature are characterised by particular traits, the most notable of which is the presence of slag mounds or heaps. It is therefore possible to achieve a better understanding of their distribution by screening out sites, which do not contain this primary characteristic. There are 116 sites, which we can confidently describe as having slag mounds or heaps

associated with them. Plotting these sites provides the following distribution pattern (Illus 2). Although this pattern gives a clearer idea of the location of sites, we are still left with essentially false concentrations in some areas and no sites in others, which may well contain, as yet, undiscovered bloomery activity.

Character and Date

In terms of character, bloomery mounds in Scotland tend to fall into two main groups defined by shape. The first and by far the most numerous group are the conical mounds, the classic slag heaps, which range from 2m in diameter up to 12m in some exceptional cases. This type of mound generally appears as a single slag heap, but on occasion is reported as multiple conical slag heaps grouped together in one locality. For example, on the Snaid Burn in Buchanan Parish (NMRS NN31SW 4) between eight and ten mounds
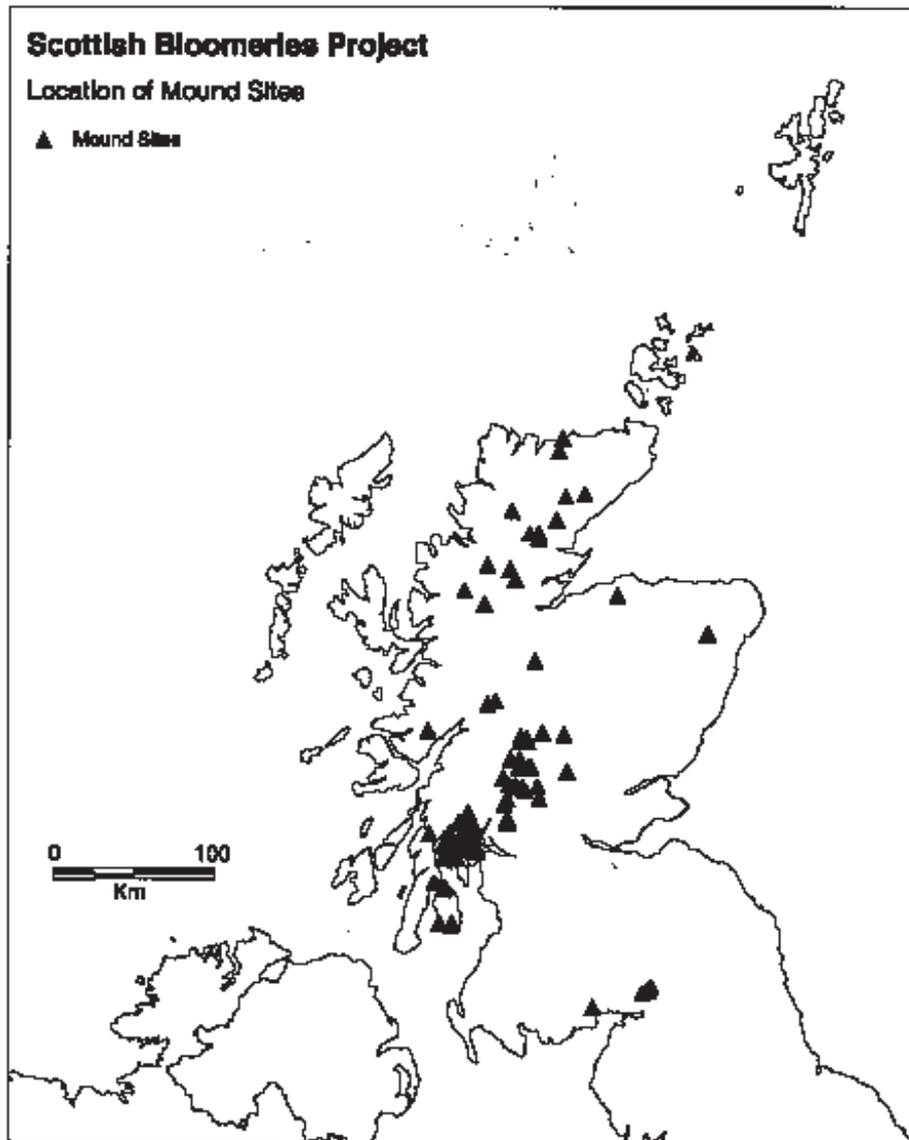
Illus 2 Distribution of surviving bloomery mounds in Scotland

have been reported together (RCAHMS 1963, 444). The second, and rarer variety, are known by a variety of names (e.g. horseshoe, crescentic, amorphous or long low mounds). This class of site generally covers a larger area than the conical variety and ranges in size from 7m to 30m. These sites are often reported as exhibiting other features, which link them together, specifically upright slabs jutting out of the turf within the crescent and the remains of stone banks masking the open end of the slag horseshoe. The classic example of this correlation of features was at Allt na Ceardaich on Loch Eck (NMRS NS19SW 1) (Illus 3), which was excavated between 1995 and 1996. (Atkinson & Photos - Jones 1999; Photos - Jones et al. 1998)

Although broad-brush characteristics are known about bloomeries in Scotland, details of furnace design and accurate dates for sites are lacking in many cases. The existence of associated furnaces is only recorded for nineteen of the 294 known iron working sites in

Scotland. The paucity of evidence for furnaces is matched by a lack of accurate dates for bloomery sites in Scotland. Of the 294 known iron working sites in Scotland, dates are provided for only forty-four examples either by authorities writing about them or by their excavators. This figure however, includes the small number of prehistoric sites that have been classed alongside the much larger group of medieval bloomeries. In reality only thirty-seven dated bloomery sites are known.

If the small number of sites was a problem in terms of defining the age of the tradition, then the basis for dating some of the sites is even more problematic. For example Aitken (1973) dates fifteen sites he excavated in Perthshire to the late 15th century. It is unclear where this all-encompassing date comes from. The RCAHMS also provide general dates for the six sites located within Buchanan Parish in Stirlingshire of 17th century to 18th centuries on the grounds of local tradition. (RCAHMS 1963, 56-57) This type of dating
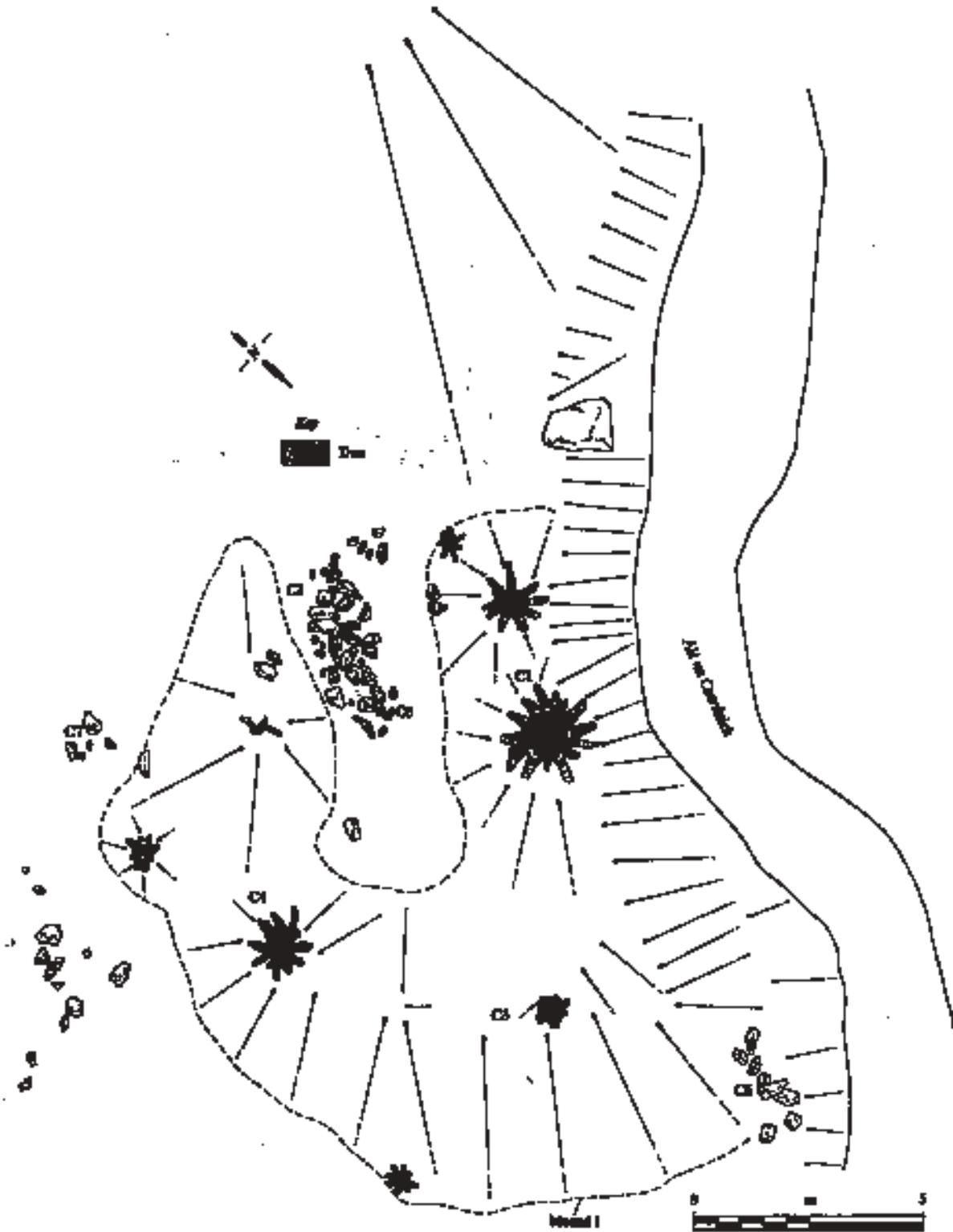
Illus 3. Site plan of cresentic bloomery mound at Allt na Ceardaich, Loch Eck

evidence aside, we are left with pottery dates, which provide a range of 13th to 17th centuries for bloomery sites in Scotland and a small number of radiocarbon dates.

The use of radiocarbon dating on carbonised material from bloomery sites has been pursued only sparingly in the recent past. The dates achieved for material recovered from sites excavated during the Scottish Bloomeries Project, together with a small group of dated samples from Inverness-shire provided a date range in the 13th to 15th centuries. It should be noted though, that the number of dates so far achieved is low and in the case of the Inverness-shire dates cannot be confidently ascribed as the material dated came from molehills and was therefore not securely stratified.

The only secure sequence of dates to be achieved comes from the excavations of Allt na Ceardaich, Loch Eck (Illus 4) and Tamheich Burn, Argyll in 1995 and 1996. In both cases single entity, single species dating of charcoal from short-lived tree species was pursued from securely stratified contexts. Three of the dates came from Allt na Ceardaich and all are within the range of 13th to 15th centuries. The earliest dates for this site came from a basal layer of charcoal at the bottom of the southern side of the slag heap. This suggests that smelting activity at this site may have started from as early as AD 1270. The latest date achieved came from material directly below the stone external structure to the furnace, which suggests that smelting may have been undertaken as late as AD 1500. These dates combined together seem to imply that the furnace may have been in use for up to 230 years. This type of evidence may be important in the interpretation of sites like Allt na Ceardaich and how they fit into the social context of bloomery iron making in the Highlands.

illus 4: Excavations at Allt na Ceardaich, Loch Eck

The Social Context of Iron Production

The social context of iron production in the Highlands in the late medieval period could be critical to a clearer understanding of the bloomery tradition. This, of course, is not a peculiarly Highland tradition, and evidence of surviving sites is known from Dumfries and Galloway and at least one bloomery site has previously been discovered in East Ayrshire (Strat Halliday pers. comm.). However, what makes the relationship between social life in the Scottish Highlands in the 13th to 15th centuries and the existence of large numbers of iron working sites of special note is fundamentally simple: warfare and weaponry. Although clan society of the period was essentially an oral culture, a strong body of evidence exists in terms of architectural sculpture depicting the importance of chain mail, swords and daggers, particularly on grave markers (Steer and Bannerman 1977). This form of expression of Highland culture

predominated in the Western Highlands with the growth of a series of schools, such as the Iona school (RCAHMS 1982, 234). In many ways this form of monumental expression depicts not only the choice of battle dress of the clan chiefs of the period, but also indicates the importance of iron-based armour and weapons to a cultural entity that 'was the collective product of Feudalism, kinship and local association' (MacInnes 1996, 1). Within this social structure the role of the provider and maintainer of that weaponry was central. His importance to the clan group was clearly recognised and he was treated differently from the ordinary clansmen.

Clanship and the Highland Smith

Within a culture that was focused through land, cattle and warfare the smith held an important position as toolmaker and armourer. 'The armourer and smith were adherents of the chief and the office was generally hereditary' (Grant 1961, 240). They were not the only individuals to hold such an important place within the clan. The bard and even other tradesmen (farriers, millers etc) also held important positions within the system. Clan society operated a managerial system in which clansmen provided gifts in kind to the fine (clan elite) for the clan elites provision of specialist services, such as that provided by the smith, whose charges were strictly controlled (MacInnes 1996, 20-21). Smiths in turn were held in esteem and treated differently from normal clansmen. Although they operated within the structure of clanship they were often provided with small holdings (crofts), which were not attached to individual townships.

The Armourer and Smith in Clan Society

The role of the smith as provider of specialist services was not as simple a relationship as one might expect. Not all clans seem to have had their own dedicated smiths. For some clans this was achieved by effectively buying in a family of hereditary smiths to provide such a service. The classic case in point relates to the Macnabs of Dalmally, who Sir Colin Campbell of Lochawe brought to the township of Barr nan Caistealain (fort of the ridge), Dalmally (Illus 5), in 1440 "to manufacture arms and armour, as well as to perform other necessary parts of the smiths work" (Garnett 1800, 114). Thomas Garnett reports that the descendants of this smith were still living at Barr nan Caistealain in 1800 and still practising the same profession. The township site that Garnett visited survives today in a clearing in the forest and has a large badly denuded homestead located within the centre of the group. In light of evidence of later re-use of homestead sites in the central Highlands for smelting and smithing activity (see Taylor 1990; Atkinson et al.

2001, 76), it is tempting to view this as the early focus of the Macnabs' smithy. This is further supported by the recovery of slag during the construction of the forestry track in the area surrounding the site.

Illus 5: The homestead and township of Barr nan Caistealain, Dalmally

Other clan groups were also associated with smithing in the late medieval period. The MacEacherns are noted by a number of authorities as sword-makers to the Lords of the Isles. Grant affirms that the MacEacherns operated as smiths and armourers to a number of clans (1961, 240). This may be borne out to a degree by the fact that they seem to have held land widely across the western seaboard. This seems to have included land in Moidart and Ardnamurchan, Morven (Grant & Cheape 1987, 93), Mull (MacPhail 1916), Kilkerran in Kintyre (Grant 1935, 372) and at Coull by Kilchoman on Islay (Grant 1935, 418; 425). Other clans also appear to have followed in this tradition, for example the MacRuarys were hereditary smiths and armourers to the MacDonalds of Sleat and a 'branch of the family also worked in North Uist as smiths' (Grant & Cheape 1987, 197). The MacRurys are also said to have been sword-makers and to have held lands at Balgown on Skye (Whyte 1996).

Other clans seem to record the fact that smiths were important members of their retinue by having septs directly associated with the trade nomenclature. The surnames Gow (gobha) and Smith appear as septs (branches of a clan group) in the Clan Chattan confederation (Shaw 1880, 104) from as early as 1499 'when Mulmore Smith is entered in the Exchequer Rolls as a joint tenant of Polochaig in Strathdearn….Both names, Gow and Smith, occur most frequently in Strathdearn and Strathnairn' (MacKintosh 1903, 510). There is even some suggestion that a Clan MacGowan may have held land on the River Nith in Dumfries-shire in the reign of David II (Martine 1987, 100), which may help in understanding bloomery sites in that area.

Bloomery Sites as Medieval Settlement Indicators?

Although a number of late medieval settlement sites have been discovered, excavated and published in recent years (e.g. Dixon 1998; MacGregor 1998), these have tended to be lowland discoveries. The location of late medieval settlements in the Highlands, has been, and still, is a matter of some concern. Although some projects in recent years have been able to address aspects of the issue, for example the work at Pitcarmick, little is still known of the location, never mind the form, of core medieval townships of the period 12th to 16th centuries throughout much of the Highlands. The Ben Lawers Historic Landscape Project has in recent years provided a better understanding of late 16th century transhumance sites (Atkinson 2000), however the location of core settlement sites of late medieval date has as yet not been resolved (see Boyle, this volume). This issue, if it is ever to be adequately addressed, will not only require considerable resources, but may also need some lateral thinking to achieve any meaningful answers. Although the Ben Lawers Project may be able to apply that level of resource in the near future and will aim to address this very question, other options in other areas may also help resolve the issue (see Lelong, this volume).

The central question of this paper - does the location of bloomery sites reflect the location of the medieval settlement pattern? - is really two questions:

1) What processes lie behind the siting of a bloomery site?

2) Is there a correlation between bloomeries and settlements?

The answer to the first question has traditionally been associated with the material requirements of smelting iron. In other words, the smith would site his iron furnace in an area where he could readily access considerable quantities of both ore and charcoal. For the Scottish Highlands, the issue of ore was never a major problem, the use of bog ore, which was known as "meinn" in Gaelic was, and still is, a plentiful and readily accessible commodity. The same would apply to charcoal, even though the quantities required were substantially greater than the required volume of ore. It is likely that in order to prevent double handling of charcoal, furnaces were located close to the timber resource and charcoal burning platforms or pits.

The results of the Scottish Bloomeries Project have identified some correlation with other features, which may also come into play when siting a furnace. Firstly, the need for a reasonably sheltered locality, to allow control of the elemental forces, particularly the wind. A clear association between sites and bodies of water is evident. Water is not required in the bloomery

smelting process, but would be useful if smithing was to be undertaken at the same location. Finally, across a wide range of sites in the Highlands, bloomeries were noted in close proximity to later settlements. It is this last association that is perhaps the most puzzling and requires to be addressed. To answer the second question and thus the overall question, it is necessary to look at the local scale and try to relate this to a particular clan group.

