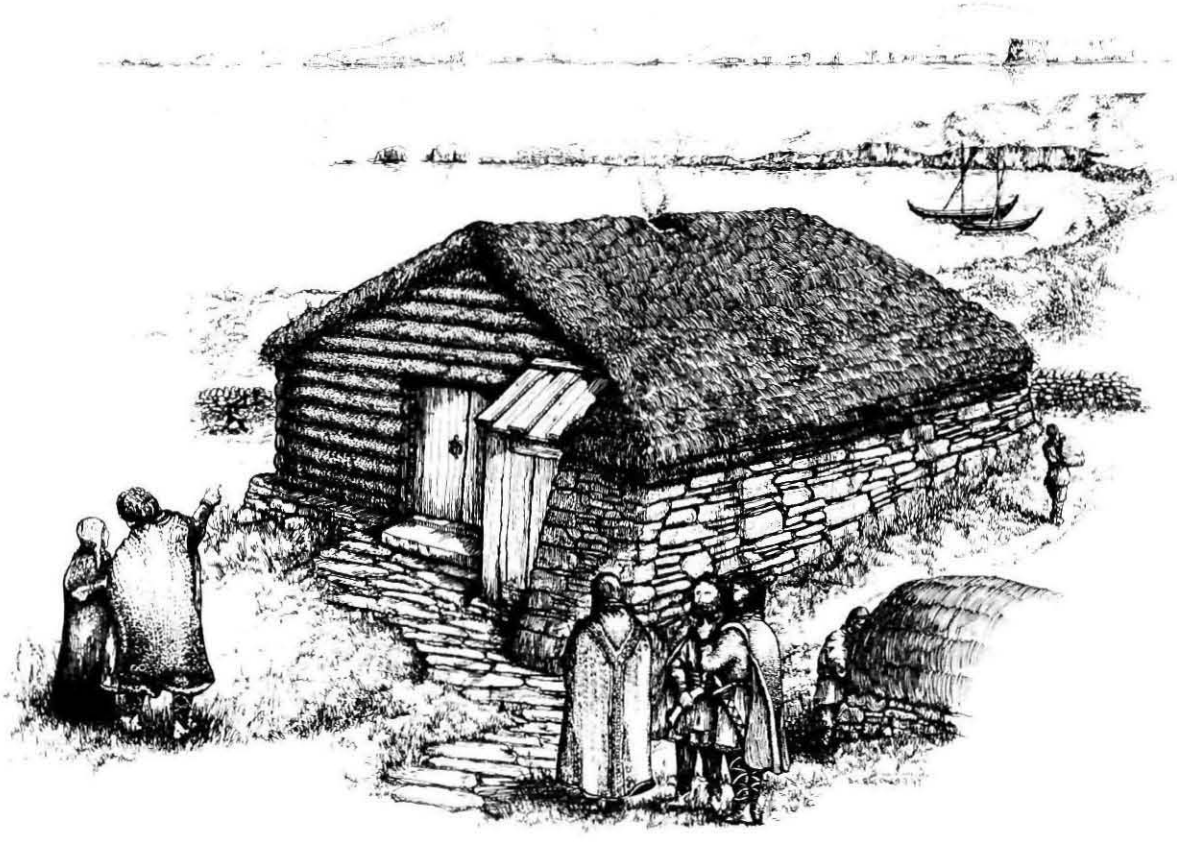
THE BIGGINGS, PAPA STOUR, SHETLAND

BARBARA E CRAWFORD & BEVERLEY BALLIN SMITH

Dedicated to
the Scott family at the Biggings
and
in memory of Alex



Frontispiece: Reconstruction of the events at Uphouse, Papa Stour, Easter 1299 (by Dennis Shepherd)

THE BIGGINGS, PAPA STOUR, SHETLAND

THE HISTORY AND EXCAVATION OF A ROYAL NORWEGIAN FARM

BARBARA E CRAWFORD & BEVERLEY BALLIN SMITH

with

Lyn Blackmore, Paul C Buckland, Simon Buttler, the late Camilla Dickson,
Kevin J Edwards, Carole Morris, Anthony Newton, Sonia O'Connor,
Penelope Walton Rogers, Andrea Smith, Catherine Smith,
Hans-Georg Stephan, Birthe Weber, Graeme Whittington & Robert Will

and contributions by

JW Allen, Torben Ballin, Donal Bateson, Helen Bennett, Gordon Cook, RMM Crawford,
AJG Crawshaw, Andrew Dugmore, Alexander Fenton, Christopher Harris,
Julian Henderson, John Hirst, Denys Pringle, James Rackham,
Paul Wilthew and F Woodward

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Barbara E Crawford
St Andrews, New Year 1998

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ABBREVIATIONS

Bannatyne Misc	The Bannatyne Miscellany (Bannatyne Club, 1827-55)
Cleasby-Vigfusson	Icelandic-English Dictionary, 2nd edition with a supplement by Sir William Craigie (1957)
DN	*Diplomatarium Norvegicum* (Kristiania, 1849-1919)
ES	*Early Sources of Scottish History, AD 500-1286*, AO Anderson (1922, 1990), 2 vols.
ER	*The Exchequer Rolls of Scotland*, ed J Stuart and others (Edinburgh, 1878-1908).
Hakon's Saga	*The Saga of Hakon and a fragment of the Saga of Magnus*. Icelandic Sagas IV trans GW Dasent (Rolls Series, 1894).
KL	*Kulturhistorisk Leksikon for Nordisk Middelalder*. i-xxii (Copenhagen, 1956-78)
NBL	*Norsk Biografisk Leksikon*
NGL	*Norges Gamle Love indtil 1387*. 5 vols. Udgivne ved R Keyser av PA Munch (1846-1895).
Orkney Recs	*Records of the Earldom of Orkney* ed JS Clouston (SHS, 1914)
Orkney-Shetland Recs	*Orkney and Shetland Records*. ed AW Johnston and others (Viking Society, London, 1907-42)
OS	*Orkneyinga Saga*
OSS	*Orkney and Shetland Sasines*
RPC	*Register of the Privy Council* ed J Burton and others (Edinburgh, 1908-)
RMS	*Registraum Magni Sigilli Regum Scottorum* ed JM Thomson and others (Edinburgh, 1877-)
RN	*Registra Norvegica I (1989) - VI (1993)* (Oslo, Riksarkivet. NHKI)
RPC	*Register of the Privy Council of Scotland* (ed JH Burton and others, 1877-)
RSS	*Registrum Secreti Sigilli Regum Scottorum* ed M Livingstone and others (Edinburgh, 1908-)
Scone Liber	*Liber Ecclesiae de Scone* (Bannatyne and Maitland Clubs, 1843)
SA	Shetland Archives
SC	Lerwick Sheriff Court, Misc Papers, in SA
SRO	Scottish Record Office
SRS	Scottish Record Society

FOREWORD

Alexander Fenton

Lawrence Williamson of Mid Yell (Johnson 1971) would have been delighted with this book. Though his main love was for his ancestral Fetlar and for Mid Yell, he would have found this story of Papa Stour very much to his taste. He had a many-sided approach to the recording of tradition, through language folk memory and genealogy and he quested after new ways of getting at the history of the past.

But he did not have the trained skills of the authors of this book. They are more than competent in documentary and place-name analysis, in the application of archaeological techniques and in the interpretation of the evidence from each. It was the Document of 1299 that sparked off Barbara Crawford's interest in Papa Stour, for Thorwald Thoressen (the Lord Tirval of folk tradition) and the strong-minded Ragnhild met in a room called the *stofa* on the duke's farm there. It was hoped that this building–and perhaps the very room–could be located and investigated archaeologically at 'Da Biggins'. There followed twenty years of endeavour by Dr Crawford, in the course of which she and Beverley Ballin Smith have left nothing unexamined. The book is an exemplar of thoroughness, and all possible linguistic, historical, architectural and archaeological resources of the Scandinavian world have been ransacked and put under the microscope in order to show the role of the Biggings within Papa Stour and of Papa Stour within Shetland and of Shetland within Scandinavia. There was a time, as the book makes clear, when this little island played a very prominent role in the northern universe.

It is for me a strange experience to read this book. When I carried out field research in Papa Stour in the spring of 1967, the island made a tremendous impression on me. Its settlement pattern, ways of life and speech, the sea and the sky and the birds, blended into a satisfying whole, which the people of the past must have felt too when they were not bickering over levels of rents and ownership of pieces of property. My own recordings have been largely published (Fenton 1978; 1997). They are concerned with the recent past, and with ways of existence in the course of rapid change under the influence of a modern world. Tools and equipment, buildings, food, terminology, sayings and guddicks (riddles) and much more were examined and their states of use or disuse were pointers to the past as well as to times to come.

Many of the techniques and practices then recorded have no doubt been familiar to the inhabitants for long centuries and such recording helps to lift the curtain on the way the ordinary folk of the island went about their business, leaving their superiors to get on with their wrangling. There is so little to be found in early documents about everyday life, that the reference to Thorwald's meeting with Ragnhild in the *stofa* in 1299 is a rare glimmer of historical light about a particular building of its time, now put into its proper perspective as a feature of the landscape of Shetland in the Middle Ages and early modern period. But the writers of this book on Papa Stour have brought together, in great breadth and depth, as a piece of supreme detective work, a concentrated background history of the island that will give it a permanent place in the world of scholarship, and will set a pattern for the future study of island communities.