The Macnabs, Glenlochay and Glendochart

The Macnabs are often referred to as a hereditary clan of smiths. This, however, is probably specifically related to the Macnabs of Dalmally, who Colin Campbell of Loch Awe is said to have employed in 1440 to provide armour and other smithing services. Whether this association between Macnab smiths and Clan Campbell indicates Clan Macnab were recognised for providing the service of smiths is unclear. Clan Macnab certainly seem to have had a long pedigree and held lands in Strathfillan, Glen Dochart and on the shores of Loch Tay prior to the Wars of Independence (Martine 1987, 162). Eilean Ran, the Macnabs Castle, was reputedly built on an island in the River Lochay. The exact location of this site is unknown, as Cromwellian forces destroyed it in 1653. The fact that it was located on the River Lochay may imply that their earlier possessions may also have included parts of Glenlochay.

The fortunes of Clan Macnab can be followed in charters and tradition throughout the late medieval period. In 1306 the Macnabs had chosen to side with the Comyns against Bruce and this led to a lengthy period of turmoil for the clan and forfeiture of their estates. Tradition asserts that between 1314 and 1336 the Macnabs were forced to take refuge on Inchbui, the island on the River Dochart, near Killin, which is known as the Macnabs burial ground (Macnab 1907,

5). Interestingly the central portion of Inchbui shows clear evidence of defensive banks around the top of the island and a very substantial ditch on the lochward side, which may support this tradition.

By 1365 the Macnabs appear to have come back into favour with the Crown and Gilbert Macnab is granted the charter of the Barony of Bovain in Glen Dochart by David II (Thomson 1912, 617). The clans next reclaim of land came in 1486 when Finlay Macnab received a charter of the lands of Ardkelze-Estir (Easter Ardchyle) and Doinch (Durnish) (Paul 1882). This was followed in 1502 when Finlay received "a grant of a croft in Killin" (Macnab 1907, 8) from the Carthusian Monastery in Perth and again in 1503 by the granting of further lands in Glen Dochart, including the lands of Yhewire (Ewer) and Lerakene (Luiragan) (Paul 1882). The recovery of the Glen Dochart lands and land in Strathfillan was the high tide of their possessions (Illus 6). By 1553 all of their lands were conceded in favour of Colin Campbell of Glenorchy.

In the case of Glen Dochart, analysis of the known bloomery sites does not seem to support a close connection between Clan Macnab lands and smithing. There are four sites known from the glen, three of which lie in the proximity to later buildings, which may suggest they had earlier medieval antecedents. However, only Lochdochart House seems to have the potential of correlating with the charters. Interestingly, one of the sites is located at Easter Lix, which Fairhurst was able to trace back in documentary terms to the medieval period (Fairhurst 1971). One site (Hawk Craig), which is not directly associated with later settlement, is also of some note because of the large number of mounds present. Prior to afforestation this site was reported as having up to twenty slag heaps (NMRS:NN32SE 1). As such, Hawk Craig may indeed have been a site of concentrated smithing activity over a considerable period of time.
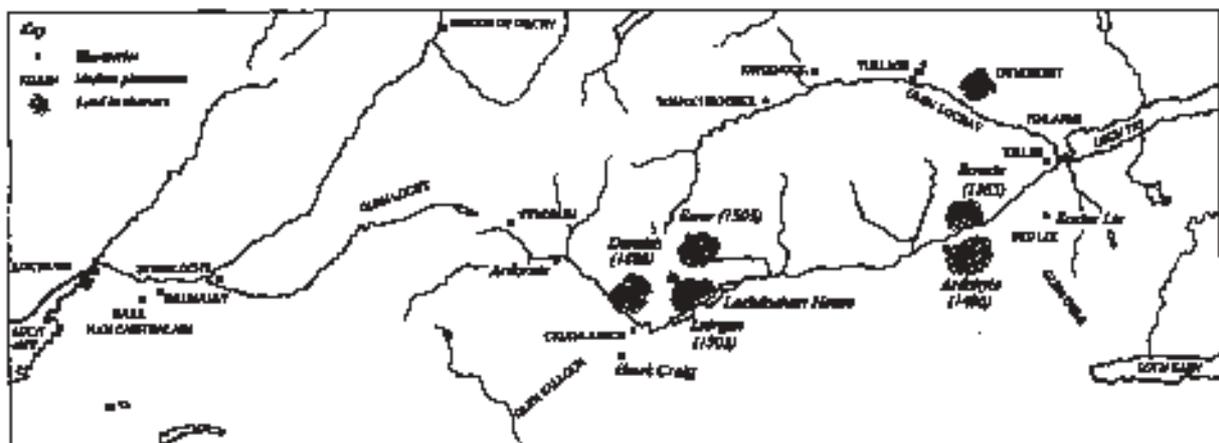
Illus 6. Macnab possessions and bloomery sites in Strathfillan, Glendochart and Glenlochay

When Glenlochay is taken into consideration, it too has four known bloomery mounds present. In each case the bloomeries are sited in the proximity of later settlement sites, which in the case of three of them means directly adjacent to current steading sites. At Duncroisk the bloomery takes the form of a low bank of slag which has been cut by a later mill lead, while at Tullich two mounds are located, one to the north and one to the south of the current steading. Glenlochay, however, has no clear relationship with charters of land to the Macnabs, although the eight merklands of Duncroisk are noted in a charter of 1510 in the possession of Jacobo Redeheuch of Tulichedill in Strathearn (Paul 1882, 752).

Once again no clear correlation between the clan and smithing is evident. However, the correlation between bloomeries and later settlement is apparent once more, with at least one of the sites appearing in an early 16th century charter.

Some Early Conclusions

I have attempted in this paper to take a rather tangential view of the location of bloomery sites in the Highlands to see if they can be used as a guide to the location of the missing medieval settlement pattern. Any conclusions drawn here should be seen as preliminary in nature as they only represent results from two glens. Having said that, in seven out of eight cases a spatial correlation does exist between bloomery mound sites and later settlement in Glen Dochart and Glenlochay. This allows some early conclusions to be drawn:

1) Although the existence of bloomery sites does not prove that these locations were used as townships during the late medieval period, it does suggest that the siting of later sites next to earlier bloomeries may indicate the presence of earlier settlement.

2) If bloomeries are associated with sites of earlier settlement then their distribution may be far more complicated than has previously been considered.

3) For certain sites, notably sites like Barr nan Caistealain, the correlation of folk tradition, documentary evidence and archaeological site may provide the optimum conditions for excavating an example of a medieval rural settlement in the Highlands.

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EARTH BUILDINGS IN THE CENTRAL HIGHLANDS: RESEARCH AND RECONSTRUCTION

ROSS NOBLE

'the (hovel) seemed to be all on fire within: for the smoke came pouring out through the ribs and roof all over; but chiefly out of the door, which was not four feet high, so that the whole made the appearance of a fuming dunghill removed and fresh piled up again, and pretty near the same in colour shape and size'

Captain Burt c.1730

Township of Lynwilg, near Aviemore, showing earth buildings. Artist unknown. c.1771.

The following is an account of an on-going research project at the Highland Folk Museum, whereby a farm township or *Baile* of circa 1700 is being reconstructed. We have called this Baile Gean or Township of Goodwill. This project began in 1996, and is funded by the Highland Council, Moray Badenoch and Strathspey Enterprise, and, for the first four years, the European Regional Development Fund. It sprang out of an early experiment in building turf houses carried out by the Highland Folk Museum in the 1980s. (Noble, 1984) This time, however, in an attempt to establish a mechanism whereby traditional skills can be preserved and passed on through formal training programmes, a charitable trust has been set up to carry out the work. This body is the Highland Vernacular Buildings Trust, normally known as HVBT.

The methodology used in the project is as follows. The township of Mid Raitts, near Kingussie, (Inverness NH775024) is being systematically excavated and the reconstruction work on the museum site is based on the layout, floor plans, hearth positions, etc. of the original buildings. To this evidence is added the ethnological research gathered by the museum over a long number of years, including fieldwork, documentary evidence, and, of course, the physical evidence of building parts held in the museum collections. The project team includes a structural engineer, who interprets the foregoing sources of evidence in terms of their ability to produce viable structures. The ensuing buildings are a synthesis of that debate, with the major proviso that nothing is built which directly refutes the archaeological evidence

The workforce is drawn from the local population, and embraces a range of skills, few of which were relevant to the project. The first six months of the project were spent in mastering the basic skills of handling and using the building tools of the eighteenth century - adze, side-axe, cross-cut saw, pit saw, draw-knife and hand augers - and the learning process is continuing as I write. The timber for the project was, at the outset, standing trees, and all the turf has been cut on site. The thatching materials have mainly been grown on site, or gathered locally.

Illus 1. Baile Gean 1999

Illus 2. Creel House construction

The project is now in its sixth year, and ten buildings have been erected at Baile Gean, together with the associated head-dyke, animal pens, stackyards and pathways. Each building represents a different element in the building tradition of the area - feall houses, caber houses, single and multiple-bladed crucks, walls with alternating stone and turf construction, roofs thatched with oat straw, heather, bracken and broom. The publication of all the research findings is still some way off, but it is useful, in a project of this magnitude, that periodic reports are made available for wider criticism. (See Noble 2000). I am grateful, therefore, for this opportunity to give this broad overview of the work to date.

Gathering the evidence

A major problem facing a project like this is that the evidence is decidedly fragmentary, and what does exist is often open to more than one interpretation. Descriptions by eighteenth century travellers are often either derogatory, or else laden with romantic overtones stemming from a desire to find "noble savages". Edmund Burt, probably an engineer surveyor with General Wade, shows some real interest in the construction details:

'The skeleton ...was formed of small crooked timber, but the Beam for the roof was large out of all proportion. This is to render the weight of the whole more fit to resist the violent Flurries of Wind.... for the whole fabric was set on the surface of the Ground like a table, stool or other moveable.... The walls were about four feet high, lined with sticks wattled like a hurdle, built on the outside with Turf; and thinner slices of the same serve for Tiling. This last they call Divot.'

James Robertson DD reports on a visit he made to the Central Highlands, probably in 1804, and gives a very similar description:

'When such a house is to be built, the first thing done is to construct a coarse frame of wood, corresponding to the dimensions of the house, in length and breadth; then upon this frame to fix standards inclining inwards at proper distances, which rise to the height of the intended wall, and are kept in a firm position by being mortised in a tree above, of the same dimensions with the tree below. These standards are closely wove with wickerwork to keep the sods from falling in; which being built on the outside, finish the walls of a creel-house as it is called.'

Both of these accounts describe Creel Houses, where a basketwork lining keeps the turf from falling inwards. A contract from Grantown-on-Spey in 1770 records the construction of a 'Feal' House - i.e. solid walls of thick turf with no creel work. (SRO GD248/251/8) This contract also notes that it came with a warranty:

'I Lewis Grant in Belnafettack of Dellechaple hereby promise and oblige myself to uphold the House which I built for your father for the space of eighteen months from this term of Martinmas 1770 sufficiently in all respects on my own proper charges and that under the penalty of One Pound Sterling'

The cost of building the house was One Pound Fifteen Shillings and Nine Pence Sterling.

Written evidence of this sort offers little practical advice about the detailed construction methods used in earth buildings like these. Fieldwork does not always take us much further forward, since again the remains are often very fragmentary. Even the interpretation of major pieces of material evidence, such as the two

crucks and associated purlins from Morile Mor, (RCAHMS INR/5/1) now held in the collection at the Highland Folk Museum, is open to debate. These crucks were used as the model for the museum's first reconstruction project in the early 1980s. The museum's interpretation of the evidence, relating in particular to the roof structure, was criticised in the Technical Advice Note (TAN 6) on Earth Construction published some 10 years later (Walker and McGregor 1996-97). As this was just when the Baile Gean project was beginning, the interpretation set out by the authors of this very important work was incorporated into the construction of the first building at Baile Gean, again modelled on the Morile Mor remains. Within two years this roof was suffering major stresses, and collapsing in places. (The original experimental roof stood for 5 years, before it was dismantled). A third roof design is now being tested.

The archaeological evidence, again, gave the team little help at the outset about the nature of the structure above the ground. It did provide ground plans, door and hearth positions, flooring details, and some clues about the use of the internal space. What did become increasingly important in later years of the excavation was the cross fertilisation of interpretation between the reconstruction and the archaeology. Thus as specific characteristics of specific building methods emerged at Baile Gean, it became possible to recognise these characteristics in the excavations at Raitts and elsewhere.

Experiments, for example, in building walls in alternating courses of stone and turf showed that a different, poorer, quality of stone could be successfully used, since the plasticity of the turf interlayers absorbed the irregularities in the stonework. It is now likely that this technique helps to explain the discrepancies in the quality of stone remains on township sites, and even within individual buildings on the site. Or again the experiment in making simple clay daubs from material quarried from the glacial deposits of an esker within the museum site helped to identify the clay-working activities on glacial deposit at Raitts.

One of the most exciting experiments so far, which related to the fourth building in the project, has led to re-evaluation of the documentary evidence as well as the archaeology. In each of the buildings raised previous to this, the main structural element of the end walls had been a single hip cruck, curving from the roof-tree where it met the outermost couple to rest on a pad at the centre point of the end wall. The then director of the project reasoned that in as large a building as this, with seven couples, he would prefer additional bracing against lateral movement. Secondly, he highlighted a difficulty previously encountered. The inner face of the stone footings of these houses are

squared at the corners, but the outer face of the end walls appears often to be curved. The latter makes complete sense in terms of wind and rain deflection. The difficulty arose from trying to build round-ended turf walls with only one vertical stress relief in the centre.

The solution put forward by the project director was to have two timbers running from the roof-tree to two points which trisected the end wall. There was nothing obvious in the archaeology of Raitts which negated this - no obvious hip cruck pads have been found. However, the evidence from the few standing buildings in Scotland which still have end crucks points to one single blade in a central position. But in these examples the crucks are inserted in stone walls, which are relatively square faced on the outside, and which are at least partially load-bearing. It was agreed, therefore, that the documentary evidence would be re-examined to see if a justification could be found.

One of the names given to hip crucks in Scottish building terminology is 'tail fork'.

'Ane hall or fyre hous haifing fyve treen cuppillis yairintill and twa taillforkis.....
....twa chalmeris.....haveing four trein cuppillis and twa taill forkis
... twa aitt barneis and ane beir barne ilk ane yrof haveing fyve trein cuppillis and twa taill forkis.'

Until now, I have always assumed that these tail pieces, or end crucks 'forked' off at right angles from the roof tree, but the term 'tail fork' could literally mean a forked branch extending from a single point at the roof to two points along the wall footings. It was decided, therefore to experiment with this form of end bracing.

Illus 3. Creel House, showing 'tail fork'

Following the advice of the project director, the ends of these branches projected over the footings, and rested on a stone in the ground. A second stone was fixed against the end of the branch to prevent movement. When the turf was erected, the part of the branch beyond the stone footings was almost totally absorbed

within the wall. This left only the evidence of two large stones protruding from the ground just beyond the wall to show the novelty of the construction method. Subsequent fieldwork suggests that such boulders are often a feature of township sites, including Raitts. These could easily be interpreted as 'tumble' or otherwise disturbed stones, but as a result of this experiment should perhaps be examined more closely in future. A number of visiting archaeologists have stated that they recognised the feature, but had attached no significance to it until now.

Learning by our mistakes

The Baile Gean project was a steep learning curve for the whole team. The academics had scanty evidence to work with, and the construction team had to not only learn new skills and master new tools, but also had to "unlearn" many of the assumptions that they brought from previous employment. The first half ton boulder encountered in levelling a house site required, said the squad, a JCB to remove it. "No such thing in the eighteenth century", they were told, "but we have timbers for levers, and you know how to make rope". And so the boulder was moved a few yards, to a place where it could be incorporated into the structure of the building.

Similarly, we all had to face up to the fact that we had to raise these massive cruck frames we were making without the benefit of machines. A good few joints were stressed to the point where the wooden pegs or "trenails" snapped, and a cruck frame was damaged beyond repair before the system of using a "lifting stick" was mastered. In this lifting technique the upper collar of the preassembled cruck frame, or couple as it is more commonly termed in the Scottish sources, is connected by rope to the top of the lifting stick. This fairly light pole is then raised manually to an angle of about 30º from the horizontal. A team of five or six men (or a horse) then pull the stick upright, lifting the couple with it. When the stick passes the vertical point, the couple is then at an angle whereby the full effect of the horizontal force of the hauling team can be applied to it. A back-stop post, again linked to the upper collar by rope, prevents the couple from travelling beyond the vertical.

In the first six months of the project we learned a lot about turf. We learned how not to cut it, how not to lift it, and how intractable a material it is when wet. We also learned that it took three men cutting and one man and a horse hauling to keep two men supplied with building material. And having discovered that it required just over an acre of turf to build our first house, we also learned that, if we were to build the township in a reasonable space of time with the team we had, we would have to resort to the use of a mechanical turf-cutter and a tractor and trailer for haulage.

In any sort of experiment-based research, academics tend to view negative results in a positive way - something that can be counted out in future experiments. It was much harder for the building team at Baile Gean to view failures - collapsed walls, broken timbers, leaking roofs - in quite the same way. And yet in real terms it has been these events which have contributed most to our understanding of turf-walled buildings. For example, one of the most significant structural points in such houses, where the walls are not intended to be load-bearing, is the point where the wall interfaces with the lower purlin. This purlin sits on top of the lower collar beam (tie beam) of the couple, and it is crucial that this purlin takes the place of a wall plate, allowing the collar to distribute the downward thrust of the roof into the couples, and not the wall. Given the asymmetrical nature of rough hewn crucks and purlins, it has proved much easier to have the purlins in place and then build the wall up to meet them.

Since continued root growth is an essential part of the way turf walls stand - it is really the 'mortar' which binds the walls together - we have proved that building during heavy frosts inhibits subsequent growth, with the result that the turf can just slide off the wall at a later date. This in turn can lead to whole stretches of wall being stressed and collapsing. This is perhaps less significant in alternating turf and stone construction, where the turf itself is the 'mortar' for the stones.

We knew from documentary evidence and from other experiments elsewhere that peat smoke was an important element in the way the houses worked. Smoke is essential to coat the timbers with tar, and so preserve them. It is equally important as the mechanism for curing food - meat and fish - for winter provision. What we did not know was how difficult it is to get the smoke from a central hearth with no chimney flue to go where you want it. Our first domestic fire was a disaster, with the smoke swirling around the house at all levels, suffocating anyone who was in the building for more than a few minutes. It took several months of experimenting with portable polythene screens, before we were able to work out where the wattle screens should be placed to make the smoke rise to the upper regions of the roof space and, eventually, out of the smoke hole.

Perhaps the most dramatic collapse came in the third year of the project, when we were reconstructing a corn-drying kiln. The excavation of a kiln in Glenbanchor, above Newtonmore (Inverness, NN678995), had supplied very detailed evidence about the construction of the lower section of the kiln, and the working of the flue. However, we knew nothing about the superstructure. Since we had just successfully completed the first Creel House at Baile Gean, it was not surprising that our newly acquired wattling skills were at the forefront of our minds. A

giant basket was made, about three metres in diameter at its mouth, and about 2 metres deep. This was placed in an upturned position on top of the kiln bowl, and then a skin of turf was built around it. All went well until we approached the narrow top of the basket, where the turf was now resting, like slates on the wattle. We came in one morning to find all the turf at the bottom of the kiln bowl, and the basket in tatters. A second attempt, this time suspending the basket from a cruck frame, was equally unsuccessful. It was not until we realised that the turf would have to be built vertically - brick-like - to the very top, that we were able to create a wall that has, so far, stood the test of time. The kiln itself works very efficiently, and gets overhot on occasion. We have a melted plastic thermometer to testify to that.

Illus 4. The Baile Gean corn-drying kiln, version 3.

After six years we are still learning from both old mistakes which have taken time to manifest themselves and from new ones. One example of the former is badly positioned scarf joints on a set of purlins, which have meant a hole in the roof of the Creel House this winter. Our biggest mistake so far, however, has been to allow an invasion of rabbits into the township over the past year or so. Rabbits would not have been a problem traditionally, since they would have been less common, and would have had a lot of natural predators, including the inhabitants of the townships. In the museum context there are few predators, and the museum is restricted in control methods because of public safety - no shooting and limited gassing. Rabbits are now burrowing into the turf walls, and on occasion undermining them completely. We are currently having to consider a costly fencing exercise, which will create an exclusion zone around the township site.

To end this section on a more upbeat note, not all our experiments have ended in failure. We have in Baile Gean a living working township, with food being cooked on the hearths, cloth being woven on the loom,

and livestock enlivening the whole experience for visitors. We have successfully created a "hanging lum" or canopy chimney, using clay from out own claypit, and we regularly smoke fish therein. We are currently conducting a series of experiments with lime wash, both exterior and interior renderings, which may reveal how the life of such buildings can be extended. We are also experimenting with new timbers, such as oak, for cruck frames, and we have had some spectacular successes in thatching.

Thatcher preservation campaign

In 1997, when the first two buildings had been erected, none of the Baile Gean team had any experience of thatching. It was decided, therefore to bring in a trainer to work with the HVBT staff. It was at this point that it became apparent just how few exponents of the Scottish, as opposed to the English, thatching tradition were still available.

Duncan 'Stalker' Mathieson, a master thatcher still working in the Scottish Highlands spent several months at the Baile Gean site, passing on his skills to a willing group of trainees. But the long hours up ladders or carting straw were not easy for him, for Stalker was approaching his eighth decade. At a meeting convened by Historic Scotland later that year, and attended by representatives of the Construction Industry Training Board (CITB) and the Scottish Qualifications Authority (SQA) as well as practising thatchers, it became clear that there were fewer than a dozen Scottish traditional thatchers working, and that many of them were of Stalker's generation. This led to a decision that a qualification in Scottish thatching was urgently required, if the skills were to be saved.

There are major differences between Scottish and English techniques of thatching, in that the latter is predominately concerned with reed and wheat straw. In Scotland a much wider range of materials have been utilised until very recently. These include bracken, broom, rush, oat and rye straw and heather. This raises not only issues of how to apply the roof covering, but also the techniques for gathering and storing the materials. A Technical Advice Note (TAN 4) from Historic Scotland, together with extremely rapid movement by both CITB and SQA, led to the accrediting of a new qualification within a year.

A year after that, two HVBT staff members were the first people to gain the SVQ. Moreover, they also had a registered trainee, and were employed to coach a group of thatchers in the Western Isles on Scottish techniques. One of the HVBT team has gone on to acquire a further qualification as an SVQ assessor.

Illus 5. Thatching in heather

Baile Gean has benefited greatly from this flurry of activity, and its potential as a research facility proven. With the support of the European Social Fund, under its remit of skills preservation, roofs in the township comprise thatches in oat straw, heather, broom and bracken.

Even more authentic is the fact that some of the early roofs have now been patched in a second material, underlining the fact that this range of traditional materials means that thatching repairs can be executed throughout much of the year. Archaeological research on old thatched houses bears this out, with as many as six different materials being discovered on one roof (Holden, 1998).

We have learned a great deal from this process. Perhaps most significantly we have shown how time consuming the harvesting of these materials can be. It is quite clear that without a large community workforce, that was available in the days of the township system, many of these thatches become uneconomic. This probably helps to explain their decline in the past century and a half. It also perhaps suggests that bodies supporting the restoration or preservation of traditional thatched roofs in Scotland must take this cost into account when determining grant support.

Much to the annoyance of the thatchers, not all the roofs at Baile Gean are completely watertight. This is probably very authentic, since there is a specific term in Gaelic 'snighe' for the 'water which comes through the soot impregnated roof' (Grant, 1961, 151). The development of boxbeds and cradles with hoods are also traditional responses to this occurrence. However, in the hope that such roofs might be revived as part of the modern architectural landscape of Scotland, experiments are still on-going to solve this problem, and bring these roofing materials up to a standard which will meet modern expectations, and indeed building regulations.

Bringing the Township to life

The Baile Gean project is not, of course, solely about experiments in building techniques, although these have featured prominently in the early years. It is also intended to learn as much as possible about how the township functioned as a farming unit, and how the individual dwellings worked as "machines for living". Moreover, as part of the museum complex, Baile Gean is also a major element in the interpretive and educational programme for visitors.

So the houses are not mere shells. They have been furnished with replica pieces, all firmly based on items from the museum's internationally significant collection of domestic material. Boxbeds, kists, chairs, bowls, platters and candleholders have all been made by our woodworking team, while our weavers have produced blankets and other soft furnishings on a replica loom.

Illus 6. Domesticity at Baile Gean

Fires are lit daily in the houses - an essential feature of the building maintenance regime - and are used for demonstrations of traditional cooking. Porridge, kale soup, oatcakes, and smoked fish all feature on the township menu. Oats are ground on the quern, and kale grows in the kaleyard. We haven't slaughtered any animals as part of the programme, but the township does have poultry, which supply eggs. In the last couple of years the hens have been joined by Soay Sheep and a pair of Tamworth pigs, representing the types of livestock, rather than the actual breeds of the period.

The keeping of pigs has raised a debate among the curatorial staff. Strong evidence of pig keeping, including farrowing pens, was discovered at Raitts, and despite the oft quoted belief that Highlanders abhorred pork, there is plenty of other written and oral evidence for their presence in traditional farming. The debate really centres on when they began to be reared in sties, as opposed to keeping them, medieval-fashion, as browsing stock in the nearby woodlands. The

Township's interpretive date is 1700, and my colleague, Bob Powell, an agricultural historian, believes that this is too early for the sty to be found. We have no dating evidence from Raitts, but we believe the building in question had a change of use between the period of its reconstruction (house with pig-sty appended) and its final abandonment in the early 1800s. As a compromise it is intended to carry out both forms of pig farming at Baile Gean, and an enclosure within the pine wood nearby will be erected in the very near future.

The farm now has an impressive range of replica implements, including an 18th century Scots Plough, copied from the rare surviving fragments, and a Kelloch (or dung) Cart, copied from an early 18th century drawing in Burt's Letters. An acre or so of ground has been prepared in rig and furrow and crops of oats, bere and flax have been taken off it, with varying degrees of success. The corn has been dried in the township's kiln, and stacked in the communal stackyard. It is hoped to create "lazybeds", a smaller hand dug version of rigs, in the coming season.

But the real strength of Baile Gean as an interpretive tool is its people. We have been very fortunate in having a team of seasonal museum interpreters who are prepared to dress up in replica costume - the male clothes being based on a bog body found in the late 1600s in Caithness, and now in the Museum of Scotland, and the female attire copied from a rare early 18th century painting of a working highland woman - and suffer the temperature changes, and the peat smoke, of these houses. They are all developing skills of their own, from straw basket-making, to weaving, to pole lathe turning. They are now inured to carrying wooden buckets full of water, baskets full of peat, and to going foraging in the pine woods for dry kindling. Year on year the team make suggestions to the curators for ways in which the interpretive experience can be improved and the experiment expanded.

One of the major shortfalls in the interpretation at present is that it is largely carried out in English, whereas the inhabitants of a township like Baile Gean would have been Gaelic speakers. The museum is currently developing an innovative project, whereby the visitor will be able to experience the interpretation in a Gaelic form, but receive an explanation in one or more of the major European languages.

Looking forward to going back

The Baile Gean project is on-going and it is hoped that it will continue to provide research results, and fresh questions, for many years to come. The archaeological work at Raitts has stopped at present, because the funding source has dried up, but there are many more investigations to be done there. We are still in a very early stage in developing our knowledge about medieval settlement in the Highlands, with the question of dating settlements being still a controversial subject. It would be good if other bodies took up the challenge of Raitts, and continued the research partnership with the museum. Or again, we would welcome input from other township excavation programmes, which could be incorporated into our future work. Experimental archaeology loses something of its significance if it is not directly relating and interfacing with current fieldwork, excavation, biological and geophysical survey work.

Finally, the Highland Folk Museum site at Newtonmore still has over 30 acres of undeveloped land, on which further experimental projects could be carried out. We would be happy to talk to any group who might wish to work with us in looking at reconstruction of structures from earlier periods, and would achieve great satisfaction from interpreting the whole human settlement story, as it is to be found in the archaeology of the Highlands of Scotland, within the one museum site. Our advertising slogan for the museum is 'through windows of time', and there are many more windows to be opened.

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SVBWG   Scottish Vernacular Buildings Working Group

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CHAMPAGNE COUNTRY: A REVIEW OF MEDIEVAL RURAL SETTLEMENT IN LOWLAND SCOTLAND

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Introduction

Champagne country, or champion land, is one which is dominated by nucleated villages and unenclosed arable fields. It is not only found in a large swath of central England (e.g. Lewis, Mitchell-Fox and Dyer 2001, 17 and 187), but also in parts of northern Europe, from north-eastern France to northern Germany and Denmark. The question this paper poses is to what extent medieval and post-medieval rural settlement in southern and eastern Scotland conforms to this wider pattern. In essence, it takes the rural landscape illustrated by Slezer in his 'Theatrum Scotiae' at the end of the 17th century and depicted on Roy's map and 18th century estate maps as a starting point to review the evidence for the pattern of medieval settlement.

Slezer's prospect of 'the House and Town of Skuyn' (Scone, Perthshire) in 1693 shows that the toun comprised tree-lined enclosures containing small patches of rig fronted by terraced houses around the House of Skuyn, with unenclosed fields of rig around the settlement (RCAHMS 1994a, 115; Illus. 1). Such an image fits the notion of champion country and matches the features that make up many of the touns that are depicted on estate plans of the 18th century. Few settlements take this form today and, of those that do, many are planned villages of the 18th and 19th centuries. A handful, however, are demonstrably of greater antiquity, taking the form of juxtaposed plots, or enclosures, often in rows and containing the houses (e.g. Midlem, Roxburghshire, Illus. 2). Such village settlements, it is argued, are described in medieval charters, which refer to adjacent tofts (i.e. plots for the houses) and dwellings. These are the rows of houses and small plots that are recognisable at Midlem and some other nearby villages (e.g. Lilliesleaf, Bowden, Eildon). This is also the style of villages shown on 18th-century estate plans from Aberdeenshire in the north to the Borders in the south (McNeill and MacQueen 1996, 286-9). Such a village model, in conjunction with unenclosed strip fields held in runrig i.e. with each strip allocated to a different tenant in such a way that the tenant's holding is scattered in many parcels across the fields, is confined to the southern and eastern lowlands of Scotland.

Illus 1. Champion country. Slezer's prospect of 'the House and Town of Skuyn' (Scone, Perthshire) in 1693, showing terraced houses and tree lined enclosures, containing small patches of rig, around the big house, and surrounded by unenclosed fields of rig.

Illus 2. Champion country. Aerial photograph of the village of Midlem, Roxburghshire. The layout with its rows of houses and plots arranged around the green are likely to be medieval in origin. Traces of strip fields may be seen around the settlement. Crown Copyright, RCAHMS

If this post-medieval lowland pattern of row settlements and unenclosed runrig land has medieval origins, it begs the question of when it came into existence. It is the contention of this paper that it has its origins in the 12th and 13th centuries, except perhaps in the Northumbrian area of the south-east, where its origins may be somewhat earlier. The gradual feudalisation of Scotland in the 12th and 13th centuries, which was led by King David and his successor kings, eased the spread of this type of settlement across the rest of lowland Scotland.

Research Background

Rural medieval settlement studies in Scotland have been hampered by the lack of any clear points of reference beyond the obvious castles and abbeys. In contrast to midland England, there are few deserted medieval villages in lowland Scotland, partly because of the efficiency with which agricultural improvers cleared the old 'touns' of the post-medieval landscape, but also because there is no equivalent in Scotland to the widespread conversion of arable land to pasture that took place in the English midlands in the late medieval period. As a result, there is no visible reminder of the medieval countryside, and the evidence has to be teased out from documentary sources and fragmentary archaeological remains. Much of the work to date has been done by historical geographers and documentary historians (e.g. Barrow 1962; Dodgshon 1981; Duncan 1975; Whyte 1981).

The first attempt to produce a synthesis of rural settlement in Scotland was in 1961 when the School of Scottish Studies held a symposium on 'The Evolution of Rural Settlement in Scotland'. At that time, Barrow argued for a pattern of villages in south-east Scotland, which was based on the notion that certain Anglian names denoted village settlement (Barrow 1962). This neat view of an Anglo-Saxon origin for medieval villages has since been thrown into relief by the evidence of excavations at two deserted village settlements, Springwood Park, Kelso, Roxburghshire and Rattray, Aberdeenshire (Dixon 1999; Murray and Murray 1993), which have a 12th century origin, indicating that new villages were being established in both the Border Counties and in the north-east in the 12th century.

Apart from a brief reference to Barrow's work south of the Forth, Fairhurst and Dunbar, in their synthesis of Scottish rural settlement in the seminal Beresford and Hurst volume on 'Deserted Medieval Villages' (Fairhurst and Dunbar 1971), concentrated on the 18th and 19th centuries. They adopted Adams, definition of the basic lowland unit of settlement as the 'ferm toun' and classified it as comprising 'a small community of four to eight families of joint tenants who farmed in runrig' (Adams 1967). More recent approaches to settlement patterns in the lowlands have looked at the different variations in settlement, using cartographic and documentary sources, e.g. the Poll Tax returns of 1695 and later 17th- and 18th-century estate records, to

develop a model that stretches as far back as the 17th century. Lockhart, who concentrated on the 19th-century nuclear settlements, planned villages, 'kirktowns', and fishing villages (Lockhart 1980), confirmed the modern pattern of occasional villages interspersed with farmsteads, but did not identify the possibility of any medieval origins. Whyte (1981), however, tried to look further into the past, but recognised the limitation of the approach, namely the lack of medieval graphic sources (the earliest surviving plans of rural settlement are from the 1560s, e.g. Eyemouth and Niddry, but by far the majority date from the 18th century) and accessible contemporary documentary evidence (most of it being in Latin), and suggested that archaeology should provide some of the answers. He further observed that the distribution of settlement in Scotland is more complex than that suggested in Adams' definition. Lowland settlement included single tenant farms, 'cottar touns' and 'feuer villages', not to mention the individual crofts that are found in Aberdeenshire, so that the classic 'ferm toun' defined by Adams only represents a part of the distribution. Corser (1993) adopted the flexible view that settlement units varied from the small croft or farmstead, to the large township held either by co-tenants or sub-tenants.

Whyte's analysis of rural settlement in the post-medieval period is the more helpful view. In Scotland the clustered settlements that occur over much of the lowlands in the 18th century were called 'toun' in Scots. The use of the term toun has not been adopted in settlement studies because of the confusion with the modern concept of a town as an urban settlement. The word township, which may also be applied to the whole territory of the toun, settlement and fields, has often been used as an alternative, and in the National Monuments Record of Scotland is the preferred term for such settlements, covering not only fermtouns, but also cottertoun, milltoun, castletoun and kirktoun. These latter types, however, are simply descriptive terms; in post-medieval rentals it is usual to find the farms and their tenants listed. In practice, the farms in the rentals can be any size of settlement unit; equally they may be only part of a settlement, or a combination of several, and care has to be used in interpreting settlement patterns from them.

In theory, a combined documentary and topographical approach can put more flesh on the bones, as was attempted in South-east Perth and Eastern Dumfries-shire (RCAHMS 1994a and 1997). In the latter, the Hearth Tax returns were used to provide a late-17th-century view of the distribution of settlement (RCAHMS 1997, 224-6), which showed that the majority of touns had between one and five households and the main difference between the lowland and upland parts of Dumfries-shire was that there were

more larger touns, in excess of five households, in the lowlands. For upland Eskdale, this distribution of small touns had recognisable medieval origins with the principal modern farms appearing in a 14th-century rental (RCAHMS 1997, 224). While the names of many 'vills' in lowland Annandale, which can be obtained from English records of the early 14th century, suggest, at face value, that there was a pattern of touns here by this time, indicating a medieval origin for some of the touns revealed in Hearth Tax returns in lowland Annandale.