INTRODUCTION
PAPA STOUR - THE PROJECT

Barbara E Crawford

BACKGROUND TO THE RESEARCH PROJECT

In my doctoral thesis (Crawford 1971), which focused on the earls of Orkney-Caithness and their relationship with the kings of Norway and Scotland from 1150 to 1470, Shetland was relegated to a General Appendix. The reason for this was not the unimportance of Shetland during this period, but the fact that it did not form part of the earldom of Orkney from 1195 to the end of Norwegian rule. Shetland's history diverged from the earldom to the south in many respects, and it had its own individual development, the main features of which I sketched out in that Appendix: the links with Norway and Faeroe, arising out of administrative circumstances and the way it was governed, the Sinclair family's struggle for control against royal governors, the events of 1468-9 and the way in which Shetland passed to the Scottish crown. In particular I commented on the events which occurred on the island of Papa Stour in 1299 and which are related in the oldest document known to have been written in Orkney or Shetland (*ibid*, 356). It was clear to me that this was a highly significant source of evidence, about many aspects of life in one of the colonial communities which had been established by the Vikings in the islands of the North Atlantic. I have since then studied some of these aspects and published articles attempting to elucidate the events, the people, and their society which is revealed to us in such illuminating, if puzzling detail in that document (Crawford 1979; 1983; 1984a; 1984b; 1985a; 1991; 1992; 1996). Further analysis is included below (**4**) as part of the historical background to the archaeological report, but there is no doubt more to be drawn out of the 1299 document, and it will continue to inspire future historians with further illuminating thoughts and ideas about Norse society in Shetland in the Middle Ages.

The most significant and long-term research project which has grown out of that interest in the 1299 document is the excavation of the Norse and later house site at the Biggings on the island of Papa Stour, which I believe can be shown to be the particular building (ON *stofa*) referred to in 1299, as the place where Thorvald Thoresson had his meeting with Ragnhild Simunsdatter when she accused him of improper financial conduct (Frontispiece). There was no expectation whatsoever that a wooden building would be found which might be interpretable as the *stofa* of that meeting. My understanding of what was involved in recognising such a building only developed as I struggled to interpret the excavated evidence. The discovery of our wooden building was due primarily to good luck, with a little good management concerning the right choice of site.

THE MULTI-DISCIPLINARY APPROACH

It was a personal research ambition from the very beginning that archaeology would be a co-ordinated part of a multi-disciplinary project. 'Inter-disciplinary' studies were only starting to become fashionable in research projects in the 1970s. The incorporation of different sources of evidence is an ideal which is never an easy attainment, and it is rarely achieved to the satisfaction of the practitioners of the different disciplines. Inevitably the emphasis is laid unevenly on one source of information rather than another according to the main research interests of the project leader; the ability to incorporate the widely-diverging pieces of information into a coherent analysis of site or period is a testing intellectual exercise. In the Biggings research project the 1299 document was always the inspirational source with its wide-ranging historical information. However, the unusually specific information about the location of a royal farm on Papa Stour was the stimulus to embarking on the archaeological half of the project. The document provided the historical evidence which archaeological discovery might be able to supplement and any archaeological evidence recovered would have the extra dimension of being associated with historically-recorded figures and in particular members of the royal Norwegian dynasty. As described above, my doctoral research (Crawford 1971) had been entirely concerned with the

historical connections of the earls of Orkney-Caithness with the kings of Norway and Scotland from 1150-1470 and my ensuing research priorities were to develop this study of the Northern Isles in this period in a more archaeological direction. Archaeological evidence from the late Norse period had not been an important part of any previous research project[1]. The role of the Norwegian kings in the history of the Northern Isles was particularly relevant to Shetland, as it had been brought under the control of the kings of Norway after the failed *Eyiarskeggjar* revolt of 1193 (**2.4.1** below). Thereafter the kings had royal estates (the 'kingslands') and appointed royal officials who continued to be very important people in the administration and rule of the Northern Isles. Whereas in Orkney the royal estates came very quickly to be controlled by the earls, and the royal officials were violently resented, in Shetland such officials had a pivotal role in the islands' history which helped to maintain close links with Norway right up until the pledging of Shetland to Scotland in 1469. The 1299 document provided a dramatic glimpse of this royal machinery in action and its information offered an opportunity to locate on the ground in Papa Stour a royal establishment, the excavation of which would hopefully provide material evidence of those close links across the North Sea.

Such a research-orientated excavation project was not usual in the 1970s and 80s, nor indeed was it considered desirable. Government funding was only available for threatened sites, so that all funds had to be sought from other sources (see below). There was no threat to the site chosen, which was used only for intermittent grazing of sheep by the crofter. The generally held view was that excavation should only be carried out in cases of necessity; to choose to excavate a particular site for the interest of pursuing a research project was considered somewhat irresponsible. Moreover, by looking for a historically-authenticated site I could be deemed to be embarking on the project with a preconceived idea of what might be discovered. The intention to lead a programme of excavations with one of the underlying motives being the desire to find a specific house was a rather risky undertaking. To look for something can blind one to the real nature of what is found. It has been said, no doubt justifiably in many cases, that 'historians have been happy to accept archaeological discoveries as illustrating the truth of what they already believe they know from the written sources' (Young 1992, 135). This raises the issue of 'text-aided archaeology' and the questionable methodology that this implies (it being even referred to disparagingly as 'text-hindered archaeology' by some). For the historian, 'text-aided archaeology' can be useful in the writing of history: that is, when archaeological discoveries are interpreted in the light of written sources. But there is also a situation when the use of archaeological evidence can lead to 'archaeologically-aided historical reflection' (*ibid*), and it is in this light that I would wish to have my own research programme assessed. It is rare for historians to seek out material proof of textual information, and maybe there is no justification for so doing. In my case it was simple curiosity and a desire to familiarise myself with Norse archaeology at a site of my choosing. There may be a danger in having historical situations and recorded events as part of one's mental baggage, which can lead to the temptation of peopling the site at the Biggings with historically-recorded individuals, and assign structures accordingly. Readers will have to judge whether they consider this to have been done justifiably. For historians it provides the intellectual stimulus of having some knowledge of the political, social and economic circumstances prevailing on the island at certain periods in its history.

Of course what excavation revealed was the material history of a community which existed long before 1299 and continued to exist for many centuries afterwards. Perhaps fortunately we were spared the additional problem of having to cope with pre-Norse settlement although there was evidence that there had been a thriving Norse settlement at the Biggings for several centuries before the days of Duke Hakon or Thorvald Thoresson. The site was also the centre of a populous community during the following centuries, which historical evidence makes very clear (as discussed in Chapter **3**). This fact and the surviving material evidence for the post-medieval period has obviously created the need for the later archaeological evidence to form part of the whole settlement picture. This has been presented as positively as we have been able: the reader will possibly sense however that the main thrust of our research energy and interest has been focused on the Norse period. The post-medieval evidence has produced its own challenges and some very interesting results (particularly the significant pottery finds reported on in section **7.3.4**). The more tentative nature of our analysis of the post-medieval structures on the site is a result of the circumstances of destruction of the houses in the Biggings yard in the mid 19th century, houses which had been built directly over their predecessors from the Norse period. Despite these practical difficulties it has been the intention to present the history and archaeology of a thriving settlement at the heart of an island community from the Norse period up to the 19th century, and thus provide some understanding of

[1] Archaeological evidence from the late Norse period had been of very little concern in previous excavations in the Northern Isles; at Jarlshof for instance part of the medieval house was destroyed to reveal earlier levels.

the changes and development of settlement in Shetland over a wide phase of time. This alone provides a justification of the excavation and of the resources used in pursuing a multi-disciplinary research objective.

At the end of the day, there is history and there is archaeology and the problems of correlating the two types of evidence are always going to be there in a period of time when written sources exist. In the field of Norse archaeology it is of primary importance that practitioners of the one discipline are speaking to the scholars of the other, and that all are aware of the potential and limitations of the two types of source evidence, and of the need to combine them both with circumspection. It is hoped that the Biggings research project has succeeded in doing just that, and if it has, it is because of the ready co-operation and involvement of many archaeological friends and colleagues in Britain and Scandinavia. The final responsibility for the conclusions drawn from the excavated evidence which they analysed remains my own.

POST-EXCAVATION RESEARCH PROGRAMME

Despite the comparatively small size of the area excavated (467.5 sq m) and the lack of deep stratigraphy a large amount of material was recovered which has necessitated a great deal of post-excavation research. As is well-known, but not always appreciated by grant-giving bodies, this is a very expensive process. Throughout the period since the final season's excavation (1990-1997) Beverley Ballin Smith has recorded, filed and put on computer the total finds list, analysed the excavation records and drawn up the matrix of different phases, written up the description of the site, all in consultation with myself who remained in overall charge of the project. We have both overseen the organisation and co-ordination of specialist reports. My own particular concern for the interpretation and understanding of the wooden building and of wooden structures in general was much aided by a research visit to Bryggens Museum, Bergen, for the month of March, 1993, which was generously supported by NAVF (Norges Allmenn-vitenskapelige Forskningsråd).