In lowland Perthshire it was concluded from an analysis of the late medieval and post-medieval documentation that the settlement pattern comprised a mixture of 'kirktons, and a number of larger fermtouns and cottertouns, together with a wide scatter of smaller fermtouns and individual farmsteads' (RCAHMS 1994a, 115); a picture resembling that revealed on Roy's map in the mid-18th century. However, one feature of lowland Perthshire that should be noted - township splitting - was discussed in the RCAHMS survey. The late medieval rentals of Coupar Abbey show that in the 15th century a number of touns were intentionally split by the monks (RCAHMS 1994a, ibid.) to create smaller touns, or possibly individual farmsteads. The numbers of single households in the Hearth Tax for Dumfries-shire suggest that this may also have occurred there, and it is a process that Gordon of Straloch identifies in Aberdeenshire in the mid-17th century (Dodgshon 1981, 201-2). Dodgshon argues from the frequent documentary reference to townships qualified by a prefix, such as Easter and Wester, or Upper and Lower, that this process of township splitting, or dispersal, was a frequent event in late and post-medieval rural Scotland (Dodgshon 1981). Similar dispersal processes were also observed in Coldingham parish, Berwickshire, during the late medieval period (MVRG 1984), with some villages being deserted as new settlements were established.

The above suggests that the early-18th-century pattern of lowland settlement may have been more dispersed than in the medieval period. It also indicates that there was a certain amount of flux in the settlement pattern over the medieval centuries, showing that both desertion and creation occurred in the late-medieval and post-medieval periods. It also suggests that the village settlement pattern that was developing in the lowlands in 12th and 13th centuries was relatively short-lived. What triggered this late medieval reversal of fortune? The most likely reason is that the loss of a significant part of the population to the Black Death led to a shortage of labour, destroying the service economy of the 12th to 14th centuries, when labour was cheap and demesnes were worked by servile tenants and cheap labour. In its place, a rent-based economy developed. Demesnes, or granges on the monastic

estates, instead of being worked directly, were leased to tenants, some of whom were granted feu charters, and the need for a large concentrated workforce in a village was reduced. Gordon of Straloch put it another way. He commented that the dispersal of settlement was a reaction to the logistical limitations of working new intakes from the confines of a nucleated village. The feuing of monastic lands went further. Many of the tenants on the Melrose Abbey estates, for example, were able to obtain feu charters so that, in effect, the tenants acquired rights of inheritance that hitherto had not been legally acknowledged. This created what have been described as 'feuer villages' at places like Blainslie, Darnick, Newstead, Gattonside, Lessudden and Eildon (Roxburghshire), and Caputh, Dowally, Dulgarthhill, and Furgarth (Perthshire) (Dodgshon 1981, 103). Many of these settlements have been more resistant to change and have often survived the agricultural improvements that saw other touns swept away. Similar processes of survival and desertion may be seen in Northumberland (Dixon 1985).

The evidence of medieval documents

Most of the evidence for rural settlement in the lowlands is post-medieval in date, and mainly 18th century at that. This usually takes the form of estate records and is helpful in interpreting the pre-improvement and later landscape (e.g. RCAHMS 2001). The question of what form medieval settlement took is best addressed, wherever possible, by examining the evidence of the contemporary documentary sources and datable archaeological remains. To presume that the post-medieval pattern is the same as the medieval pattern is tempting, but rash without some justification. The remainder of this paper will attempt to see how far a successful model can be built from the medieval evidence and how it compares with the post-medieval pattern, since it has already been suggested that a process of dispersal was at work in the late medieval period.

The settlement pattern did not sit in a vacuum. Each settlement required land to cultivate and pasture to graze. Such units of land are referred to by a variety of terms in medieval documentation, such as terra, literally land, which is used more often in the north and west, or villa which may be translated as township in the sense of an area of cultivated land dependent on a toun or village, frequently applied in the south and east. In both instances they produce rents and services for the landowner. In other circumstances, the individual dwellings are referred to by terms such as mansio or messuagium, and cottages as cotagia, while the plot on which they stood is referred to as toft. Within the terra or villa, there are many varieties of settlement. Gibson (1990) has shown that in Strathtay, in highland

Perthshire, there may be many townships in one medieval terra, as revealed by a comparison of medieval deeds and 18th century estate records.

The following analysis concentrates on documentation from the monasteries of the south-east, but similar topographic work could be done in other parts of Scotland wherever there are monastic cartularies.

In the Bowmont Valley of the Cheviots the tenementum, or estate, of Mow, which belonged to Kelso Abbey, comprised the following units in a rental of c.1300: the Grange of Elisheugh; 14 cottages in the villa of Mow (possibly at Attonburn, i.e. meaning old town burn); a shepherd's house at Senegeside; and various pieces of cultivated land (Liber de Calchou). These were spread over a distance of several kilometres, to judge from a comparison of the medieval place-names with the modern map. The site of Elisheugh Grange has been identified with an abandoned farmstead, comprising four large buildings, two enclosures and a corn-drying kiln (NMRS NT82SW 23), while the footings of a row of buildings and enclosures to the north of Attonburn steading may account for part of the documented cotter toun of 14 cottages (McKeague pers. comm.). Similar instances of a dispersed pattern of settlement within a documented villa have been encountered at Coldingham in Berwickshire, where the outlying township of Lumsdaine, on record from the late 12th century, was already divided into two parts, and there is field evidence for several small settlements on the edge of the moor nearby (e.g. Dowlaw Burn, NMRS NT86NE 30 and 31).

In the light of this evidence for a variety of settlement types, the question arises, is there good documentary evidence for nucleated villages in Scotland in the medieval period at all, and how extensive might it be? While the use of the term villa has to be treated with caution, some approaches are available in seeking a wider picture of the nature of medieval rural settlement. The term villa, when combined with territorium, may be used to differentiate pieces of cultivated land from property in the toun. For example, a charter of Coldingham Priory, dated 1275, records the grant of

> 'a house in the east part of the toun (villa) of Auchencraw between the house of the lord Robert of Blakburn on the one side and lord David of Paxton on the other and 20 acres of arable and meadow in the territory of the same toun (villa)' (Raine 1852, App. CXCVI).

This appears to describe a row of houses, while the description of the 20 acres of arable and meadow as located in the territory of the same township, suggests a nuclear settlement. The deeds of Coldingham Priory

and other monastic cartularies describe similar juxtaposed tofts, suggestive of a row settlement, at a number of other sites in Berwickshire (e.g. Auchencraw, Auldcambus, Ayton Superior and Inferior, West Reston and Coldingham). Occasionally, the deeds specifically refer to a toft on one side of the toun, or as part of a row (e.g. Coldingham in 1326, Raine 1852, App. No. CCCIII). The extent of the distribution of row villages based upon this kind of charter evidence still remains to be compiled. However, it is probable that those townships, which contain a number of unfree tenancies of similar size, for example, bondmen, husbandmen or cottagers, are based at a village settlement, as at Swinewood, Flemington, Renton, Prendergest or Bowden in the rentals of Coldingham Priory (Raine 1841. App. LXVIII), or Kelso Abbey (Liber de Calchou). This is important circumstantial evidence. Although all the tenants could theoretically be settled in crofts, which would produce a dispersed pattern of settlement, no evidence of this type of arrangement has yet been found and the documentation does not suggest it.

Another approach to the development of village settlement is through place-names, which provides evidence to support the planting of new settlements in the 12th century. For example, in the Lothian township of Duddingston, the villa (village) of Doddin replaced the celtic Treverlen in the 12th century (RCAHMS 1998), and at the Peeblesshire township of Eddleston, the name changed from Peniacob, via Gillmorestun in the 12th century, to Edulf's toun (RCAHMS 1967, 5). Similar foundations of villages can also be found in Aberdeenshire (Stringer 1985) and Lanarkshire (Dodgshon 1981, 95), where French or English names are attached to the English suffix 'ton'. More documentary work needs to be done to establish the extent of this process, but the trend is evident.

Archaeological evidence

It is important to understand something of the geography of Scotland and its role in shaping the archaeological record of medieval settlement. The Highland Massif effectively divides the country into two zones, focusing modern arable cultivation into the lower eastern and southern areas. It is this eastern lowlands that provides the most extensive well-drained soils, and are most suitable for village settlement. As a result of more recent cultivation, however, little trace of any medieval settlements can be detected in the modern landscape, apart from the more substantial structures such as castles, churches and burial grounds. It is often only in the straths leading into the Highlands, or the upland dales of southern Scotland, that the remains of medieval or post-medieval sites are to be found in any numbers. In the Southern Uplands most of these sites

are farmsteads, not touns. This pattern of survival has led to a dichotomy; good medieval documentation occurs most frequently in areas that are subject to more intensive land-use, where the archaeology is poorly preserved or difficult to locate, and vice-versa. Ideally, the settlement researcher would like to have some overlap between the two so that a trustworthy model can be developed. Sadly, this is rarely the case. Although Menstrie Glen has proved an exception to the rule, this is an example of a post-medieval upland landscape in which the shielings are probably the only medieval element still visible (RCAHMS 2001).

1. Nucleated settlement

The amount of excavation on rural medieval sites in Scotland is still pitifully small. Nevertheless, the results of work at two rural settlements, set at opposite ends of the country, have now been published; the first at Rattray, Aberdeenshire (Murray and Murray 1993) and the second at Springwood Park, Kelso, Roxburghshire (Dixon 1999), while, at Glenochar in the uplands of Lanarkshire, a post-medieval township around a bastle house has been extensively excavated in the last decade (Ward 1998).

Both Springwood Park and Rattray are row settlements and typify the richer end of the rural medieval settlement spectrum. They had buildings with walls constructed of largely perishable materials, probably clay, although stone footings were used at Springwood Park in the 13th and 14th century phases (Illus. 3 and 4), and there is evidence at each site for a change in building construction from earthfast-post structures to cruck-framed houses in the 13th and 14th centuries respectively (Dixon in press). The houses at Springwood Park are arranged along the edge of a terrace, while Rattray is a good example of a castletoun with the village laid out on either side of a street that runs from the castle motte at one end to the church at the other (Illus. 5). In each case they appear to be new foundations of 12th and 13th centuries respectively, and were abandoned in the late medieval period. Their short-lived histories indicate the impermanence of medieval settlement, with evidence of re-planning and rebuilding and finally abandonment itself. Both sites show that village settlements that have persisted on the same site may have undergone many rebuilds and redesigns, whilst retaining the same overall layout. Such is the perishable nature of the building materials, that it is only the presence of medieval pottery in the soil that will be recognisable on the surface. There were no cropmarks of the settlement at Springwood Park, and at Rattray it is the absence of rig cropmarks along the roadside that alert one to the possibility of a settlement. To date, only a handful of pottery scatters indicative of a settlement have been located, most of
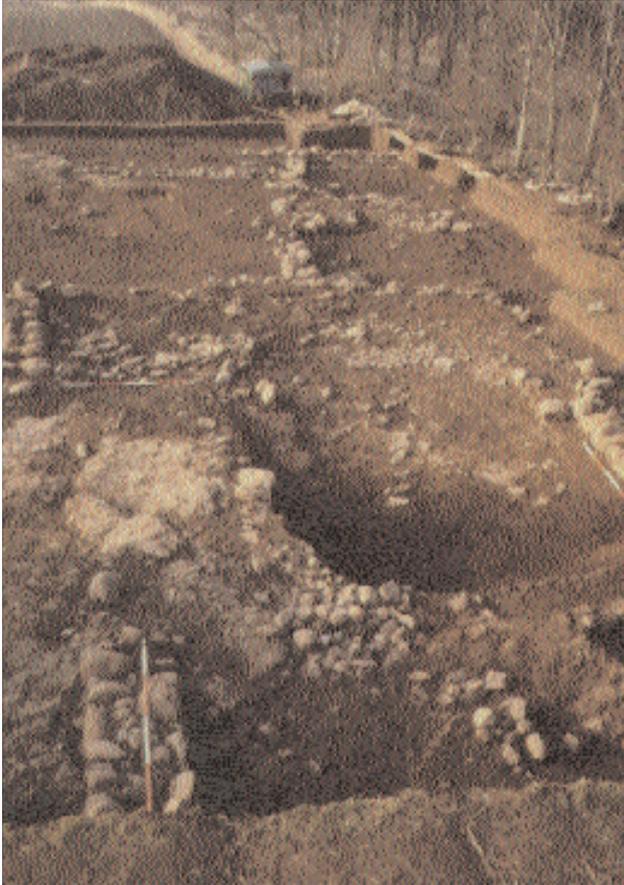
Illus 3. Excavations at the deserted medieval village at Springwood Park, Kelso, Roxburghshire, showing the row of early 14th century houses. Probably constructed of clay on a footing of stone, they are levelled into the slope. The stone footings of the previous phase of buildings may be seen lying at right-angles to the row. Copyright Piers Dixon.
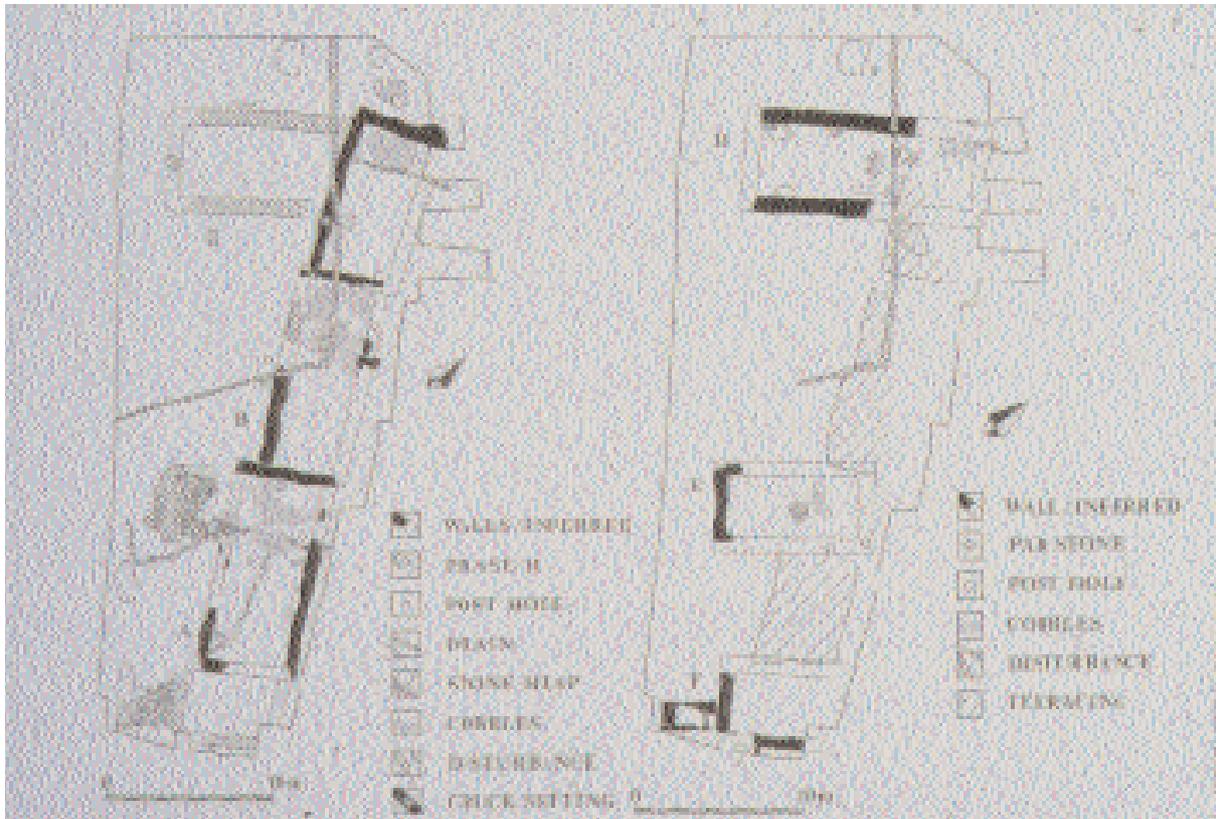
Illus 4. Plans showing left) the 14th century row of houses and right) the earlier 13th century phase of houses. Note how the houses have been rebuilt at right angles to the previous arrangement. Crown Copyright Historic Scotland.

Illus 5. Aerial photograph of the deserted medieval village of Rattray, Aberdeenshire, showing the castle motte at one end (left of photograph) and the church at the other end (right of photograph) of the village. The modern road marks the line of the medieval street. The furrows of ploughed-out rig show as cropmarks in the field, and the settlement lay alongside the road where no cropmarks show. Crown Copyright Historic Scotland.

Illus 6. The site of a monastic grange in the Halterburn valley of the Cheviots, Roxburghshire, comprising a large square enclosure about 100m across defined by a grass-covered bank and external ditch. Probably the grange of Colpenhope belonging to Kelso Abbey. Crown Copyright Piers Dixon.

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them at sites in the Borders and Fife (Dixon 1999). Pollock, working in Angus, did not locate any pottery scatters, and cropmarks provided few strong clues to settlement location, although extensive broad rig was recorded. He concluded that most modern farms with medieval names must occupy the sites of their medieval forebears (Pollock 1987, 397-8). This is a presumption that needs to be tested. The absence of pottery in the plough-soil is not evidence of the absence of settlement. Indeed, in excavations at the forest stead of Dowglen, Eskdale, Dumfries-shire, no datable artefacts at all were recovered from what might be expected to be a medieval building on grounds of its character (RCAHMS 1997, 235).