Of all the finds recovered it was the organic material, in particular wooden objects and textile fragments which caused most concern from the point of view of conservation; after initial treatment on site, these were transferred as quickly as possible to the laboratories of the National Museums of Scotland, where they were treated with great professional care and attention by, in particular, Jim Tait and Theo Skinner. Much of the wood was then examined and identified by Camilla Dickson, University of Glasgow who has written the very important report on the botanical samples, and her professional treatment of this evidence has provided recognition and understanding of the many and various elements of this important environmental material[2]. The wooden objects themselves are reported on by Carole Morris who was involved in their excavation, and who has brought a wide-ranging knowledge of much other comparative wooden material from medieval sites throughout the British Isles. The textiles recovered in the first years' excavation were examined by Helen Bennett while on the staff of the National Museum of Scotland, and the later samples by Penelope Walton (formerly of the York Archaeological Trust) who has incorporated Helen Bennett's initial work in her final textile report, along with the fibres analysis by Harry Ryder. It has been one of the most exciting post-excavation research findings to have these scraps of wool and fibre identified and fitted into the north European evidence by the foremost specialists in this field. In addition to the excavated environmental material Graeme Whittington has contributed the pollen analysis from samples taken on the site and from the Loch of Biggings below the site. The small collection of insect material has been reported on by Paul Buckland who brings his unrivalled knowledge of Icelandic farm environments to bear on this material. The even smaller bone collection has been reported on by archaeo-osteologist Catherine Smith.

The more durable finds have also been examined and reported on by foremost authorities. In this category can be included the horn, which survived the anaerobic conditions at the Biggings much better than bone, and which was examined by Sonja O'Connor of the York Archaeological Trust. The steatite assemblage, which is so important a component of a Norse site, was first examined by Simon Buttler, who was a Site Supervisor during the 1982 excavation season, (and also himself excavated a steatite quarry at Clibberswick, Unst). The final catalogue and report was written by Andrea Smith, Historic Scotland. The bakestone fragments were examined and specifically compared with Norwegian

[2] The authors would like to record their sadness that Camilla Dickson died before seeing the results of her work incorporated in the present publication.

material by Birthe Weber, Oldsaksamlingen, University of Oslo. The whole pottery collection has proved to be one of the richest parts of our total finds assemblage and has needed careful examination by many different ceramics experts because of its very diverse nature. The local coarseware (as well as the claypipes) have been looked at by Beverley Ballin Smith: glazed medieval fragments and modern pot by Robert Will: stoneware by John Hirst and Hans-Georg Stephan: post-medieval redwares by Lynn Blackmore, Museum of London. Extra advice was given by Charles Murray, Aberdeen Museums. Finally the stone assemblage has been examined and reported on by Beverley Ballin Smith, Dr Anthony Newton and Dr Andy Dugmore, Dept of Geography, University of Edinburgh (pumice), Dr Denis Pringle, Historic Scotland (voussoir), and Professor Alexander Fenton, Institute of Ethnology, National Museums of Scotland (rhyolite pebbles). The few metal objects were examined by Dr Donal Bateson, Hunterian Museum, University of Glasgow.

The number of specialist reports give some indication of the varied nature of the finds assemblage, and helps to explain why the final report took so long to complete. The authors are aware that their assimilation of all the evidence from the excavation is merely a preliminary, but it is hoped that this presentation of the evidence will provide source material for future discussion and analysis of The Biggings as a Norse settlement site with a continuing history into recent centuries. The variety of the assemblage from this one site gives us further knowledge of the richness of the archaeological potential for our understanding of the Norse and later periods of Shetland's history. It is hoped that it will form a major contribution to present understanding and appreciation of Shetland's cultural past.

THE STRUCTURE OF THE VOLUME

The volume begins by outlining the natural setting for Papa Stour, its location in Shetland and the environmental factors and features which dictate its nature as much today as in the past. Chapters 2-4 give the detailed historical background to the project, in turn the historical place of Shetland, Papa Stour's part in that history and the nature of the events described in the document of 1299. The results of the excavations at the Biggings are described in Chapter 5 and the details of the environmental and artefactual evidence recovered are given in Chapters 6 and 7. A review of the building sequence revealed by the excavations and its relationship to the historical record (Chapter 8) is followed by a final discussion of the site in Chapter 9.

The detailed specialist catalogues and analysis can be consulted in the archive (lodged with the National Monuments Record, Edinburgh). At the time of going to press the finds material was awaiting recommendation for disposal by the Treasure Trove Advisory Panel.