Earthwork evidence suffers from being notoriously difficult to date and can rarely be placed in a medieval, as opposed to a post-medieval, context with any confidence. Be that as it may, there is some field evidence for village sites that are certainly pre-improvement in date and may have medieval origins. A recently located example is a small two-row street-village found at Upper Chatto in the Hownam Valley of the Cheviots, Roxburghshire, with a small moated settlement on the opposite side of the burn from it (NMRS NT71NE 76). Another lies at Hume Castle, Berwickshire, where, on the terraces below the castle, there are the extensive remains of a village site, comprising building-platforms and adjacent plots (NMRS NT74SW 10). Other more vestigial remains have been found elsewhere, such as those at Nether Ayton in Berwickshire (NMRS NT96SW 55), Redden and Nenthorn, Roxburghshire (NMRS NT73NE 15 and NT63NE 6 respectively), Dunrod, Kirkcudbrightshire with its moated site (NMRS NX64NE 7 and 9), or Markle in East Lothian (NMRS NT57NE 3). The documentary record suggests a variety of dates for the abandonment of these sites from the late medieval period to the later 18th and early 19th centuries. Indeed Pitmiddle, Perthshire, which has the typical layout of a medieval row village, still had some occupied houses in the mid-19th century, and has suffered abandonment since then (NMRS NO22NW 23).

2. Dispersed settlement

One particular type of dispersed settlement of the medieval period that may be identified with confidence is the monastic grange (grangia). Such sites are often relatively well documented in the monastic cartularies. In a rental of c.1300, the barony of Bolden, which belonged to Kelso Abbey, had five granges, namely Faudon, Witemer, Witelaw, Haliden and Newton (Liber de Calchou). It is clear that these granges were separate entities from the townships (villa) within which they lay, as at Mow, Redden and Witemer. On the ground, the grange of Colpenhope is one of the best preserved,

and comprises a large rectilinear ditched enclosure some 100m across in the Halterburn Valley within which are several buildings (Illus 6). The site of the grange and its associated medieval village of Redden (NMRS NT73NE 15) is also visible as an earthwork (RCAHMS and HS 2002, 6), while there is some potential for recognising a grange from cropmarks, as at Coupar Grange, Perthshire (RCAHMS 1994a), where there is a rectilinear ditched enclosure containing a number of rectangular maculae, which may mark the sites of large buildings (NMRS NO24SW 74).

Another type of dispersed settlement is the moated site. Less than one hundred are recorded, scattered for the most part across the lowland parts of Scotland. Little is known of their date or status, and recent survey work for Historic Scotland has been geared mainly to their management rather than a field analysis of the monuments. Some are likely to be the sites of castles or manorial establishments, such as that at Caerlaverock Castle, Dumfries-shire, recently excavated, Timpendean near Jedburgh, or the above examples of Dunrod and Upper Chatto. The 14th-century Hermitage Chapel appears to post-date a moated enclosure. The chapel is offset to one side of the interior, an unusual disposition for a church. Unfortunately there is no documentation that can shed light on its status, which might be that of a monastic cell, hence the name, or an undocumented manorial enclosure. On analogy with England, the dating of moated sites is assumed to be 12th to 14th centuries, although this needs to be tested by excavation. It is also evident that many manorial settlements from the 12th and 13th centuries have yet to be identified, and do not, it may be surmised, have any moat around them at all. The excavation of an early medieval ditched enclosure at Upper Gothens shows that there is some potential locating estate centres from this period from amongst the cropmark evidence (Barclay 2001), and shows the difficulty in separating medieval enclosures from prehistoric settlements, whether rectilinear or not (RCAHMS 1994a, 57-9 and RCAHMS 1997, 149).

3. Transhumance

For many settlements in the north and west of Scotland, the limited availability of arable and its poor quality led to a high level of dependence on the pasturage of cattle and sheep, and to the development of a transhumance system to enable the inhabitants to exploit their resources to the full. The movement of animals to the shieling-grounds during the crop-growing months of the year was a fact of life until the late- 18th or early-19th century, and left its traces in the scattered groups of huts in the rough pastures. However, shieling was not exclusive to the north and west, and evidence of it

may be found even in the extreme south-east, although the practice appears to have ceased here by the 17th century. Examples of shielings have been encountered in many parts of the upland areas of southern and eastern Scotland, including Menstrie Glen, Stirlingshire (RCAHMS 2001), Glenesslin, Nithsdale (RCAHMS 1994c, 15) and upper Strathdon (Illus 7), while those excavated at Shiel Burn, Muirkirk, Ayrshire have produced medieval pottery (Fairbairn 1927). There is also medieval documentation for lowland touns having access to upland pasturage at some distance from the mother settlement, for example, Chirnside, Berwickshire, had pasturage in the Lammermuirs while the tenants of Tarland in Aberdeenshire had pasturage in Glenernan in upper Strathdon.

Illus 7. A turf shieling-hut on the upper reaches of Glen Nochty, Strathdon, Aberdeenshire. Crown Copyright RCAHMS.

4. Hunting forests and settlement

Another facet of the medieval rural landscape was the hunting reserve or forest. Hunting forests were introduced to Scotland by David I in the mid-12th century, first to the royal demesne, and second by licence to many of his barons. The forest grant enabled a baron to run hunting forests on behalf of the crown, whilst technically reserving deer to the crown. It allowed his feudal dependants to exercise the crown prerogative. Running a hunting forest gave the Crown, or baron, control over all the economic activity in the forest, since anything that affected the maintenance of the king's deer, or their habitat, i.e. woodland or pasture, was an offence. Settlement and agriculture, in particular, were not permitted without licence. In practice it does not appear to have prevented development, although it gave greater control to the Crown or baron over the way in which it was carried out, since the hunting forest had its own bureaucracy of officials to run and maintain it, and forest laws to be administered (Gilbert 1979). The medieval term for the clearance of land for cultivation was 'assart', and

charters of assart date from the 12th century to the 14th century, suggesting that this was the main period for intakes from hunting reserves.

A good example of the exploitation of land for settlement in a hunting forest comes from a documentary study by Gilbert of the area to the north of Melrose (Gilbert 1983). Most of the area lay within the royal forest created by David I and was granted to Melrose Abbey in the 12th century. Here it is possible to document the assarts or enclosures of new settlements along the west side of Lauderdale. An important detail is that they are described as ditched and hedged where the boundaries do not follow obvious natural features, such as rivers. The new farms appear to have occupied between 150ha and 900ha, based upon the descriptions of the bounds in the charters. Some of these are large townships, and Gattonside, the largest, became a village of some considerable size by the post-medieval period. Once again a model of settlement has been created based on the documentation, but, unfortunately, as this area is largely given over to arable or improved pasture, few earthworks survive to confirm the physical appearance of the enclosures, or of the settlements that lie within them.

The dichotomy between the documentary and archaeological evidence may be seen at its starkest in south-west Scotland, where the forest of Annandale was granted to the Bruce family. Here, there are a number of grants of assarts, all of which now lie in improved farmland and leave no trace, including one that describes how an assart was to be enclosed with hedges and ditches. However, at least one undocumented example of this type of intake has been recognised on the Cowburn, in upland Annandale, and encloses about 60ha (RCAHMS 1997, 38), though its date is unknown.

However, in two areas, Liddesdale and Jedburgh, a royal and baronial forest respectively, there are the upstanding remains of rural settlements that are potentially medieval and of the enclosure dykes of what appear to be assarts. Both forests have late medieval rentals, 1376 and 1541 respectively, that shed some light on the pattern of settlement.

In Jedburgh Forest, field survey was carried out by RCAHMS in 1991-2 on a strip of ground near the English border in an area called Southdean, which has been a separate parish since medieval times (RCAHMS 1994b). Here a pattern of farmsteads was recovered which extends along the banks of the Jed Water and its tributaries. The farmsteads range from small settlements, comprising a building and an enclosure, to larger groups of buildings that incorporate defensible stone buildings of late 16th-century date, such as Slacks (RCAHMS 1994b): a site not unlike Glenochar

Illus 8. An example of an assart dyke, comprising a bank and external ditch, at Carter Burn, Southdean, Roxburghshire. The profile of the ditch is picked out by the drystone dyke of the plantation in the background. The site lies within the area of the former royal forest of Jedburgh. Crown Copyright, RCAHMS

(Ward 1998). While the larger sites are depicted by Pont, the smaller sites are not (Blaeu 1654). This and the apparent absence from post medieval documentation suggest they may be late medieval desertions. Surrounding both types of settlement, there are systems of enclosing dykes that encompass the rigged ground and the settlements themselves. These take the form of a bank with an external ditch (Illus 8), which often encloses a D-shaped enclosure with the chord of the D defined by a burn or river. The smallest of these lies on a tributary of the Jed Water called the Carter Burn. It is only about 7ha in area and contains two small farmsteads and some rig and furrow cultivation. An additional 14ha were subsequently added to this, by extending another bank and ditch along the contour as far as an adjacent assart. Larger enclosures, such as that around Northbank Tower, may total c.30ha or more (RCAHMS 1994b).

In Liddesdale, surveyed by RCAHMS in 1996, there are 'assart' enclosures ranging from as little as 4ha upwards, with the larger 'assarts' defined by dykes running over distances of up to 4km, such as that on the slopes of Carby Hill on the east of the dale, or that on Kirkhill to the west. These enclosures encompass large areas which, in the case of Carby Hill, may be in excess of 700ha. Such a large area is comparable with those documented by Gilbert (1983). Even if this enclosure was sub-divided, for example, by a burn that cuts through the dyke in the middle of its course, it does appear that large pieces of ground were enclosed in Liddesdale, as in Lauderdale. Unfortunately there is no direct documentation for these enclosures being assarts.

Illus 9. Aerial photograph of a forest stead at Kirkhill near Newcastleton, Roxburghshire. The course of two assart dykes may be seen running diagonally across the photograph, in the centre of which there is a multiphase turf-walled farmstead. Crown Copyright, RCAHMS

The question is whether assarts can be identified without supporting documentary evidence. The character of the Southdean and Liddesdale enclosure dykes with their sinuous course and bank and external ditch are certainly pre-improvement; they fit the documented ditched and hedged boundary that was required by medieval grants of assart and, in field terms, invariably predate the other pre-improvement landscape features. The lack of documentation may be explained if these are enclosures granted by manorial licence to unfree tenants, rather than feudal grants. Such arrangements would only be recorded in the account rolls, which for Liddesdale lordship are lost. In dating terms, however, it is possible to provide a terminus ante quem for the system of enclosures in Liddesdale. They were no longer in use in 1718, when an estate survey was carried out, by which time the farm boundaries depicted on the estate plans ran up and down the slope from valley bottom to watershed, rather than along the contour (Dixon 1997), indicating that the hunting reserve was not maintained and that the farms now included both farmland and hill pasture rather than just a restricted piece of the lower ground.

In Liddesdale, as in Southdean, the settlements within the enclosures are farmsteads with rarely more than a few buildings, often turf-walled and of very slight profile (e.g. Illus 9). Their floruit cannot be determined without excavation. However, of those that can be equated with documented farms in Liddesdale, some can be demonstrated to have been abandoned before 1718 when the estate survey was compiled, and there is a documentary basis for expecting some to have been abandoned earlier. Indeed, the 1541 Crown rental lists one quarter of the farms as vacant. It is, of course, possible for them to be reoccupied, just as at Springwood Park near Kelso. On the Greenshiels Burn, a place-name suggesting a transhumance origin, there are archaeological grounds for suggesting three separate phases of construction from the layout of the buildings and differences in their form, and the farm of Greenshiels is documented between 1376 and 1614 (Dixon 1997).

The process of deforestation may explain the rather different history of the royal forests of Alyth and Clunie, Perthshire, which were alienated in the late 15th century. There is no record of settlement within the forest until c.1600, when several farmsteads (Sheriffmuir, Roughsheal, Dulater, and Buckinhill) are documented (RCAHMS 1990). This suggests that these settlements are part of a later phase of settlement expansion than the assarts of the 12th to 14th centuries, and the absence of ditched and banked intakes at Sheriffmuir, Roughsheal, Dulater, Buckinhill and Ranegeig is significant. This settlement is likely to be post deforestation, an environment in which enclosure from the deer forest was not required. Thus at Sheriffmuir, for example, the furlongs of rig are enclosed by a dyke with no ditch.

Conclusions

Despite the lack of excavations, it may be concluded that the medieval settlement pattern of lowland Scotland was a mixture of large and small row villages, moated manors and granges. In the upland areas there are farmsteads and shielings. There are in effect two zones. The relatively low-lying part of Scotland is recognisable as champion country by the 13th century, especially when combined with the documentary evidence for strip fields and the archaeological remains of broad rig (Halliday, this volume). In contrast to this are the uplands, including the hinterland of Galloway, where a more dispersed pattern of settlement and shielings prevailed.

In some of this latter zone, the introduction of hunting forests has left a characteristic archaeological legacy in the enclosure pattern of assarts, and has had an impact on the history of settlement, which varies from one reserve to another. The archaeology of the settlements within the assarts recorded in field survey indicates that they were farmsteads, often with multiple phases. But these are upland areas, whereas at Gattonside, on better farmland beside the River Tweed, a large village settlement has grown-up in a documented forest assart, which has survived into the modern period, probably because of the feuing of the tenant's lands. Hunting forests are in themselves no determinant of settlement patterns. There will be a variety of responses, but the evidence of field survey and documentation suggests that the medieval process of enclosure in hunting reserves had distinctive characteristics, which are preserved in the more marginal farmland of the Southern Uplands.

To date, excavations of village sites indicate that they were newly planned settlements of the 12th century that underwent episodes of replanning, rebuilding, and late medieval desertion. At both sites excavated cruck-framed houses succeeded those founded on earthfast-posts, suggesting an architectural change in peasant housing. This is a confirmation of the impermanence of rural medieval buildings, which, in view of the perishable materials used in their construction, may account for some of the difficulties in identifying them, but it should also be recognised that the basic street and row layout appears to have been maintained throughout the life of the settlements.

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THE NATURE OF IDENTITY

FIONA WATSON AND CLARE PALMER

Dr Watson was originally scheduled to give a paper entitled "Settlement and Woodland in Pre-modern Scotland". However, due to a last minute change, the following paper was given in its place, examining our pre-conceptions of the landscapes in which past communities lived. This presentation was very well received, and a brief summary is given below.

Nature and Identity

This paper puts forward some preliminary ideas about relationships between the environment and identity, especially regional and national identities. In exploring these questions we will be adopting an understanding of 'the environment' which falls between a strongly realist and a strongly constructivist approach. Unlike those scientists who conceive of the environment as a straightforwardly accessible, objective reality, the sum of its measurable component parts, we adopt the view that environmental understanding rests on interpretation of the evidence, which inevitably introduces social and cultural perspectives. On the other hand, we do not adopt such a strongly constructivist idea of 'the environment' to say that it is little more than a product of our 'imaginings', unshaped by any external reality. On the contrary, the environment has had a fundamental impact on the course of human history (which could not, of course, have happened without it!) providing conditions of possibility for human development in any given area, and - to some extent - influencing the nature of human development.

Alongside these fundamental physical links, the environment - especially in the form of landscape - has been, we will argue, fundamental to the ways in which humans understand themselves and construct their identity. Although there has recently been some research in this area, in general this aspect of the construction of human identity has been little studied. Analyses of identity have usually tended to explore the inter-human social interactions of tightly-packed human cultures. At best, the effects of urban environments on social and cultural identity have been looked at, but only to a limited extent.

Further, in the absence of close, continuous contact with non-urban environments in the recent past (which have, of course, always directly sustained urban areas)

rural environments have been assigned values, sometimes very high values, characterised by - even originating in - separation from human beings. This is despite the fact that, often, such values are attributed to environments very much shaped by human activities. At first sight, it would seem odd to argue that something valued in separation might be important in the very internal, human process of identity construction. But, of course, it is common enough to argue that identities are often constructed against that which is perceived to be, or designated as, 'other'. Indeed, a number of feminist writers, for instance, have maintained that Western identities, especially male identities, have been forged against 'Nature', understood as 'other', and associated with qualities such as emotion and irrationality.

But this is not, quite, the aspect of 'nature' that we are interested in here. We are concerned with the ways in which regional and national perceptions of the environment in general, and specific landscapes in particular, have been important in helping to develop a wider sense of identity. These 'places with meanings' can form a central part of regional and national identity, and, equally, be a contributory element in ways of perceiving other peoples with whom one does not identify (in this case, other member peoples of the British Isles). Obviously, such processes are complicated and variable: but nonetheless important to any fleshed-out understanding of identity.

Some problems

Studying such aspects of identity is fraught with difficulty. One of the reasons for this is the political significance of the whole issue, especially in relation to national identities in the last few centuries. There have, of course, been many attempts to create and promote, hijack and undermine particular identities by 'the establishment' of one kind or another. However, the historical profession (and by this we must include the full-range of archaeological input) must take care not to assume that our disciplines are value-free. As Gordon Barclay has clearly shown, archaeologists are certainly not immune from the impact of the identities they carry on their interpretations (Barclay, 2002). It is dangerous indeed to extrapolate from excavations in one part of Britain to another, even in areas that might superficially appear to share a similar environment.

This is simply because local conditions and histories have had a profound effect on all aspects of material culture, and therefore the way in which each group saw itself and its relationship with the rest of the world.

It has long been in the interests of the state to smooth over distinctions among groups within each particular political unit. This process includes glossing over the powerful local identities, rooted in the environments in which their component peoples lived. Patriotism – the love of one's native land – is by no means automatically about the maintenance of a state or even a nation. That it has come to take this meaning emphasises the dominance of the official view. The gut patriotic instinct is to defend one's home, hearth and community, the land on which your own group has settled and made its own. For much of human history this has involved the explicit differentiation of one group over another even within a larger nation or state.

However, it is often rather difficult to get to grips with these smaller group identities because of the dominance of the winner – usually a dominant group seeking to subsume other groups, often through the creation of a larger political unit - in the writing of history. This problem, then, should be borne in mind when considering the significance of the environment and the landscape in the construction of national and regional identities within the British Isles.

Arable and Pastoral in the British Isles

A number of existing studies have already emphasised the importance of the rural in dominant ideas of Englishness (see Matless 1998; Williams, 1973; Soper 1995). Howkins (1986) goes so far as to say that "the ideology of England and Englishness is to a remarkable degree rural". But the 'rural' (understood here as the not-urban) comprises very many different kinds of environments and landscapes, not all of which are central to dominant conceptions of Englishness (though they may still be important to particular regional or local identities within England). One interesting line of questioning here is to explore how, historically, some environments have been, and may still be, promoted as central to dominant ideas of national identity (not just Englishness, of course, but also in this context Scottishness, Welshness and Irishness) whilst others are neglected or denied. In addition one can contrast how other marginalised peoples incorporated the environment into their different identities. In the short time available here, we want to consider a couple of aspects of this in more detail.

Several accounts of landscape and national identity in the British Isles have argued that some environments and landscapes, at particular periods in history, have been much more significant than others. Matless (1998 p.16) for instance, in Landscape and Englishness, argues convincingly that "evocations of English landscape are often specifically regional, projecting a southern Englishness in the name of the whole." It is also often assumed that, in the British Isles, arable lands are more significant than pastoral ones (by this, we mean that land best used for crop farming has been prioritised over land, usually the uplands, better suited to the grazing of animals). This has led to the designation of the lowland, often wheat-based arable lands as the 'core' and pastoral lands as the 'periphery'. Whilst many historical factors may have led to this situation, the division between arable and pastoral seems to have been significant in the British Isles, certainly in more recent centuries. Thus undeniable physical characteristics take on, and become profoundly enmeshed with, political and cultural aspects which all contribute to identity.

The establishment of much more distinctive nations, assigned to particular geographical areas, also had an impact on the role of place in identity. To demonstrate this, we could consider the impact of the arrival of the Normans in these Isles. In England, the Norman Conquest involved the establishment of many incoming families on the estates of former Anglo-Saxon nobility. Though some were given land in the north, the new regime nevertheless sought to replicate the existing power structure that had seen government and the Crown concentrate its power in the arable or rolling pastoral lands of the south, rather than more upland areas. This was a natural result of the fact that the kingdom of Wessex had provided the catalyst for the creation of the unified kingdom of England, taking over other smaller Anglo-Saxon kingdoms, including the once-powerful Northumbria, as well as former Danish settlements in the east. In Scotland, the Anglo-Normans introduced to the country by David I were settled on similar land in Lothian and the Borders and the eastern coastal strip above the Tay (though they later moved to other parts of the country as they intermarried with the native nobility and/or worked for the Crown in bringing peripheral areas more firmly under royal control). In Ireland, too, the eastern coastal strip comprising much of the best arable land was colonised by the incoming Anglo-Irish, and the marcher lordships of Wales, combined with the 'English' county of Pembrokeshire, again created a rough upland-lowland divide, with the dominant political group living on the latter.

We could assert that the Normans might, for a number of reasons, have deliberately avoided the uplands. But that may be missing the point. Certainly we should note that a preference for arable/lowland pastoral farming was not a prerequisite for the wielding of political power within an area. For example, the

Scandinavians who came to the west of Scotland and Ireland after 700 AD intermarried with the native Celts, becoming indistinguishable from them, and lived on land that was far more upland. This led to the rise of the powerful kingdom of the Isles, which straddled both sides of the Irish sea. That kingdom ultimately did not proceed to nation-state status and, for later historical reasons, the areas it encompassed have become saddled with a reputation for being unable to sustain people, for the poverty of its soils and the backwardness of the way of life there. But this was certainly not always the case and we should recognise the extent to which the false dichotomy between 'periphery' and 'core' within the British Isles fundamentally affects our understanding of the people who lived in these different areas and the 'progress' of history often ascribed to them.

To be fair, no moral attributes of a negative nature were ascribed to those who lived in the uplands. But the political dominance of the lowland strongholds of Scotland, England, Ireland and Wales was bound to condition attitudes especially since, in all of these nations except England, a racial element could also be added to the categorisation (e.g. highlanders/Celts in uplands of Scotland). But, it should be repeated, power and wealth were not always automatically the preserve of those living in the arable lands. Given the strength of the wool trade during the Middle Ages, wealth was certainly to be created in the uplands. However, a number of accidents of history, including the effects of invasion, which usually came through the south and east (with the corollary, in England, Wales and Ireland, at least, that the conquered peoples were often pushed west), has meant that political power in all the component nations of the British Isles has tended to lie to the south and/or east. Once nation-states were established, most particularly in England and Scotland, the association of political power with a particular landscape and way of living in that environment has created a dominant discourse of identity which revolved in part around creating a negative image of alternative landscapes. The exception has, of course, been the adoption of a highland identity, associated very much with a wild and beautiful landscape, in modern Scotland. But that is a product of comparatively recent and very particular political interpretations of the past.

Wild and Civilised in the British Isles

The west highlands of Scotland, as one of the few predominantly non-Normanised/Anglicised communities to survive into the early modern era, also provide us with an interesting insight into the continuance of much older ways of identifying with the environment, which have survived the major shift in the official way of looking at that same relationship. In the Gaelic poetry of only a few centuries ago (admittedly accessible to most of us here only in translation, which loses so much of the magic and essence of the original), a fundamentally different landscape is portrayed. Rather than wild, hostile, and in need of taming, the highland Scots saw the landscape as rich in every sense, vibrant and beautiful, despite the admitted difficulties of a highland winter.

A Song for Summer

Pheobus early turns yellow
the cap of mountain and peak
lovely birds full of joy then
shape their notes with precision
swift melodious rhythm
in bush, sapling and glen,
a courtly chorale, no screeching
from that frolicksome crew.

May, with soft showers and sunshine,
meadows, grass-fields I love,
milky, whey-white and creamy,
frothing, whisked up in pails,
time for crowdie and milk-curds,
time for firkins and kits,
lambs, goat-kids and roe-deer,
bucks, a rich time for flocks.

*Alastair MacMaighstir Alastair
(?1695-1770) in Watson, 1995.*

This contrasts fundamentally with the way that the area was viewed by the rest of Britain, in particular, the political elites of England and lowland Scotland. The values of 'civilisation' which are blamed (with some justification) for causing the Clearances – defined, in this case, as Englishness and aspired to by many lowland Scots – were regarded by the English as universal values. That is to say, they were not thought by the English to be part of any particular manifestation of a temporally and spatially located worldview, but rather to be a universally applicable way of acting. Of course, from a modern perspective, the environmental and social values that led to the Clearances do seem particular and local. They are part of a then-dominant version of English identity which focused around civilisation, taming the landscape, tidymindedness, and the belief that there really was very little that man could not do, if only he put his mind to it. The move to improvement, combined with the fashion for designed landscapes, provided a cultural context into which the wildness of the highlands was regarded with horror as an actual physical environment, and that wildness also assumed a moral character transferred onto the people themselves.

So alongside English portrayals of the Scottish highlands as backward, uncivilised, poor, wild and horrible, we can thus also find Gaelic poetry of the period emphasising the beauty of the Highland landscape. Its significance to the poet is not in doubt: the poet loves the meadows and grass fields of the Highlands; attention to the seasons and cycles of nature and closeness to the landscape are fundamental to the poet's life. There is no sense of separation from, or the desire to dominate the natural world - so often characteristic of both Protestant and Catholic Christianity. Identity for this poet is tied up with a deliberate affinity to the Highland landscape, just as English/lowland Scottish identity during this time is in part constituted by its denial, or at least an antipathy to raw nature, unadorned by obvious human efforts to control it. Perhaps Dr Johnson can be used to illustrate this point, from his account of his journey into the Highlands. On describing the hills west of Fort Augustus he noted: "An eye accustomed to flowery pastures and waving harvests is astonished and repelled by this wide extent of hopeless sterility. The appearance is that of matter incapable of form or usefulness, dismissed by nature from her care and disinherited of her favours, left in its original elemental state, or quickened only with one sullen power of useless vegetation" (Johnson and Boswell, 1984, p.60).

Conclusions

To conclude, this paper has tried to introduce the idea that, underlying our entire history and our identities over time is our relationship with Nature. This can be a very practical affinity to our own local environment, our 'home and hearth' which conditions our view of the world, especially in earlier times of limited mobility, as well as more fundamental attitudes to Nature and the place of humans within it. But for a variety of reasons the mainstream creators of history have largely ignored these local environmental identities.

The problem for the construction of identity is, however, that the strong affinity to the particular landscape in which one was brought up and, for most in the past, lived in all one's life, divides groups from others. One highland glen or Yorkshire dale is entirely, indeed definitively, different from the next, though to those of us taking the long view we will tend to focus on what appears, superficially, to unite them. The grand theories will always have their place, but it is time to acknowledge the differences that may have had far more impact on our predecessors than any officially inspired attempt to give them a common identity. It is also time to acknowledge that we all, consciously or subconsciously, are a product of our environment, and that that influences how we see ourselves and the rest of the world, whether or not in terms of periphery or core, urban or rural, as part of nature or separate.

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RIG-AND-FURROW IN SCOTLAND

STRAT HALLIDAY

Introduction

Rig-and-furrow is the most extensive archaeological monument that survives in the Scottish landscape. At its most spectacular, it clothes entire hillsides, and the sinuous ridges are often still up to 0.8m high, disposed in interwoven blocks or furlongs. Not all rig-and-furrow is so prominent, however, and in other cases it may be no more than isolated plots of shallow grooves.

Such relics of ancient land-use are usually confined to the margins of the modern landscape, and it is reasonable to suppose that they represent but a fragment of the land that was once cultivated in this way. To this end the depiction of rig-and-furrow on Roy's map (1747-55) is instructive. Prepared on the eve of the Improvements, it provides a schematic impression of swathes of interlocking and largely unenclosed blocks of rig throughout the lowland landscape. Visible evidence of this lost lowland landscape can often be found beneath old plantations, while traces of buried furrows are routinely revealed by cropmarks in the south and east of the country (Illus 1). It may be no exaggeration to suggest that the former extent of rig-and-furrow in Scotland was roughly the equivalent of the land now in arable or improved pasture, an area a little over 2 million hectares, some 25% of the total landmass.

Given the extent of rig-and-furrow, it is surprising how little attention the physical evidence of rig-systems has commanded. Historians and historical geographers have considered the available documentary and cartographic evidence, often in some detail, but there is a general dearth of relevant information until the Improvements were well underway in the 18th century. By then the agricultural systems that were being replaced were ancient, and the contemporary observers were often themselves 'Improvers', or at least in sympathy with the Improving movement, and deeply prejudiced against the earlier practices. From such sources, any discussion of the antiquity, origin and evolution of these practices is inevitably constrained, of occasion entering into the realms of speculation and theory. In effect, the study of rig-and-furrow in Scotland is an archaeological problem.

Horace Fairhurst, as with so many aspects of rural settlement, was amongst the first in Scotland to wrestle with the problems of recording the rigs on the ground, and rationalizing the physical evidence with the documentary record (1969, 157-8). Prior to the 1990s, however, only one study attempted to map the extent of rig-and-furrow at a regional scale. This was by Martin Parry, who examined the swathes of rig-and-furrow still surviving in the Lammermuirs to explore the concepts of marginality (1973). He mainly used aerial photographs, but in some instances he also measured the profiles of rigs in the field. However, reliable plans of rig-and-furrow systems dating from before the 1990s are few and far between. The Royal Commission on the Ancient and Historical Monuments of Scotland transcribed the systems at Lour and Old Thorneylee in Peeblesshire from aerial photographs (RCAHMS 1967, 359, fig. 309, 360-2, no. 767; 239-43, fig. 244), as did Fairhurst at Rosal in Sutherland (1969, 138, fig. 3), but these are notable exceptions.

The problems of mapping extensive field-systems should not be underestimated. In the 1930s, when the Royal Commission recorded most of the cultivation terraces on the Scottish side of the Cheviots, surveying them on the ground was simply beyond their means. This remained the case until Electronic Distance Measurers (EDM) became available in the 1980s. Between 1986 and 1988 EDMs were used to survey extensive landscapes in north-eastern Perthshire, amongst them rig-systems around the townships and farmsteads in the upper reaches of Glen Shee and Gleann Beag (RCAHMS 1990, 117, fig. 265; 137, fig. 278). Since then, landscape mapping has become a standard component of most surveys, and outline plans of rig-systems are now available from many parts of the country. Furthermore, a huge store of information across the whole of Scotland is provided by the collection of vertical aerial photographs held by the National Monuments Record of Scotland, supplemented since 1975 by the Royal Commission's own programme of oblique aerial photography.

With the concentration of the upstanding remains of rig-systems in the margins of the modern agricultural landscape, it is inevitable that recording has tended to focus on the uplands, out beyond the limits of the improved fields. This is where the most extensive rig-systems are still visible on the surface, and where sequences of different cultivation systems are most easily detected by survey. Before discussing the remains of rig-and-furrow any further, therefore, it is

necessary to consider briefly whether these systems are wholly representative, or whether they merely reflect land-use in the uplands. By the very nature of the fragmentary lowland remains this is a difficult question to answer conclusively, but where it has proved possible to make direct comparisons between the uplands and the lowlands, very similar patterns have emerged, both in terms of the character of the rigs – broad, narrow, high or low – and the sequences of cultivation practices that they exhibit. Furthermore, even where blocks of lowland rigs appear to be well-preserved, such as the broad high-backed rigs in the enclosed fields along the foot of the north-western flank of the Cleish Hills, Fife, it can often be shown that slighter traces of overlying rigs have in fact been ploughed away. In effect, the impact of cultivation in lowland fields has been selective, destroying the evidence of all but the most substantial rigs. Thus, the upland rig-systems not only appear to be reasonably representative, but in any case are the most complete source of archaeological evidence available for the study of rig.

The increasing effort that has been put into recording upland landscapes has unquestionably brought a huge expansion of recorded data. Some of this has been reviewed previously (Dixon 1994; Halliday 2001), but it is still appropriate to ask whether the additional knowledge is adding significantly to the perspective gleaned from the documentary and cartographic sources. To what extent can different types of rig be recognised? Do these types have any particular regional or chronological significance? And, furthermore, is this work revealing anything of the evolution and origin of ridged fields in Scotland?

Types of Rig

In answer to the first of these questions, survey carried out over the last twenty years has demonstrated beyond doubt that there is considerable variation in the character of rig-systems in different parts of the country. Their classification, however, tends to be impressionistic, principally because the rigs of individual plots can display a range of characteristics, varying in length, breadth, height and overall plan. As often as not, this variation merely reflects the local topography into which the rigs have been fitted, but it is also clear from the sequences of cultivation remains that have been recorded, that some of the variations are of chronological significance.

To date eight separate categories of rig-and-furrow have been identified. One – cord rig – is now generally ascribed a prehistoric date, although it is a form that also appears to have been employed in the early medieval period, if not later still.

1) Cord rig:

This term has been coined to describe a narrow type of cultivation ridge that is now generally considered to be of prehistoric date (but see below). The individual rigs are between 1m and 1.5m in breadth, typically averaging 1.3m in breadth, and they generally occur in small plots of between 0.02ha and 0.5ha in extent. Ploughmarks have been recovered from beneath several fields of cord rig in Northumberland, but it has not been conclusively demonstrated that cord rig is formed in the course of ploughing. Survey has revealed other evidence to suggest the rigs were cultivated by hand, and it is probable that the rigs were only raised after the field had been ploughed.

Cord rig was first identified in the Southern Uplands, and there is a greater concentration of examples here than anywhere else. Apart from the concentration of research into this area, the gentler slopes beyond the margins of the modern fields are not generally masked by blanket peat, a major advantage for ground and aerial survey (see for example RCAHMS 1998, 44-7). Elsewhere, excavation has exposed extensive plots of rigs buried beneath peat at Machrie North, Arran (Barber 1997, 107-9), and more recently along Achany Glen, south of Lairg in Sutherland (Carter 1995; McCullagh and Tipping 1998). On Arran the rigs were entirely hidden by the peat, but in the case of Achany Glen traces could still be detected on the surface. Other examples are now beginning to come to light in the north. In Perthshire, for instance, several plots were discovered at Pitcarmick in an area where the thin covering of peat had been burnt off in a moorland fire (RCAHMS 1990, 73, nos. 151.9 & 18). The discovery of further examples will largely depend upon the extent of aerial reconnaissance into the north and west and the conditions (lighting, vegetation growth and snow cover) under which it takes place.

2) Broad, high-backed, curvilinear rig:

The mainstay of this category is represented by the furlongs of sinuous reverse-S ridging that are familiar from English medieval field-systems (Illus 1 & 2). Nevertheless, a wide range of other forms is included, generally occurring where the layout of a rig-system is constrained by the topography. No absolute figures can be given for the height and breadth of the rigs, but most examples range from 7m to 10m in breadth and up to 0.8m in height. Some of the ploughed-out rig visible on aerial photographs, particularly in northern Fife, appears to be even broader, measuring up to 20m in breadth, but by the same token individual furlongs may include much narrower rigs, in some cases no more than 5m across. The practice of splitting earlier rigs, which is evident in some rig-systems, may account for some of the narrower reverse-S rig that has been

recorded. In some systems, particularly in the north-east, the furrows between the rigs appear broad and flat, while in others the profiles of the rigs appear to be triangular rather than rounded, but the significance of these forms is not known.

As in England, it is assumed that broad reverse-S or curvilinear rigs result from a specific set of cultivation practices, the height and profile building up as sods are turned inwards over successive seasons with a mouldboard plough. This was thought to be a slow process, taking place over many years, but experimental work now suggests that ploughing in this way will raise the height of a rig relatively quickly (Lerche 1986). The reverse-S plan relates to the way teams of anything between two and, in exceptional instances, twelve beasts were turned on the headland at

the end of each rig. The curve allowed the ploughman to turn his team off onto a relatively narrow headland, and yet still keep the plough biting into the soil to the very end of the rig (Fenton 1976, 31-5). Cord rig aside, rigs of this form are usually the earliest in any local sequence of cultivation remains, and are often overlain by rigs following roughly the same courses but defined by little more than shallow grooves.

The overall distribution of reverse-S rig extends widely along the eastern seaboard of Scotland, probably surviving most extensively in the hills of the Eastern Borders and the Lothians, where it has been strikingly preserved in the Cheviots and on the Lammermuirs. This area also contains the densest concentration of cultivation terraces, many of which have evidently evolved from ploughing blocks of rigs running along

Illus 1. Balgarvie, Perthshire (NO 147 262): these cropmarks have revealed a system of interlocking plots of broad reverse-S rig. Traces of slighter, intervening furrows can be seen on the left of the picture, indicating that the system has undergone some modification in the course of its use. Later drains can also be seen criss-crossing the earlier rigs.