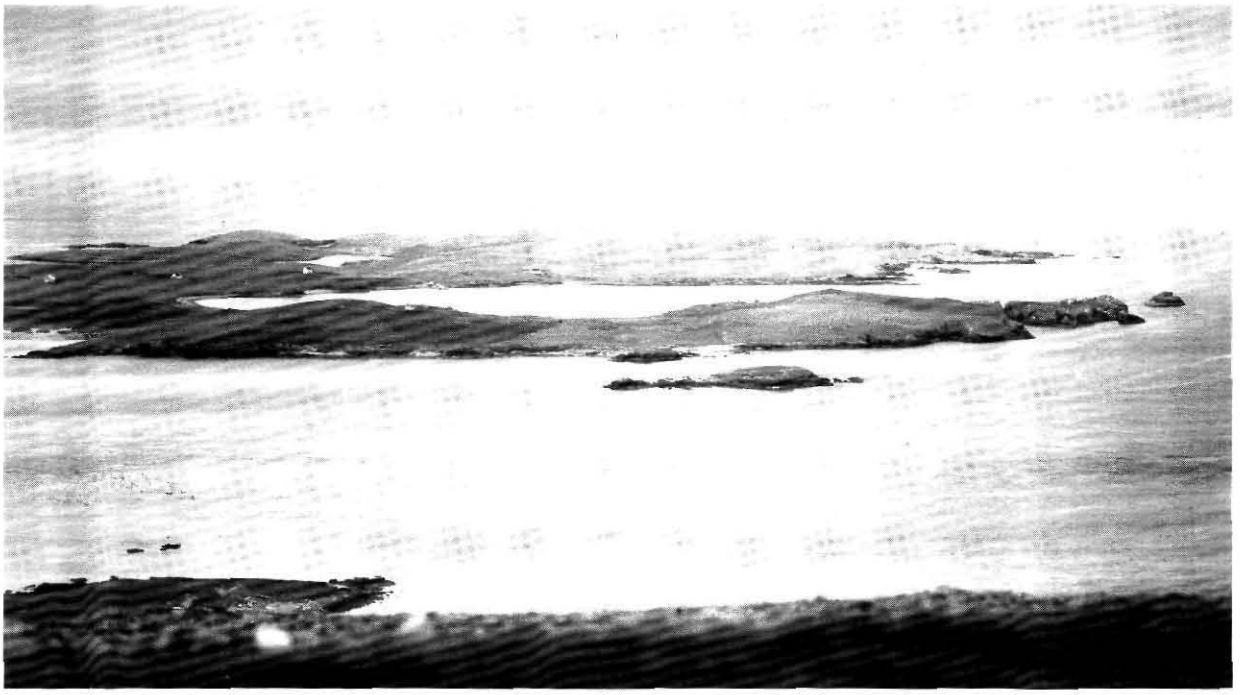
1

THE NATURAL SETTING

Barbara E Crawford & Beverley Ballin Smith
with RMM Crawford & John W Allen

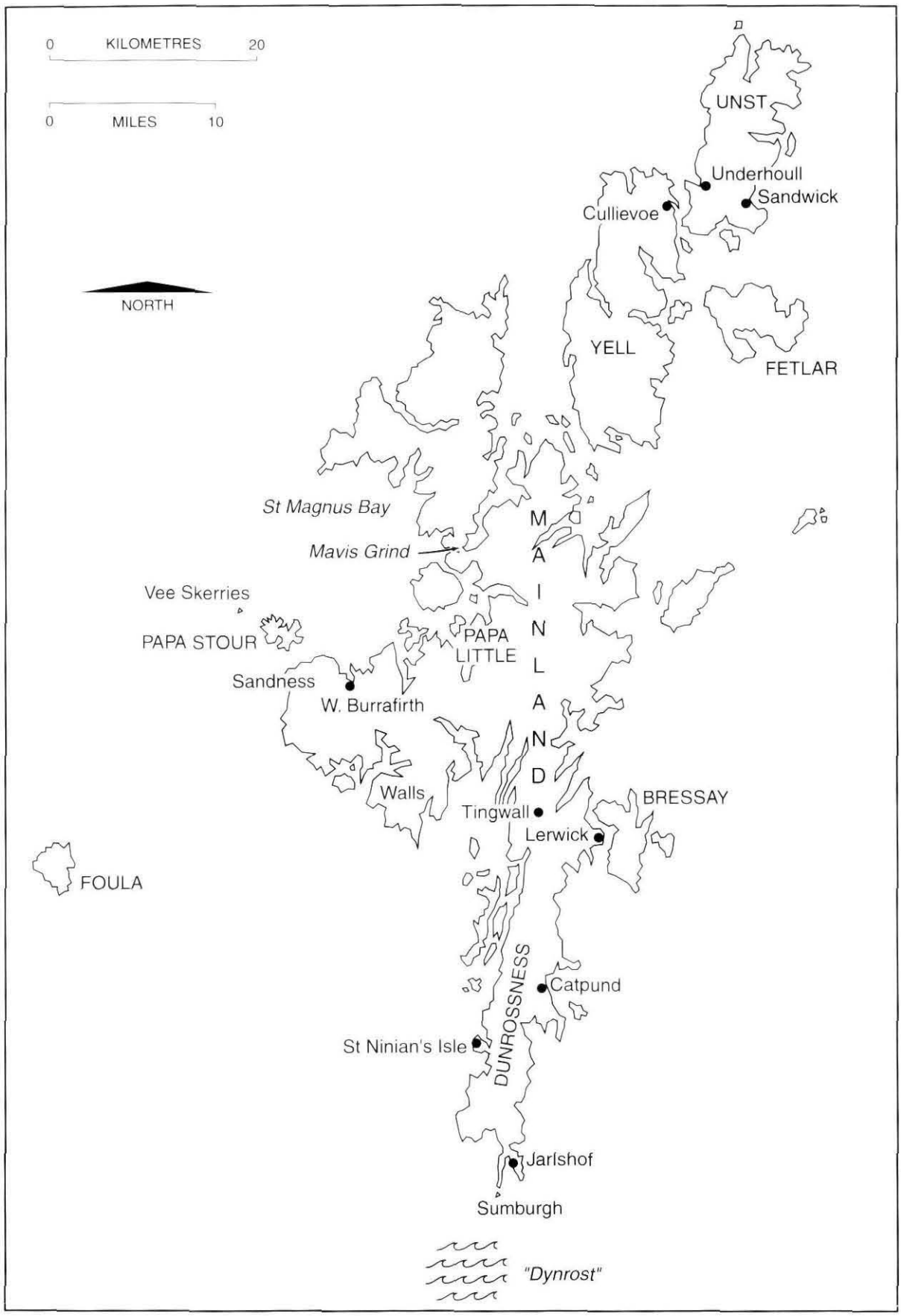
1.1 LOCATION AND DESCRIPTION

The island of Papa Stour lies at the western edge of the Shetland archipelago, the most northerly island group in the British Isles, lying mainly between 60° and 61° north (illus 1; 2). The island occupies a rather peripheral place in the archipelago: lying off the west side, and only a short sail from the peninsula of Sandness, it is nonetheless separated from the Mainland of Shetland by the strong tidal currents of the Sound of Papa which make contact hazardous and dependent on certain suitable conditions (illus 1). Not so distinctly separate as Foula (and nothing like as dramatically dominant on the skyline (col illus 1)), Papa Stour can very easily be considered an insignificant part of Shetland's history and maritime environment. But in days gone by, when sea travel was the normal, preferred, and far more expeditious means of moving around the islands, and when the fertility of the land was the prime factor in establishing value and significance of estates, Papa Stour had many advantages as a residence for the politically and socially dominant. Once the Shetland islands had become an important link



illus 1
'The most beautiful of the lesser Schetland isles' (Rev G Low 1774).

Looking to Papa Stour from Sandness Hill across the Sound of Papa: the cultivatable land lies spread around the sheltered bay of Housa Voe.



illus 2
Map of Shetland with places mentioned in the text.

in the Viking maritime network then Papa Stour's location down the west coast of Shetland made it a very useful control point on the route between Norway and the Orkneys (Crawford 1984a, 40) (illus 6 below).

The island is approximately 4.4km (E-W) by 3.5km (N-S) (illus 3). The coastline is dissected by four large bays: Hamna Voe, Housa Voe, West Voe and Culla Voe, producing sandy beaches and natural shallow inlets. Numerous small offshore islands and stacks are to be seen surrounding the island, and caves are numerous. In the centre of Papa Stour are two large freshwater lakes, Dutch Loch and Gorda Water and many smaller ones. The Biggings is situated in the centre of the eastern, cultivated half of the island, between 10 and 20 metres above sea level and within half a kilometre of both Housa Voe and Kirk Sand.

1.2 THE ISLAND'S GEOLOGY

Papa Stour is of volcanic origin and the underlying rock is composed of basalt lavas (illus 3). Outcrops of this dark grey rock can be seen along the north shore of Housa Voe, at Scarvi Taing (on the shore below Bragasetter (Bragaster)), at the Koam on the west shore of Hamna Voe, at Aesha Bight and Culla Voe. In places there are beds of sandstone or tuff (compacted volcanic fragments) between separate basalt flows (Mykura & Phemister 1976).

Above the basalt are two layers of rhyolite, an orange-red volcanic rock, which is seen in the sea-cliffs (Mykura 1976, 53). The total thickness can reach 90m (300′). In places the rhyolite rests directly on the basalt, in others, as at the north-west shore of Housa Voe, there is a thick layer of sandstone and tuff separating the two. The basalt and rhyolite are of Old Red Sandstone age, roughly 400 million years old.

Wind-blown sand of post-glacial origin covers an area of about three-quarters of a square mile in south-east Papa Stour but it is probably less than 3m (10′) thick. The present cultivated area corresponds closely to this formation. In particular, the Hill Dyke lies approximately along the line separating the sand region from the boulder clay area (cover illus).

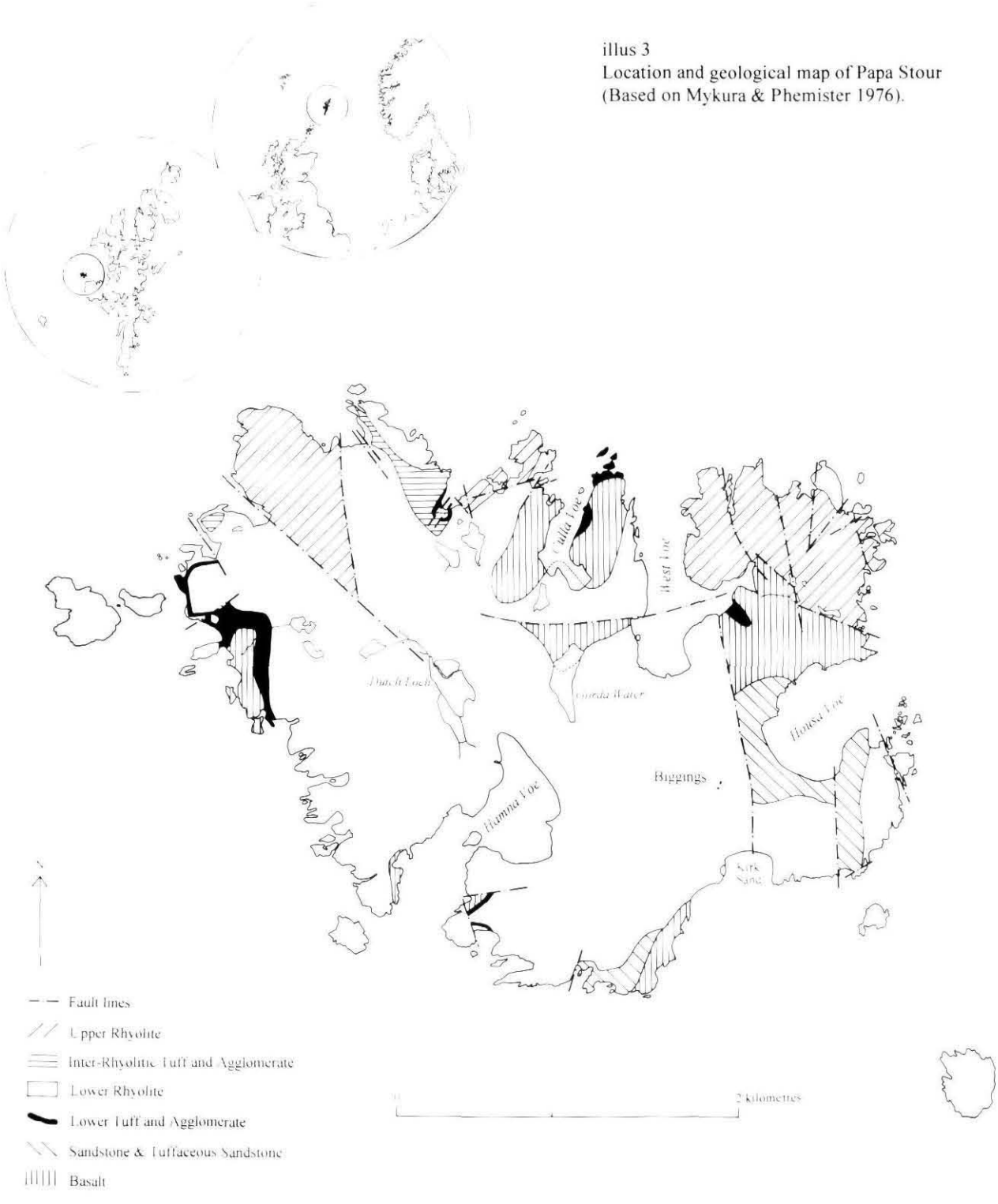
Much of the rest of the island is covered by boulder clay now largely denuded of its former covering of turf. This is the region to the west of the Hill Dyke and to the north of Housa Voe, although the boulder clay is broken by extensive areas of underlying rock. The very broken ground between Culla Voe and Hamna Voe appears to be a glacial moraine, possibly a terminal moraine of a glacier sweeping north-west over Western Shetland. Mykura suggests this glacial moraine belt, which extends *c* 1.5 km across the island is probably the best example in Shetland (Mykura 1976, 106).

The Melby Fault runs across the tip of Sandness, passing through Melby Village and presumably across St. Magnus Bay to the north Mainland, where it separated the Esha Ness volcanic rocks (similar to Papa Stour's) from the rest of Mainland. The rocks on the other side of the fault are quite different from the rocks of Papa Stour. Along the north coast of the Walls peninsula are a range of metamorphic rocks, and to the south of these are sandstones. Only small areas of igneous rock occur in these formations. Because the Scandinavian ice-sheet flowed roughly west across Shetland veering north-west over Papa Stour, erratic stones and boulders of these formations are common on the island.

Due to these circumstances, a wide range of volcanic, metamorphic and sedimentary stones can be found on Papa Stour, and also on the nearby parts of Mainland. Except for steatite, and the schist of the querns, all the stones found at the Biggings could have been found on Papa Stour itself. Steatite and schist outcrop on Shetland and it is not necessary to look for a more distant source.