Illus 2. Gairmuir, Berwickshire (NT 588 525): a typical furlong of broad reverse-S rig surviving in the foothills of the Lammermuirs. The modern farmstead towards the top of the picture evidently overlies the rigs, as do the circular sheepfolds top left and bottom right. At the latter, the terminals of some of the rigs have been straightened and extended up the slope out of the picture. Not all the rigs have been extended in this way and other photographs show that the alignments are dislocated to either side of the ruins of a farmstead that are visible immediately above the fold. Traces of grooving can also be seen on the crowns of several of the rigs.

the slope (see RCAHMS 1998, 40-42). The distribution also extends westwards into Clydesdale, eastern Ayrshire and the central belt, and northwards to the shores of the Moray Firth around Inverness. Systems of broad curvilinear rigs are found still further north in Sutherland, but whether any of the rigs they contain are truly reverse-S in plan has been obscured by subsequent phases of cultivation.

3) Broad, curvilinear grooving:

This form of strip cultivation is found extensively in eastern Scotland, but examples are also found amongst the field-systems that have been recorded in the west.

As the heading implies, the profiles of these rigs are almost flat, and they are simply defined by shallow grooves set from 5m to 8m apart. In plan, they vary considerably, often pinching together towards one end (see also the *Galloway-type* below). This feature gives such plots a distinctive form, accentuating the curves of the outermost rigs, which sweep in towards a headland that may extend for as little as a quarter of the overall breadth of the plot. Photographs taken under slanting sunlight sometimes reveal traces of a low spine extending along the centre of the rig, but such features are barely perceptible on the ground. Many of the plots are apparently unenclosed, or are only enclosed in the general sense of lying within a head-dyke, but this sort

of rig is also a feature of the turf-banked field-systems found extensively in southern Scotland.

Curvilinear grooving is also a feature of many furlongs of high-backed ridging, extending along the crests of the individual rigs, and adopting their reverse-S plan (Illus 2 & 6). So much so, that in some cases it superficially appears that the grooves are a feature of the high-backed rig. Close examination, however, often reveals that the grooves lie slightly eccentrically to the underlying rig, particularly where the rigs begin to turn at their ends. In other cases, where enclosed fields of curvilinear grooves overlie furlongs of reverse-S rig, the grooves may conform symmetrically to the rigs, but the turf bank enclosing them overlies the terminals of the high-backed rigs. These relationships clearly show that the grooving represents an independent episode of cultivation, though not at what chronological remove.

Since experimental work has shown that ploughing will raise the height of a rig relatively quickly (Lerche 1986), this type of rig was either deliberately cultivated with a flat profile, or else the strips were only cultivated on a limited number of occasions, perhaps as occasional intakes. On balance, the former is more likely, and this type of grooving, both on earlier high-backed rigs and off, is probably a relatively late form of ploughing, in the case of examples in Menstrie Glen, in the Ochils, dating from no earlier than the 18th century (RCAHMS 2001).
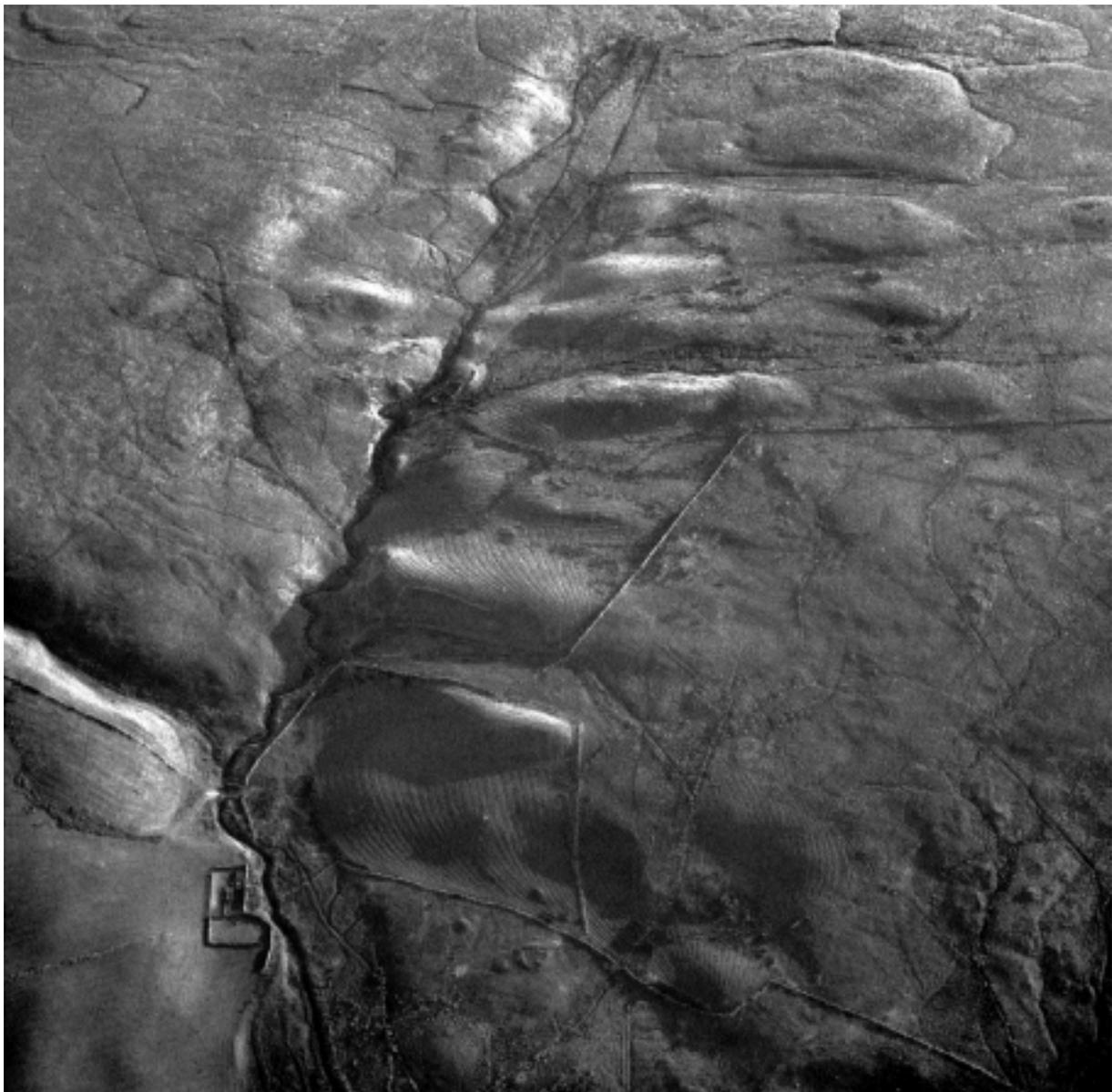
Illus 3. Pularyan, Wigtownshire (NX 139 684): this aerial photograph shows a series of plots of Galloway-type rig occupying terraces and knolls beside a burn gully. The typical pinching together of the rigs is clearly visible at the apex of the lower plots, and traces of medial grooves can be seen on the rigs in several places.

4) Narrow curvilinear rig:

Narrow forms of curvilinear ridging, in which the individual rigs range from 2m to 5m in breadth, are found widely throughout Scotland. Along the eastern seaboard such systems are often found overlying broad high-backed rigs, and some were almost certainly created by splitting earlier rigs. In Argyll, the central highlands and the far north, such systems are commonly found around deserted townships, and the distinctive Galloway-type discussed in the next section is also in effect a subset of this general category. In some cases, the rigs pinch together at the ends of a plot in a manner already described for the broad curvilinear grooving (above), and seen in its most extreme form in examples of the Galloway-type of rig-system. Many curvilinear rig-systems, however, do not display this feature, and in essence this group is a catch-all containing all the rigs that do not have the breadth and height of the high-backed broad rig-systems, but nor do they have the flat profiles of the curvilinear grooving. The sequences of cultivation remains that have been recorded in the east of the country consistently show that this form of rig is of relatively late date, at least in comparison with systems of high-backed reverse-S rigs. Indeed, the evidence from Menstrie Glen in the Ochils would suggest that they are mid-18th century in date (RCAHMS 2001). The picture is less clear in the north and west, but the occurrence of such systems around so many townships and farmsteads abandoned in the 18th and 19th centuries suggests that the majority of the visible rig is of a similar date.

5) Galloway-type curvilinear rig:

As the name suggests, the typical examples of this category are found in the south-west of Scotland. Characteristically, the rigs are relatively narrow, usually no more than 2m to 3m broad, and in plan they pinch in towards the apex of the plot, presenting a plan that is akin to a section cut through the layers of an onion (Illus 3). Although at first sight this type is restricted to Galloway and southern Ayrshire, the pinching that is so evident in their plan appears in less extreme form amongst other systems of narrow curvilinear rig and broader grooving (above).

One particular feature of these rigs in Galloway suggests that many of the examples of this type have been cultivated with hand tools rather than ploughs. In several instances there are hints of a shallow depression extending symmetrically along the crest of each rig, in this case suggesting construction in the manner of a lazy-bed (see below) rather than a later episode of cultivation. The use of hand tools may also be reflected in the way in which the rigs are often interwoven with old banks and small cairns dating from an earlier period of land-use, but without any sign of headlands where they run up to these obstructions. The case is circumstantial, however, and it is possible that the rigs pinch together at the ends to allow them to be ploughed without the necessity of a headland extending the overall breadth of the plot.

6) Straight rig and grooving:

The latest phases of arable agriculture in the recorded sequences all over Scotland invariably involve episodes of ploughing in relatively straight and narrow ridges (Illus 4 & 6). The breadth of the ridges varies, the broadest being up to 4m across, and in some cases the profiles are almost flat, separated by little more than shallow grooves. Indeed, some of the grooves are so straight and sharply defined as to give the impression that they have been drawn with a ruler and chiseled indiscriminately across any earlier fields or structures that lay in their way. This form is almost certainly a manifestation of Improvement. Not all the Improved rig is as starkly defined as this, but it stands out from the earlier cultivation remains by virtue of its regularity. The relatively straight grooving that occurs in geometric turf-banked fields in southern Scotland may date from before the Improvements, but this is again invariably at the end of a sequence of other cultivation remains.

7) Lazy-beds:

Rigs of this category have been constructed in a single operation with hand tools, thus contrasting with the gradual build-up of soil in a plough rig. The typical lazy-bed encountered in the course of survey is between 1m and 2m in breadth and appears to wriggle along its entire length (Illus 5). Where they were constructed on pasture, turves stripped from the intervening furrows were laid longitudinally to form two cheeks, and loose soil was piled in between. This accounts for the typical angular profile of so many of the beds that are now preserved in rough pasture, with sharply defined sides and a shallow groove in the crest where the soil has settled between the cheeks. On particularly thin soils, the beds may be spaced anything from 2m to 5m apart, the furrow virtually stripped of soil down to the bedrock. More often than not, the pattern of the beds shifted from year to year, but in some cases they were permanent features.

Lazy-beds are found in small garden plots throughout Scotland, but as an element of large agricultural systems they tend to occur most obviously in the north-western landscape, where the beds are found extensively on shallow peat and thin rocky soils. In many areas every scrap of ground appears to have been cultivated. As we have seen, however, there are hints that the Galloway-type rig-systems are also lazy-beds. Furthermore, close inspection of many of the rig-

Illus 4. Kirkland, Ayrshire (NX 249 929): straight rigs characterised by flat profiles and sharply cut furrows can be seen in the foreground of this photograph cutting across earlier plots of rigs and field-banks. The alignment of the rigs is dislocated to either side of the ruined building in the centre, indicating that the straight rigs probably supersede the abandonment of this farmstead.

systems recorded throughout Ayrshire, Bute, and Argyll, reveal extensive plots that also appear to have been constructed with hand tools rather than ploughed.

8) Water meadows:

This is the final category of ridged fields that should be briefly mentioned, if only to register their presence in Scotland. The creation of these irrigated meadows, which were designed to provide an early flush of grass after the winter, and crops of hay during the summer, is a feature of Improved agriculture. Usually found on haughlands, the surface of the meadow was formed into broad ridges, and water was led from the burn or river via a series of sluices and leats into channels extending along the crests of the ridges. Thus the

flooding of the meadows could be controlled. A recent survey by Iain Fraser (2001, 133) has noted well in excess of 150 documented examples, generally scattered up and down eastern Scotland and across into Lanarkshire and Galloway. These fields have often fallen victim to more recent ploughing, and very few now survive in anything approaching their original form or extent. If steps are not taken to conserve the few that are left, it is likely that even this handful will be removed.

Evolution of rig-and-furrow in Scotland

The previous section has sought to break the rig-systems down into categories based on the form of the

Illus 5. Staffa, Argyllshire (NM 325 354): the irregular character of the plots of lazy-beds can be seen in this photograph of Staffa, which shows the way in which these hand-cultivated rigs are often woven in amongst rock outcrops and other topographical features.

rigs they contain. However, the majority of rig-systems are patently multi-period, preserving sequences of rigs that display all manner of variation in height, breadth and plan. Inevitably, the distinctions between some of the types become blurred in these sequences, but it is equally clear that various trends can be recognised, particularly with respect to the later stages of these sequences. For instance, it can now be demonstrated in the field that high-backed, reverse-S rig is succeeded by narrower, lower and straighter forms, although many such changes probably relate to a relatively short period when agricultural improvements were brought in during the 18th and 19th centuries (Illus 6). This is certainly the message that has emerged from a recent analysis of a well-documented landscape in Menstrie Glen, on the north side of the Forth valley in the Ochils,

where high-backed, reverse-S rigs were still in use in the mid-18th century (RCAHMS 2001).

In parallel with the resolution of the latest stages in the evolution of Scottish rig-systems, work on prehistoric field-systems has also shown that ridged cultivation surfaces have a very long history in Scotland (Topping 1989; Halliday 1993, 70-8; RCAHMS 1998, 44-7). Not only has cord rig been recovered from beneath several Roman earthworks in Northumberland (e.g. Gillam, Harrison and Newman 1973), including the remarkable field-system overlain by the temporary camp at Greenlea Lough (RCHME 1995, 104-5), but slightly broader rigs have been discovered beneath a Bronze Age barrow in Perthshire. In the case of the latter, at North Mains in Strathallan, the low rigs were about 2m

in breadth, but the overall character of the plot is unknown (Barclay 1990). Early plots of ridging have also been excavated at Calanais, on the island of Lewis (Ashmore 1995, 30), while others found beneath peat in Ireland are thought to date from at least the 2nd millennium BC (e.g. Caulfield 1978, 137, 140-2).

In view of this compelling evidence for prehistoric ridged fields, it is necessary to question the origin of the medieval and post-medieval rig-systems in Scotland. Do they stem from cultivation practices introduced during the medieval period? Or is there a direct transmission from more ancient practices? In the midlands of England, the origin of the classic reverse-S rig of medieval open fields has been tentatively traced back to a reorganisation of the landscape into strips in about AD 700-800, towards the end of the middle Saxon period (Hall 1994, 99). Not everyone would accept such an early origin (e.g. Welch 1985, 20-1; Astill and Grant 1988, 76-7; Astill and Langdon 1997, 200), even though most would agree a late Saxon date, pointing to a handful of examples of 11th-century rigs recovered by excavation, and the terminology of late 10th-century charters (Astill and Grant 1988, 73-4, Table 4.1; Astill and Langdon 1997, 201).

Most of Lothian lay under Northumbrian control from the beginning of the 7th century until the late 10th century, raising the possibility that a reorganization of the Saxon landscape of southern Britain may equally have been visited upon south-east Scotland. This, of course, assumes not only that such a reorganization of the landscape is manifested in the furlongs of reverse-S rig-and-furrow, but also that by implication these rigs are cultural fossils. It is equally possible, however, that this form of rig results from a technological innovation, in which case it could have spread far more widely, well beyond the areas of sustained Anglian penetration.

There is not room here to debate this question of culture as against technology, but it is of some importance in the overall discussion of the origins of medieval rig-and-furrow. While some elements of the way in which land was allotted may well be cultural, giving rise to a system in which a tenant's strips or rigs were dispersed around the arable land of a township, the division into long strips rather than rectangular or square plots may equally stem from a technological innovation, such as the introduction of a new implement or an improved technique.

Apart from the introduction of the reverse-S rigs themselves, there is little evidence of any particular technological change during this period. As we have seen, the creation of ridges in fields has a long ancestry in the prehistoric period, albeit probably with hand tools rather than a plough. In addition, there are also now several instances in England and Wales of rigs some 4m in breadth that probably date from the 11th

century or before. Ploughs equipped with mouldboards are assumed to be responsible for the raising of these broader rigs, although, other than the rig itself, there is no evidence to confirm that this was the case. It has been claimed that mouldboards were first used to turn the sod in late Roman times, largely on the strength of a handful of asymmetric iron shares (see discussion in Manning 1964), but the earliest evidence recovered by excavation is provided by the earlier of two ploughsoils from Whithorn Priory, in Galloway, and dates from the late-6th or 7th century.

Instances of soils that have been visibly inverted by a plough with a mouldboard are scarce. For a long time the only possible example was Site XX at Gwithian, which dates from between the 6th and the 9th centuries (Fowler and Thomas 1962), but Scotland has now provided three. The first to be identified, overlooking Lunan Bay in Angus, is undated, but it was thought by the excavator to date from before the 12th century (Pollock 1985, 389-3). Both the others are contained within the stratified sequence of deposits at Whithorn (Hill and Kucharski 1990). The inversion of the soil was most clearly identifiable in the upper of the two soils and dates to the mid-9th century, but numerous plough-pebbles were found throughout both ploughsoils. In Scotland these distinctive pebbles, which are worn smooth on one side, are most commonly found in the south-east of the country, but a scatter of examples is known elsewhere (Fenton 1964, 276-9; 1999, 179-80). Previously thought to be a later innovation, they were used to stud the sole of the plough on the opposite side to the mouldboard. This is conventionally explained as a device to reduce wear on the sole, but it seems more likely that the pebbles were intended to balance the plough, increasing friction on the one side to counteract the drag of the mouldboard on the other.