1.3 THE SHETLAND CLIMATE

The climate which Shetland experiences is hyper-oceanic affected by the North Atlantic Drift which in winter allows for a warmer mean sea temperature than is expected for this latitude. Winters are mild and wet and summers are cool, often with frequent precipitation in the form of mist, fog and rain, with snow and frost occurring on 50 and 30-50 days respectively, during the winter months, but probably fewer on Papa Stour. Relative humidity at 80-85% is the highest in the British Isles for average monthly figures. In addition Shetland has mean monthly temperatures of 3.3C in February and 11.9C in July and August, and mean annual rainfall of 1028 mm (Berry & Johnston 1980, 21-6). Also of importance are gales which occur approximately 58 days of the year and



illus 3
Location and geological map of Papa Stour
(Based on Mykura & Phemister 1976).

achieving extremely high wind speeds coming mainly from the south in winter and from a northerly direction in the summer. Total sunshine hours per month vary between 10 in December and 193 in May.

The climate is an important aspect of the settlement history of Papa Stour, affecting positioning, alignment and height of structures, the need for protection of buildings, the viability of agriculture, the range of crops grown and animal species bred.

1.4 SOILS OF PAPA STOUR

Papa Stour is given a unique identity among the islands of the Shetland archipelago by the massive Hill Dyke which runs N-S across the island dividing it into two very contrasting halves. The unusual fertility of soil in the eastern half of the island is based upon underlying sandstone and basalt rock overlain by a deposit of wind-blown sand 2.19^2 km in extent (Mykura & Phemister 1976, 158, 177; illus 3). Such geological conditions combine to give good arable-growing soil in Papa and other parts of the West Mainland (Walls and Sandness) which are valuable for settlement. Long-established farming practices have also contributed to a deep top-soil formation making the present-day soil in certain locations in Papa up to *c* 0.8m deep and very homogeneous (Davidson & Simpson 1994, 68). The remarkable nature of the soil on the island is commented on by an early traveller in the 1790s: 'the soil, which is loamy, with a mixture of clay and sand chiefly, is excellent, and capable of the highest degree of cultivation that its latitude can admit: or rather might be ameliorated as to vie, in its productions, with places removed five degrees to the southward of it' (CS, 299). This fertility underlies much of the history of Papa Stour, explaining its long historical record going back to 1299 when it forms the subject of Shetland's first written document (**4.1** below). It also explains why this and so many of the later records are to do with disputes over the lands and income from the island (Crawford 1984a, 54-6). The Rev George Low's admiring comment, made on his visit to the island in 1774, that Housa Voe was 'surrounded on all sides with fine Corn-fields, this being the most beautiful of the lesser Schetland isles' (1879, 123), is praise indeed from the minister of the fertile parish of Birsay in Orkney: but he is outdone by the contemporary

illus 4
View from the Biggings, Papa Stour, looking across the Sound of Papa to Sandness.

illus 5
A 'virtual desert': the scalped grazing land outside the Hill Dyke, with the *remains of the lepers' huts* (see **3.4.2**) in the foreground.

visitor quoted above who rhapsodises: 'The corn and grass grounds are truly beautiful, and open a wide field for contemplation. Nature has indeed been very bountiful', adding however, 'but art parsimonious in this delightful spot' (CS, 302). The Statistical Account mentions the rich crops of bear (primitive barley), oats and potatoes produced on the island (Sinclair ed, 1797/1978, 519).

The fertility of soil is restricted to the eastern quarter of the island, around Housa Voe and Kirk Sand, extending to Northhouse and East Biggings (illus 4, 8) with a small area of sandstone deposit also at the southern end comprising the land of Bragaster. This holding was, significantly, the cause of the quarrel between Thorvald, the royal bailiff and Ragnhild in 1299 (see **4.4** below). The rest of the island consists of much harder and more intractable underlying rocks such as basalts, dolerites and rhyolites, on which the houses of Midsetter and Setter, and the 19th-century school are built (O'Dell 1939, 38).

To the west of the massive turf and stone Hill Dyke lies what is now a virtual desert (illus 5; col illus 3), although remains of Neolithic and Bronze Age settlement in the west reveal a story of what was once a more productive island now denuded of its covering layer of turf. It seems that at the end of the Bronze Age/beginning of the Iron Age the western part of the island was largely abandoned. The soil and turf which once overlay this western part of the island has been entirely used up by 'flaying' or removing for use as fuel and animal bedding. In 1793 it was noted that 'peats are of an inferior sort, as there is scarcely an appearance of moss observable throughout the island. Hence...the lamentable prospect that this fine island will, in a short time, be peelléd to the very channel, for a scanty firing' (CS, 302). This did indeed result in the total exhaustion of available peat and a crisis in the island's history in the mid 19th century from the threat of depopulation, only averted by the burdensome arrangement of digging and transporting peats from parts of the West Mainland and the island of Papa Little in Swarbacks Minn (Fenton 1978, 223). The barrenness of the land to the west of the Hill Dyke contrasting with the fertility of the settled land to the east is a monument to man's industry, as well as his devastating impact on the environment. It is also an indication of the pressure of population on the natural resources of this island throughout its history.

The anthropogenic soils of Papa Stour and other places in Scotland are at present the subject of analysis (Davidson & Simpson 1994; Carter & Davidson 1998). This work is relevant to our understanding of the processes and the methods involved in creating plaggen soils in margin areas and especially on Papa Stour. Here the east end of the island, which is now the most fertile, has been managed since earliest times to create a deep soil with the application of transported turf, composted seaweed and midden material.

1.5 PAPA STOUR'S VEGETATION

The natural vegetation of Papa Stour as it now exists, illustrates more vividly than anywhere else in the British Isles the floristic impoverishment brought about by prolonged human settlement in a hyper-oceanic environment. There were already indications before the arrival of man that the natural woody vegetation of Shetland was beginning to be replaced in part by the growth of bogs (Bennet *et al* 1992). However, with the arrival of Neolithic man tree cover was rapidly reduced and replaced by peat bogs that are such a characteristic feature of Shetland today. Papa Stour, however, has lost even this last refuge for the native flora due to the 'flaying' of the entire area that lies outside the Hill Dyke. Thus, this remote (in modern thinking) yet over-exploited island has the unenviable reputation of having fewer species of flowering plants than any other comparable area in the British Isles. Even hardy oceanic species such as the yellow flag iris (*Iris pseudacorus*) and the normally widespread hare's tail cotton grass (*Eriophorum vaginatum*) are absent from the island (Scott & Palmer 1987). Nevertheless, the monotony of the remaining flora is relieved by some species that still survive in small pockets in now undisturbed and abandoned areas. The wet pools and loch sides of Papa Stour provide one of the few Shetland strongholds for the lesser marshwort (*Apium inundatum*) and the tiny and inconspicuous allseed (*Radiola linoides*) nestles in hollows in the remaining heaths. The wet sedge pasture adjoining Kirk Sand is the only location on the West Mainland of Shetland for the curved sedge (*Carex maritima*).

One aspect of the edaphic impoverishment of so much of the island is that the populations of native species which have managed to survive the unrelenting grazing, cropping and flaying are distinctive for their diminutive size. The minuscule plants of heather (*Calluna vulgaris*) have a creeping form that hugs the ground. The populations of sea plantain (*Plantago maritima*) found frequently in its dwarf hairy form in the western part of the island often grows as rosettes that are no more than 15mm in diameter. The lesser spearwort (*Ranunculus flammula*) is also found in its prostrate dwarf form fringing the pools in the barren areas outside the Hill Dyke.

The present plant cover is not the vegetation that would have met the eyes of the first human settlers 4000 years or more ago when a woody scrubland would have covered all but the most exposed parts of Shetland. This can still be seen in remnants of scrubland on a few small islands on lochs and in gullies that are inaccessible to sheep in a number of places on the Shetland mainland (Spence 1979). Within 300 years of man's arrival the landscape would have presented the same treeless expanse that we are familiar with throughout Shetland today. At the time of the Norse settlement Papa Stour would still have had considerable reserves of peat underneath a covering of maritime sedge heath that would have probably provided grazing both in summer and winter. The remains of hearths and ovens and the quantity of burnt peat found during the excavation at the Biggings provides dramatic visual evidence of the extensive use of this fuel source during the Norse and post-medieval periods. The present acute impoverishment of the natural vegetation is a result of exhaustion of the turf cover on the western part of the island due to over-population that built up with the development of commercial herring fishing in the 18th and 19th centuries (**3.4** below). In the 1970s there were still a few remnants of turf that were being cut (col illus 5) although it was barely sufficient even for the needs of one household.

The hyper-oceanic conditions of the Northern Isles, and Papa Stour in particular, need special mention when discussing the problem of maintaining soil fertility, especially when population growth increases the pressure on arable land. In oceanic environments, long wet winters with little frost accelerate nutrient removal through soil leaching. The arrival of agriculture into an oceanic environment with the removal of trees and scrub, constant ploughing, burning, draining and other disturbances serve to aggravate this process. Various techniques would have been available on Papa Stour to overcome the steady depletion of soil nutrients, such as seaweed manuring and turf cutting. Seaweed can increase nitrogen input but does little to remedy phosphorus deficiencies. Turf cutting and the creation of 'plaggen soils' to restore soil fertility was used in many areas in the Northern Isles (Davidson & Simpson 1994) with the consequences that are visible today in Papa Stour in the complete impoverishment of the land outside the Hill Dyke. Papa Stour with its hyper-oceanic environment and rain-leached soil, together with a long history of settlement and over-population (in relation to the extent of arable land) is therefore an extreme example of the loss of both biodiversity and productivity that has taken place in so many of the oceanic parts of Scotland. What is so evident in so much of Papa Stour is just one example of the development of the 'wet desert' syndrome that has been used in the past (Darling & Boyd 1964) to describe the current state of many parts of the Western and Northern Isles.

The most dominant natural environment in Shetland is

1.6 THE NATURAL FAUNA OF PAPA STOUR

The most dominant natural environment in Shetland is the sea, and the waters around Papa Stour yield a wide range of fish species. This includes cod, haddock, herring, ling, mackerel, saithe, skate, sprats, whiting, and formerly halibut; either from surface or deeper waters. In addition there are whales (the Minke, Killer and Pilot), dolphins and porpoises, and seals -the Common and Grey Seal, both of which breed on the island. From the coastal environments come shellfish: mainly lobsters, crabs and scallops, with limpets, whelks, cockle and possibly mussel. Seaweed is also abundant and is often washed up onto beaches during storms. The sea environment is one of the richest in Shetland and would have been a very important natural resource to the inhabitants of Papa Stour from prehistory.

Land mammals are particularly limited on Shetland and many have been introduced in historical times such as the Brown and Blue Hare and the Stoat, the latter in the early 17th century (Berry & Johnston 1980, 129). Indigenous mammalian species include the otter and possibly Field and House mice. Domestic cattle, sheep/goats and pig were most likely bought to the islands in the Neolithic period and ponies during the Iron Age.

Birds are an important component of the natural environment of Shetland with over 60 breeding species. Cliff nesting sea birds such as the auks, the 'Tystie' or Black Guillemot and the 'Tammy Norie' or Puffin, Solan geese or Gannets and the 'Dunter' or Eider, would have been some of the most important species to the inhabitants of Papa Stour. In addition there are birds, either indigenous or seasonal, which make use of a variety of other habitats such as arable land, old stone buildings and dykes, moorland, and lochs. Many of these would have formed an integral part of man's diet, or an exploitable resource from the prehistoric period to the 19th century.

2

THE HISTORICAL SETTING SHETLAND FROM THE PRE-VIKING TO THE MODERN PERIOD

Barbara E Crawford

2.1 THE PRE-VIKING SCENE

Shetland is the most northerly island group of the British Isles (at 59-61° N) and much further away from the mainland of Britain than, for instance, the Hebridean archi- pelago. Nonetheless its cultural contacts in the prehistoric period were apparently all derived from mainstream developments in north Britain (Fojut 1993, 9, 43, 56). When the Vikings arrived they came to a long-settled group of islands with much evidence of prehistoric man in the landscape, evidence which is still dramatically visible today. Although Shetland had been the last recipient of prehistoric cultural impulses there is no evidence that its distance from mainland Britain had resulted in any attenuation of the form of any particular culture, its location being no disadvantage when travel by sea still prevailed. Archaeological features give the impression of vigorous and highly organised prehistoric societies, with the same social achievements–and problems, if we regard the brochs as evidence of societies in a state of tension.

By the 8th century, at the time when the Vikings took over these islands on their ventures across the North Sea, native society in Shetland had become a part of the Christian world of Dark Age Europe. The Iron Age population must have received news of the new religion, and probably accepted its message, for the archaeological evidence suggests that there were well-established groups of Celtic clerics in different locations in the islands. There are some remarkable survivals of these eccles-iastical establishments, such as the carved stones which convey so vividly the image of hooded monks with their staff and book satchel, containing the holy writings which they brought north with them (Lamb 1995, 10, 12). Symbols of literacy such as ogam stones and the Latin inscription on the St Ninian's Isle sword scabbard chape tell us very clearly that Shetland had been brought within the literate Christian society of early medieval Europe (Wainwright 1962, 96-9; Okasha 1996, 30).

It may indeed have been the case that these clerics from Ireland and Scotland moved to these islands because of their abundance of offshore refuges, inaccessible headlands and remote rock stacks, which provided the wild retreats sought out by them for their solitude. Moreover Shetland itself was not the ultimate destination with such suitable geographical environments, and these intrepid monks of the Celtic church moved on in their *peregrinatio* to islands further north, so that Shetland was even in this period acting as a useful staging post en route to the eremitical world of the north Atlantic. It has been suggested that these monks were blazing a trail which the Vikings later followed, perhaps because they heard about the unpopulated islands further north from returning monks (Smyth 1984, 171). Shetland about the year 800 was then not a remote or uninhabited archipelago but a centre of Christian activity of different types: active missionising monastic communities on fertile islands (like Papa Stour) or at locations on the mainland (such as Papil), and solitary groups of contemplative anchorites on uncultivated islands or inaccessible rock stacks. The secular population is less easy to define, as their settlements and burial places have rarely been found (Fojut 1993, 58, 67). There were certainly some wealthy and cultivated chieftains like the owners of the St Ninian's Isle treasure, unique masterpieces of Pictish silverwork (Small *et al* 1973; Youngs 1989, 108-112).

2.2 THE VIKING AGE

When the islands were overrun by Vikings, a new order was established in the North Sea/Atlantic zone and Shetland became central to this new 'Viking' world (illus 6). Invaders from Scandinavia would have considered the Shetland Islands most desirable for their own particular needs and requirements, just as the inhabitants in the

illus 6
Map of the North Sea world with places mentioned in the text.

previous prehistoric period would have valued them according to their own peculiar circumstances. In the Viking world Shetland's importance was strategic, providing a first staging post on the route from west Norway to the rich and wealthy hunting grounds of Celtic Britain.

The significant change of name for this group of islands from G.'Inse Cat'[1] to ON 'Hjaltland' (or variants) is rather remarkable. This ON name is well-documented and the sound change from 'hj' to 'sh' which occurred in the Middle Ages is quite explicable (Fenton 1973, unpaginated: Andersen 1984, 23). The difficulties of interpreting island names is well known, and the actual etymology of Hjaltland is obscure, although the tendency to associate it with ON *hjalt* = 'hilt of a sword' is strong (Stewart 1987, 1). It has been argued however that the first element was derived from the Celtic name 'Cat' (Lockwood 1980, 33-4). Our historical information is imprecise as to when the first raids started to influence this group of islands, although the form of the name given to this group of islands by the Vikings (ending in 'land') may perhaps indicate a date earlier than that traditionally given to the start of the Viking Age (*ibid*, 20). From a geographical point of view one would expect Shetland to become known to inquisitive Norwegians with boats as soon as they started to venture much beyond their own coastal waterways, for these islands could be reached from the Norwegian west coast in 24 hours in good weather (Leirfall 1976, 13).

This brings us to the difficult question as to when such contacts may have been first initiated. It is a difficult

[1] This is the name apparently given to the Shetland Islands in the 11th century although it comes from a late medieval and not very trustworthy source (*ES*, i, 536).

question because we are reliant on written sources which emanated from literate societies much further south and west (Anglo-Saxon England and Celtic Ireland) whose monks were only interested in recording violent attacks by raiders, particularly on churches. Archaeological evidence has only recently been re-studied with an open mind which suggests that it might indicate contact across the North Sea of a different kind and much earlier in the 8th century (Myrhe 1993: Carver 1995: Weber 1994). None of this evidence has however come from Shetland, but that is because no really early Viking settlement sites have yet been excavated[2]. If we stick within historical parameters for present purposes it can be said that raiding was under way around the shores of the British Isles in the last decades of the 8th century and the perpetrators were from the west coast of Norway. That these raiders were using the islands to the north of the British mainland as useful bases from which to launch their attacks would seem indisputable; the Shetland Islands were always vital ports of call on the sailing route from Norway to Britain (Crawford 1987, 13). At some point they would be used for over-wintering to obviate the need to sail back and forth across the North Sea. Throughout the 9th century the process of raiding continued and warrior bases in the islands were secured, certainly in the Hebrides and most probably in Orkney and Shetland also. This must have been the period when tension with the native population increased as competition for the control of land and resources heightened. Pagan graves of immigrant men, women and children have been dated to this century, albeit none of them very closely datable in time. Warrior graves in Shetland have not been recorded; although the axe found in the churchyard at Whiteness is a fine example of a Viking weapon which may be from a pagan grave deposited in a Christian burial ground (such as is known elsewhere in Scandinavian Scotland: Crawford 1987, 163, fig 31; 1995, Ill 14). Otherwise two pagan Viking women's graves have been found in Unst (Grieg 1940, 103-5).

Looking northward (as will be done in this report on several occasions) it is not easy to find any close correlation with Norse settlement in the Faeroes. The traditional date from the literary sources suggesting a *landnám* in Faeroe in the first half of the 9th century is not confirmed by positive dates from the few archaeological excavations of house sites (Arge 1993, 468). It can be assumed that the initial raiding phase of Viking activity would not see much interest in the Faeroes, which lie north-west of the main sailing route to the British Isles. Only once settlement in Iceland became a feature of the north Atlantic scene (in the late 9th century) would the Faeroes fill a useful role as islands en route between the homeland and Iceland and between the British Isles and Iceland. They provided empty land which was desirable for colonists in search of new homes. These were not islands like Shetland and Orkney which the Vikings as exploiters of western civilisation would find desirable or useful.