Even if the other plough-pebbles from Scotland are not of such early date, the evidence from Whithorn is important. It not only shows that a type of plough that was capable of raising rigs was available throughout the second half of the 1st millennium AD, but its monastic association points to a likely route by which this technology may have spread across Scotland at that time. It should not perhaps come as any great surprise that one of the other plough-pebbles from elsewhere in Scotland should come from the early medieval monastic site at St Blanes, Bute (Fenton 1964, 276), even though in this case the stratigraphic context is quite unknown.

In view of these various strands of evidence – a tradition of ridged field surfaces, a plough capable of raising rigs, and a mechanism whereby such technological innovations could be widely spread – it is likely that ploughs were used to form rigs in Scotland

Illus 6. Stewarton Cottage, Peeblesshire (NT 221 460): this aerial photograph reveals the complex character of the sequences of cultivation remains that are often encountered in the field. Apart from the small circular features that have formed around feeding troughs, the most recent cultivation comprises the straight furrows that cut obliquely across earlier reverse-S rigs on the right of the picture. These earlier rigs display evidence of both curvilinear grooving and broad reverse-S rig. That they represent two separate episodes of cultivation can be seen centre left, where a large sod-built stell, the snow picking out a concentric turf-stripping halo, overlies the broader snow-filled furrows, but is cut by two of the

from at least the middle of the 1st millennium AD. No examples of this hypothetical form of plough ridging have been knowingly recorded, although the use of cord rig evidently persisted in northern and western Scotland, in Achany Glen, Sutherland, possibly until as late as 1400 (Carter 1998, 157-8). Similar field surfaces dating from the 11th century have also been recorded in Denmark (Ramskou 1981; Lerche 1981). In southern Britain, the handful of examples of pre-Norman rigs that have been identified are rather broader than cord rig, and appear to be of the order of 4m in breadth. Even there, however, it is far from clear whether these rigs are directly ancestral to the reverse-

S rigs of the open field-systems, or whether the latter were an innovation drawn from elsewhere. In Scotland there is no evidence to suggest that high-backed reverse-S rig is anything other than an introduction, as we have seen, perhaps arriving from Northumbria before the 11th century, but otherwise brought in with the Anglo-Normans at the beginning of the 12th century. The term *reia* or rig is used in 12th- and 13th-centuries documents (Dixon 1994, 30), and it is reasonable to suppose that high-backed reverse-S rig was the standard form in the east of the country from at least that period onwards.

On the assumption that this form of rig is an introduction, then its distribution signifies more than simply the extent of its use in Scotland. In effect, its distribution reflects a pattern of destruction, which terminated further evolution of any native system of ridged cultivation in eastern Scotland. In this light, the contrasting character of rig-systems in western Scotland takes on greater significance, for here any native system of ridging may have continued to develop throughout the medieval period, no doubt influenced by new practices introduced into the east. Even as late as the 18th century, practices that owed their origin to far more ancient systems of cultivation may have survived in use. Potentially, at least, the ridged cultivation remains of the north and west of Scotland may contain a reservoir of evidence of these earlier practices, albeit in highly evolved forms. Moreover, it is in these same areas – in Achany Glen in the north and at Machrie North, Arran in the west – that radiocarbon dates indicate that cord rig continued to be used into the early medieval period. The dates come from the basal peat overlying the rigs, and in both cases it has been argued that the cessation of cultivation was closely followed by the onset of peat growth (Carter 1998, 157-8).

Deriving some of these western rig-types – particularly the distinctive Galloway-type – directly from cord rig, or perhaps some broader form of indigenous ridging, is certainly an attractive hypothesis. It raises the question of the significance of the evidence for extensive hand cultivation up and down the west coast, not simply in the north-west and the Outer Isles, but also throughout Argyll, Ayrshire and Galloway. Rather more than a manifestation of relatively late socio-economic factors, perhaps the use of hand tools indicates more deeply bedded cultural preferences. However, such a hypothesis is not without its problems. If reverse-S rig is a cultural fossil of Anglo-Norman feudalism, it should also be present in Galloway, and yet no convincing examples have been recorded to date, neither as upstanding remains on the hills nor as cropmarks in the lowlands. Galloway only reluctantly took on the mantle of Anglo-Norman feudalism, and while the Galwegians may have been subdued by the late 13th century, they were perhaps never acculturated in quite the same way as the population in other parts of Scotland.

Conclusions

This survey of rig-and-furrow in Scotland has deliberately avoided documentary evidence for ridging, its socio-economic context, and its place in agricultural practice (but see Dixon 1994). Instead, it has simply focused on the physical remains that have been recorded on the ground and by oblique aerial photography over the last twenty years. This work is starting to bear fruit, and we can begin to answer the questions that were posed earlier. It is possible to distinguish various categories of rig, even if the definitions at the edges of each category are blurred. Furthermore, these categories appear to exhibit some regional significance.

The problem of dating any individual furlong or system of rig-and-furrow in Scotland has yet to be resolved. By far the majority of the rig that survives was probably cultivated in the 18th and 19th centuries, and it is difficult to demonstrate that any particular system was abandoned before the 18th century. The rig cut by the construction of the wall enclosing Holyrood Park in the mid-16th century is not so much unusual, as almost unique. Nevertheless, the relative sequences that have been recorded offer several opportunities where judicious excavation may allow a *terminus post quem* or *ante quem* to be established for some of the rig-systems. It is important that these opportunities are pursued if the full complexity of the medieval landscape and the history of its use are to be understood.

The arguments presented for the evolution of some types of rig from prehistoric stock are fraught with problems and uncertainties. Not least of these are the chronological problems that have been alluded to. Even with the latest of the radiocarbon dates from Achany Glen, a huge chronological gap exists between the cord rig and these later rig-systems. Filling this gap and testing such a hypothesis offers one of the key challenges for the next ten years of excavation and survey.

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NOT ANOTHER ONE!
Land use change, forestry and medieval or
later rural settlement in Scotland

TIM YARNELL

Introduction

This short paper outlines some of the issues relating to the conservation of medieval or later rural settlement (MoLRS) in Scotland. The issues considered here mainly relate to forestry practice but include matters concerned with broader forestry policy and are not restricted to the growing and harvesting of trees. Site identification, importance, ongoing conservation and interpretation are also discussed.

Background

Since the days of Horace Fairhurst, 20th century century forestry practice and MoLRS have been closely linked. Perhaps too closely on occasion! The troubled relationship between forestry and archaeology has been well documented (e.g. Barclay 1992, Shepherd 1992, Swanson 1993) and these pages are not the place to dwell on that. It is sufficient to note that some of the activities associated with woodland establishment, routine management operations and final harvesting can have a severe impact on archaeological features, deposits and their setting.

A hundred years ago, tree cover in Scotland was around 5%. Today it is nearer 17%. We can be fairly certain that much of the land that was planted over the last century will have previously been utilised in the MoLRS period. Indeed many houses and structures were in use until "the forestry came" after the Second World War. It is this modern aspect which provides the first challenge when considering the conservation of various features. The "not another one" of the title refers to the frequent exclamations from people who always seem to recall visiting their grandmother in something "just like this" - if not at the site under consideration, then somewhere very similar. Even if we are considering sites which were abandoned or cleared, 150 years or more ago, the frequency with which they occur in the landscape does create difficulties when formulating a coherent and consistent conservation strategy.

In an era where remains associated with the Second World War are scheduled as monuments of national importance, the recent date of many sites is not a major issue. There are however other considerations of importance which must accompany any decision-making process about the future of a site. The widely accepted considerations are; survival, period/date, group value, rarity, situation, multi/single period, fragility and documentation and their relevance to MOLRS conservation has been discussed previously (Hingley, 1993). Of these considerations MoLRS rarity is not taken by many to be a major restraint on landuse change.

There are of course many other factors beyond those listed above, which should be taken into account when determining the future for MoLRS in the landscape. These include the relationship of MoLRS to the wider historic landscape, community associations with the past and the ability of specific sites and locations to contribute to people's enjoyment of the heritage. How these relate to forestry in the early years of the 21st century is outlined below.

New Planting

Objectives for Scotland's woods and forests are set out in "Forests for Scotland - The Scottish Forestry Strategy" (Scottish Executive 2000). These include a vision of increasing the woodland and forest cover in Scotland to around 25% of the land area over the next fifty years. That this expansion needs to take account of the historic environment is also recognised. (Scottish Executive 2000, 33). The majority of expansion will be supported by the Woodland Grant Scheme and associated initiatives funded by the Forestry Commission. New planting is expected to meet the United Kingdom Forestry Standard (UKFS) which sets out the Government approach to sustainable forestry (Forestry Commission 1998a). Conservation of heritage features and landscape quality are recognised criteria for sustainable forest management (ibid. p.18).

Although the establishment of new woodland cover in Scotland is below the rates of the 1980s the current amount of around 10,000 hectares a year obviously already has the potential to have an adverse impact on MoLRS and other elements of the historic environment. It is worth noting that not all new planting proposals are for large areas of non-native species and not all planting is achieved through intensive ground preparation involving ploughing and draining. Proposals for expanding tree cover through natural regeneration involving limited ground preparation are more widespread now than in the period 1920-90 (Yarnell, 1993).

The first step in the conservation process is site identification. Over the last decade improvements in recording and data handling have been particularly useful. The use of Geographic Information Systems (GIS) and the First Edition Survey Project (FESP) enable data about known and recorded sites to be made widely available. Of course this is not a complete record and there is still a need for fieldwork. Strategic survey work is still carried out in some areas (Dixon 1993) and some of this has proved invaluable in planning new areas of woodland cover which meet a variety of objectives e.g. at Mar Lodge in the Cairngorms (RCAHMS 1996). Other work takes place on a site by site basis either at the request of the local authority archaeologist or as part of an Environmental Impact Assessment.

Once features of interest are identified, the impact of any proposal has to be assessed against a wide range of criteria covering landscape, nature conservation, soil, water and archaeology. (Forestry Commission 1994, 1990, 1998b, 1993, 1995). Focussing on the archaeology, a wide range of features are normally present and can cover extensive areas. Buildings, corn drying kilns, boundary dykes, areas of cultivation, enclosed grazing, and shieling grounds. The list could go on. Individual features can be relatively easily protected, at least from the initial phases of woodland establishment. It is recognised though that much of the value of MoLRS lies in the whole complex, including the often extensive field systems. At the MoLRS management and preservation seminar a decade ago it was recognised that it was "…important that defensible criteria for the selection of field systems for preservation are developed for those settlements where the archaeologist wishes to protect the whole settlement and agricultural complex." (Hingley, 1993 p. 58). The potential and significance of field system remains has featured prominently in all deliberations on MoLRS conservation (e.g. Foster and Hingley 1994). Fortunately these deliberations have recently been taken forward and the publication of "Guidelines for the Preservation of Areas of Rig and Furrow in Scotland" (Barber 2001) clearly sets out many of the issues and makes several recommendations. It will be interesting to observe how these recommendations will be put into practice and whether they find widespread acceptance.

The impact of trees themselves on the rigged landscape may in many instances be limited to obscuring their overall visual characteristics, providing minimal ground preparation occurs. Localised visual amenity may be maintained through spacing of planting and the use of open areas within woodland. The recognition and explanation of regionally distinctive variants (Halliday 2001, this volume) helps with ascertaining

rarity. At the larger scale, conservation of field and wider agricultural systems may be informed by analysis of the Historic Landuse Assessment project (HLA) as it matures and extends its coverage across Scotland (Dixon et al 1999).

It is important to remember that much of what is visible, and has archaeological potential in the landscape, owes a great deal to the continued presence of grazing. In the longer term removal of stock will lead to the arrival of scrub and bracken cover which may over time have a similar impact to some of the natural regeneration schemes previously mentioned. Unlike the archaeology of earlier periods many MoLRS sites will not previously have been subject to the impacts of the expansion and contraction of woodland cover. Though of course earlier archaeology will itself have been affected by MoLRS.

Existing Woodland

This section is based on the experience of the author working with Forest Enterprise the executive agency of the Forestry Commission responsible for managing the nationally owned forests. Some of the issues that are relevant for conserving MoLRS remains in woodland are similar to those for new planting e.g. identification and establishing importance. The locations of some MoLRS sites can be identified through the work of FESP and other projects. However, there are others, which although known to have existed from documentary sources, their location remains uncertain. There are others that just appear when located by harvesting squads. The use of information from early edition maps is only the start of the process. Information has to be validated in the field and of course sites often cover a larger area and contain many more features than are depicted on a map.

Many tree-covered sites were planted in an era where it was regarded as vital not to waste any plantable ground. It is not uncommon to find buildings standing to eaves height which contain rows of trees. Doing nothing on a tree-covered site is not generally a recommended conservation option. Many trees will eventually fall over or suffer windthrow, the effects of which can be catastrophic on structures and archaeological deposits. If a site is adequately mapped and features marked out, carefully managed harvesting operations can be carried out which have little impact on the surviving structures. Other features do come to light during operations and it is normally possible to ensure that those which are significant, do not come to harm.

Of course when these sites were planted, generally between forty and fifty years ago, it was assumed that

exactly the same area would be restocked. Indeed a large amount of financial planning was based on this assumption. The situation has now changed and restocking is part of a design planning process, which is subject to the same consideration of conservation values as new planting: water, soil etc, listed above. (Forestry Commission 1998c). Decisions for each location are subject to individual circumstances - each site on its merits- but generally settlement nuclei and buildings are not restocked. Associated pasture or previously cultivated land and field systems will normally be restocked having already been ploughed and ripped. Some larger areas may be left open, especially if a site is being presented to the public.

Presenting information on the historic environment is an important part of Forestry Commission activities, but with the limited resources available it is impossible to present every site. There are scores on FC land some in especially remote locations. MoLRS do have strong cultural associations, particularly those that were subject to the clearances. Informative presentation, without straying into area of myth or embellishment, is not always easy. These difficulties have previously been highlighted in the case of Rosal, Sutherland (Mackay, 1993). This site, which was saved from being completely planted over in the 1960s, has now been the subject of a revised presentation with considerably more input from archaeologists than earlier efforts. The site at Innimore, Morvern, was not spared the efforts of foresters ensuring that all ground was planted and at the time for harvesting a large effort was required to uncover the site. Thankfully operators of modern harvesting machinery are highly skilled and standing structures are rarely damaged by the removal of trees planted within or close to them. The next stage of clearing away the harvesting debris and then putting in walkways across uneven ground consumed considerable resources of both time and money. However, the effort is worthwhile and future visitors will be able to appreciate the layout of the township and some of the remaining structures.

The maintenance of structural remains brings its own special challenges, not least the concern for safety. Are all buildings structurally sound above 1.4 metres? How much vegetation cover can be allowed to remain on the tops of the wall? What materials are appropriate to use in consolidation? Are those tree roots in that wall holding it together or ripping it apart?

In most cases it is possible to use tree surgery techniques to reduce the risk from windthrow posed by trees growing from standing structures. The continuing presence of trees on and around many archaeological sites is often the subject of vigorous debate. In many locations the presence of trees can be aesthetically pleasing and many people enjoy visiting a "romantic ruin". Providing they are windfirm there is no immediate necessity to remove mature trees from many locations, as most of the damage to deposits caused by root activity will already have been done. This aesthetic question is important and the emotional response to monuments should not be overlooked by those responsible for conservation strategies. Providing the integrity of the archaeological structures and deposits is not compromised, the presence of trees can add to the feeling of abandonment, mystery and stillness which many people expect to encounter at MoLRS sites, perhaps more so than at other monuments. Of course these sites were when in use extremely busy places. It is sometimes difficult to convey a sense of this former activity to visitors. At Rosal this has been attempted by using information panels depicting a wide range of activities and a narrative text led as if spoken by former tenants. Hopefully this is an improvement on the earlier presentations of this site.

There is one aspect of the life of those who lived in medieval or later rural settlement where Forestry Commission interest is especially appropriate. This is of course the medieval woodland resource. Wood was particularly important as a material for construction e.g. for crucks, charcoal production, and as shelter for stock (Smout and Watson 1997). How far grazing in woodland was part of a regularised "wood pasture" system is an area of enquiry where much work remains to be done particularly in upland areas. However, there are a number of locations where the links between people and woodland management are being included in site interpretation and forest trails e.g. Sunart, Lochaber; Leny Woods, Callander and Glen Nant, Argyll. One extremely welcome feature of woodland history is the involvement of local groups and societies in field survey and documentary research. An excellent example of this is the work of the Sunart Oakwoods Research Group (Kirby et al. 2001). Here a combination of local knowledge and enthusiasm, linked to some specialist external input e.g. dendrochronology has opened up a wide range of future lines of enquiry.

Future Challenges

Changes in Forestry Policy mean that we have come a long way since the days when Horace Fairhurst had to argue to prevent Rosal from being completely planted over. But we can only begin to protect what we know and there is still much to do in locating sites, particularly those that have been planted over. I think we are only beginning to understand the relationship between the people who lived and worked in the MoLRS landscape and the woodland resource of their time. More can be done in this area especially through

involving people from other disciplines. The work of the Scottish Woodland History Discussion Group is an extremely welcome development. Changes in agricultural practice may pose just as great a threat as forestry to the visibility of many features in the landscape, and even direct damage in some instances. Greater links with people undertaking documentary researches would assist in understanding what happened where, and who lived when. The involvement of a wide range of people in MoLRS research is hopefully going to increase. Local history societies, family genealogists, archaeological groups, botanists and ecologists are all making an important

contribution now and can continue to do so. Many of the people involved might regard themselves as "amateur" but apart from the fact that most of them receive no remuneration for their efforts, their work is often of the highest calibre. It is possible that the recent nature of MoLRS will allow real people to be linked to remains in a way which may be used to lead a wider audience towards an appreciation of the historic environment as a whole. Moves in that direction should be welcomed and encouraged.

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