2.2.1 NORSE SETTLEMENT

Usefulness and desirability from the geographical point-of-view was combined with the accessibility of wealth–in the form of portable objects which adorned the religious centres of the Celtic church. This is one of the areas of Viking activity which has been argued over by historians and archaeologists: but how ever the objects were acquired (which is what the arguments have focused on) they were certainly desired for their intrinsic value, as well probably as for their artistic merit. Bits and pieces of Celtic religious ornament are found in Viking graves in both Scandinavia and the British Isles (Youngs (ed) 1989, no 62 *per ex*).

The many surviving remains of ecclesiastical shrines from St Ninian's Isle give positive indication of the importance of the Celtic religious establishment on this island when the Vikings arrived in Shetland. But it was not the only one. The remarkable corpus of stone sculpture from other places such as Bressay and Papil also give clear evidence of thriving Christian communities, and evidence which may perhaps be interpreted as indicating some survival of the native population, its culture and beliefs into the Norse period (Crawford 1987, 169-71). The surprising dearth of pagan graves from Shetland may also point in the direction of early assimilation of Christian beliefs by the incoming Vikings, a possible contrast to the situation in Orkney and the Hebrides. The Papay names of islands suggest a toleration of the priests or monks of the Celtic church on certain islands throughout Scandinavian Scotland (**3.1** below).

How do such conclusions affect one's interpretation of the impact of Viking settlement in Shetland? Other sources of evidence such as place-names and archaeology do not provide much positive material on which to make clear statements about any form of native survival. The totality of Shetland names would seem to be entirely of

[2] The recently-launched programme of excavations in Unst led by archaeologists from the National Museum in Copenhagen in association with the Shetland Amenity Trust has already produced promising possibilities of early sites.

Norse origin, and attempts to prove the survival of pre-Norse Celtic names have not been very convincing (Jakobsen 1936, 175-206). Those few which do appear to have their origin in a Celtic language could have been added to the place-nomenclature at a later date when contacts between Shetland and Scotland were strong. What archaeology (particularly at Jarlshof) does prove, of course, is the Vikings' predilection for settling close to the houses–and brochs–of the previous native population. This continuity of settlement pattern no doubt explains to some extent why pre-Norse houses have been absent from the archaeological record. It is not easy to find sites available for excavation dating from the immediate pre-Norse period. These circumstances really give us no evidence to make any firm statements about the nature of the immediate impact of the Norse settlement. In the long term it was a colonial situation in which Norse language and power dominated, but we may suspect that there was some survival of the native population, elements of whose culture (and certainly of whose religious beliefs) may have been adopted and absorbed by the incoming population.

Turning to Norse settlement archaeology, the focus inevitably rests on Jarlshof, one of the most famous Viking sites in the whole of the Scandinavian world (illus 15b below). It provides the classic picture of what archaeologists think of as typical of Norse settlement: a coastal site, close to good farming land, bowed-walled long-houses of varying types and positions showing how the original 'land-taker' (ON *landnámsmaðr*) had founded a successful family unit which thrived and expanded over the following centuries (Hamilton 1956; Small 1982, 248-9). How typical it is will only be known when a good many more sites have been excavated. At the moment the dating of the initial settlement at Jarlshof seems to be under review, but it is probably of the mid 9th-century period (Historic Scotland guidebook). If so, it tells of colonists from Scandinavia settling in their new home without any evidence of adaptation of their life-style or of violence in acquiring their new lands. Conclusions that might be drawn about the peaceful nature of Viking settlement in Shetland from this partial picture would not, however, be valid. In considering A Brøgger's picture of lordless, leaderless peasants colonising the Northern Isles, FT Wainwright countered the simplistic conclusions that might be drawn from the absence of weapons found at Jarlshof with his classic statement that 'Warriors do not leave their swords casually in barns and byres, nor do they throw them on middens' (1962, 152). So the sort of residence which settlers build for themselves does not tell us everything about their lifestyles. The same could no doubt be said for the broch-builders–and indeed there is nowadays talk of the brochs being 'symbols of status for their owners' rather than useful defensive structures by the end of the broch-building period (Fojut & Pringle 1993, 27). Hypotheses can certainly be made about the societies in the islands from the evidence of their fortified or non-fortified residences, but as far as the Vikings are concerned, theories of peaceful communities are unlikely to tell the whole story of their lifestyle.

The few other excavated Norse sites in Shetland do not add anything to our understanding of what happened when the first Vikings settled on the islands, for as yet they have not revealed evidence of 9th-century activity. Underhoull in Unst, Sandwick in Unst, as well as the Biggings, are settlement sites dating from a later period (Small 1964-6, 1968; Bigelow 1985). It is not enough to simply extrapolate from excavations in Orkney or other parts of Scandinavian Scotland to illuminate the situation in Shetland, for as has been argued, the settlement history of the more southerly group of islands may be entirely different from what happened in Shetland itself (Bigelow 1992, 14). Indeed, the circumstances uncovered at Jarlshof are not necessarily going to tell us about what happened in Unst, at the other end of the Shetland archipelago. Every island, every voe, would have had its own separate Viking settlement story, and each one has to be looked at in the context of its own particular social and economic circumstances. As far as Unst is concerned, and Fetlar, the exploitation of the rich local deposits of steatite (soapstone) would provide opportunities for wealth from an export trade (Ritchie 1974, 71-3; Moffat & Buttler 1986). This very useful economic resource is, of course, available at the much better-known Catpund site in Dunrossness, which has been seen to be an underlying explanation for the wealth of the Jarlshof settlement (Hamilton 1956).

2.3 PART OF THE ORKNEY POLITICAL STRUCTURE: EARLS AND BISHOP

In the next phase of history we are able to trace the development of some political structures, when Shetland was linked with the earldom based in Orkney to the south, thus becoming part of the most powerful lordship in the wider Norse world. Towards the end of the 9th century, one dominant family secured its hold over the Orkney islands, and established its power base in that fertile archipelago. The story of the earls of Orkney enshrined in the saga of the earls (*Orkneyinga Saga*) tells us that it was remembered later how the earldom came

into being, although we may suspect that too large a role in the event was awarded to the king of Norway, Harald Finehair (Crawford 1987, 53). This would stem from the later understanding that no earls could hold land and power without having first received a grant from the king. Reality was probably otherwise and the earls of Møre were warrior overlords with as much influence as King Harald's dynasty. This was particularly so in the colonial settlements where the Møre family were well established (Rolf in Normandy and Hrollaug in Iceland were believed to have been members of the same dynasty). The 13th-century saga account blandly lumps Shetland in with Orkney as part of the king's grant to Rognvald of Møre who then passed them over to his brother Sigurd who thus became the first earl of Orkney. There seems little doubt that Shetland would indeed have been claimed as part of their lordship by mobile earls whose origins were in Norway and who would have regarded Shetland as a very important maritime base to have within their sphere of control for journeys to and from the home country.

We cannot know for sure how the process of settlement in Shetland proceeded, whether by individual boatloads of family units, or whether under the direction of the first earls: unlike Orkney, where one can assume eventual overall control by the earls who would have seized the best land for their own estates. The earls may have been satisfied to allow those who had won control on their own behalf in Shetland to keep hold of their gains. Possibly they allowed native farmers–in more inland areas, or on smaller islands–to remain in possession of some of their lands so long as they submitted to the earl's authority and acted to protect his interests in the northern islands of the earldom. As already mentioned, the Norse settlement may have been slightly different in character in Shetland from that in Orkney with greater assimilation of pre-Norse culture, particularly in the area of religious belief. There is no doubt however that Shetland formed an integral part of the earldom and was included in the divisions of the earldom between rival claimants which are first recorded in the *Orkneyinga Saga* following the death of Earl Sigurd the Stout in 1014 (Crawford 1983, 66 and see B Smith 1988, 21-41, for a full discussion of Shetland's place in these divisions)[3].

With the important division of the earldom which occurred during the time of Earls Paul and Erlend Thorfinsson we can trace the allocation of Shetland to the Erlend line; this earl's marriage to an Icelandic woman may well have helped to forge important links between Shetland and the other Scandinavian settlements in the north Atlantic (**8.2.3** below). In the 12th century Shetland seems to have played an important role in the growth of the cult of St Magnus and the winning of power by his nephew Rognvald Kali Kolsson (Crawford 1984c, 70-4). By this date the earls who held Shetland must certainly have had their own estates in these islands, and it is likely that Papa Stour would have been one of those earldom estates. Sporadic evidence can be pulled together which points to Earl Magnus' connections with north-west Shetland, particularly the name of St Magnus' Bay (earlier St Magnus Fjord) which lies between Sandness and Eshaness, controlled on the south side by Papa Stour. It is quite possible that it was the island known to the German and Dutch fishermen as 'St Magnus' Island', which would be a strong indication that the church had been dedicated to the saint-earl, and that he had perhaps resided in Papa Stour in the period when he helped to maintain order in Shetland along with his cousin Hakon (*ibid*). During this period they burned to death in his house at Burrafirth[4] a 'man of rank' called Thorbjorn (*OS*, 1938, 206: Munch 1875, 170). Unfortunately the dedication of the medieval church on Papa Stour has been forgotten, although there are several dedications to Magnus throughout Shetland (more in total than in Orkney).

By the mid 12th century therefore we begin to get some positive pieces of reliable information about the activities of the earls in Shetland and the names of some individual Shetland chieftains **and** ordinary people. The remarkable details of the miracle-working powers of the recently-martyred Earl Magnus are strongly focused on Shetlanders, giving us some very unusual details about the lifestyle and incidents occurring in the lives of the ordinary farmers–particularly in the north of Shetland (Crawford 1984c, 70-2). The evidence from the Miracle Book can be interpreted as indicating that the cult of the saint may have been deliberately developed by the farmer Bergfinn Skatisson and his family who possibly lived in the north Mainland of Shetland, where there is a number of church dedications to Magnus. All this was clearly politically inspired by Magnus' nephew Rognvald who was claiming his uncle's lands and rights (*ibid*, 75-9). The important place that the murdered earl had in the affections of the Shetlanders is likely to relate to the period of time that he spent in the islands and the close

[3] The more peripheral role played by Shetland in the economic network of the earldom is exemplified by the contrast in the numbers of silver hoards found in Shetland, compared with Orkney. Only two are known (and there is even doubt as to whether the record refers to one or two hoards) dating from the late 10th and mid 11th centuries. Perhaps significantly these are both from the southern end of Shetland, from an economically important area and the nearest location to Orkney (Graham-Campbell 1995, no 11 and 16).

[4] Perhaps West Burrafirth on the west coast opposite Papa Stour, where the island ferry leaves from today.

connection that the descendants of Erlend had with Shetland, which formed part of their earldom division. It is not straining the evidence too much to suggest that the centre of their Shetland estates may have been the fertile island of Papa Stour; and if the location of the later-recorded 'Saint Magnus' Island' could be firmly assigned to Papa Stour one could be even more certain about the matter.

In this period when the links between Norway and the Northern Isles were close, Shetland's place as a stopping-off point on the sailing route is clearly seen in many incidents in the saga narrative: the story of Bishop William's promise to allow the translation of Magnus' holy relics if he got a favourable wind to allow him to sing Mass back home in his episcopal seat is located in Shetland where the bishop was storm-bound on his way back from Norway to Orkney late in autumn (*OS*, chap 57). The creation of the archiepiscopal see of Trondheim in 1152/3 was a very important development for the tying of the bishopric of Orkney into the Norwegian ecclesiastical network, and, as in the story mentioned above, this meant that clerical personnel from the bishopric would even more frequently use Shetland when travelling between the islands and the administrative centre of the ecclesiastical province of which they were a part. The payment made by Shetlanders called 'Sunniva meal' to the altar of St Sunniva in Bergen (which is said, *c* 1327, to have been paid 'from old times' *DN*, vii, 120) shows how closely bound by religious devotion to the Norwegian church and northern saints' cults these islands were[5].

The same period conversely sees the earls of Orkney becoming more closely linked with Scotland: Earl Harald Maddadson, whose father was earl of Atholl, dominated the second half of the 12th century in the north. He ranged widely all over the northern world and was as familiar with the court of the Scottish king as with the Norwegian (as indeed were many of the earlier earls). We know for sure that Earl Harald considered Shetland to be an important part of his dominions from the fact that in one of the few charter pieces of source evidence associated with him he styles himself 'earl of Orkney, Shetland and Caithness' (*Scone Liber*, no 58; *DN*, ii, 2; Lawrie 1905, 257). This charter must date from pre-1195 as in that year Earl Harald was deprived of the northern part of his earldom and the position of Shetland in relationship to the earldom was permanently changed.

2.4 A 'SKATTLAND' OF THE KINGDOM OF NORWAY

The 12th century saw the curbing of aristocratic power in many parts of feudal Europe as a result of the growing authority of medieval kings, part of which process was the establishing of their authority throughout a territorialised area which they strove to turn into a national unit. The Northern Isles and the earldom of Orkney did not fit easily into any national structure, but it is highly interesting to see the kings of both Scotland and Norway gradually succeeding in eroding the power of the earl, the former through extension of royal authority in Caithness and the latter through confiscation of Shetland (for Caithness see Crawford 1994). How did the king of Norway manage to achieve this extension of his authority over this group of islands lying far out from the Norwegian west coast? Partly through mistakes made by the earl; partly through the king's own formidable authority built up through a process of military domination of the elements opposed to him within the kingdom.

2.4.1 SEVERANCE FROM THE EARLDOM OF ORKNEY

The king concerned was Sverre Sigurdsson who fought his way to power from an outside position and whose success was resented by the supporters of the defeated Magnus Erlingsson. There were several attempts to oust Sverre once he had established his rule over the whole kingdom, and Earl Harald Maddadson was foolish enough to lend support to one of these attempts, which was mounted from the islands (Crawford 1983, 33). The main mover in the plot was Olaf 'Earls-kin' who had 'great possessions' in Shetland where he took the young claimant to the Norwegian throne Sigurd, son of Magnus Erlingsson (Sephton 1899 trans *The Saga of King Sverrir*, 146-7). When they visited Earl Harald in Orkney 'The Earl supported the boy's cause heartily and gave him a good long-ship, for King Magnus (Sigurd's father) had been an excellent friend of Earl Harald' (*ibid*). A large

[5] There is late medieval evidence that a payment was also made to Trondheim Cathedral from Shetland called St Olaf's *told* (Daae 1895, 58).

band from Orkney and Shetland gathered and sailed for Norway-they were known as the *Eyjarskeggjar* or 'Island-Beardies', and they were eventually defeated disastrously at the battle of Floruvoe, outside Bergen, in 1194.

Naturally enough, Sverre considered Earl Harald to be a prime mover in this threat to his authority 'and had it much in mind to send a force west to the Orkneys to requite the men of Orkney their treason' (Sephton 1899 trans *The Saga of King Sverrir*, 155) which he was perfectly capable of doing. The earl, advised by Bishop Bjarne of Orkney, forestalled such retribution and went with the bishop and all the chief men of the earldom in the summer of 1195 to defend himself before Sverre and submit to the king's pleasure. The terms imposed tell us something about the income from the islands and the king's determination to tie them into his royal administrative structure and to get some of the wealth which had formerly been the earl's into the royal coffers. The conditions of peace were written down as well as a list of 'all the estates and possessions in the Orkneys and Shetland which had fallen to the king's treasury, the property of those who perished at Floruvoe' (*ibid*, 156). Would that this 'scroll' still survived! A limit of three years was fixed in which the kinsmen of the dead might ransom the lands, and after that they were to become part of the royal Treasury. The earl himself was deprived of Shetland (which Sverre took under his own control for tax and tributes) and he was set over the Orkneys again on certain restrictive conditions. Here is a very good example of just how kings were determined to cut back the power of independent earls, to turn their position into something more approximating to a royal official, and to get their own hands on the earls' wealth from ancestral lands and long-established family rights. To put such sweeping decisions into permanent effect was not easy however, and the history of the earldom of Orkney thereafter is punctuated by clashes between earls and royal officials who were attempting to put their royal masters' will into practice, in the teeth of the earls' opposition.

2.4.2 ESTABLISHMENT OF ADMINISTRATIVE STRUCTURES

As far as Shetland was concerned however, the results of this dramatic series of events were long-lasting and significant. Shetland did not form part of the earldom of Orkney again until long after the pledging of the islands to Scotland[6], and its detachment from the earldom meant that it developed along individual lines and was much more closely bound into the home country of Norway (Crawford 1969, 157). From an administrative point-of-view it was governed by a royal official, called 'sysselman' (ON *sysselmaðr*), later known as 'foud' (ON *foged*, a term which came into use in Norway in the 1300s for a royal representative, usually associated with royal castles) who seems to have been of high status. He would have collected in taxes, rents and judicial dues for sending to the royal treasury at Bergen or disposing of according to arrangements made with the king. Skatt (ON *skattr* = tax) was paid by all landowners or tenants throughout Norway to the king, originally converted from the *leiðangr* or naval obligation laid on all coastal districts. In Shetland it was later paid in the proportion of two-thirds woollen cloth or 'wadmel' (ON *vaðmal*) to one-third butter/ oil[7]. The rents would have come from those royal estates confiscated by King Sverre and not redeemed by the families of men killed at Floruvoe. Redemption terms were usually very hard and there is unlikely to have been sufficient spare cash about, or indeed goods which could be commuted to cash, to easily redeem these lands within three years. These estates, known as 'kingslands', would initially have formed a lucrative basis of power in Shetland, although over the next few centuries passing into the possession of royal administrators, as was the case with Papa Stour (**3.1** below). Some 'kingslands' are still traceable in the first rental of Shetland *c* 1500 although by then a very small proportion of all recorded taxable land (MS transcription by B Smith).

What evidence we have about the position of Shetland within the Norwegian kingdom in the centuries following the events of 1195 shows that close connections were maintained between Shetland and the royal house. The 13th and first half of the 14th centuries was the period of Norway's greatest power as an independent kingdom of some account in the northern world. The kings made sure

[6] Although Earl Harald's sons are said to have been set over Orkney and Shetland in 1210 in *Boglunga Saga* this cannot have been a long-lasting situation. The *Orkneyinga Saga* clearly says that the earls never held it again after 1195 (Crawford 1971, 155). The Sinclair earls certainly exercised some authority in Shetland during their period but it has been argued (Crawford 1967-8, 157) that this did not mean Shetland was formally united with the earldom again (although that is how the situation has been interpreted).

[7] The date at which skatt was imposed on the Norwegian colonies in the west is not easily established. It is certain that the earls developed their own system of tribute assessment, based on the land divisions of ounceland and pennyland, which are found in Orkney and Shetland (as well as the Western Isles). After 1195 the kings of Norway established a claim to some of these dues in Orkney and to all of them in Shetland.

that they kept their remoter possessions within their fiscal network and this is when the term 'skattland' becomes current. This was the term for an outlying dominion of the Norwegian crown which paid its tax or 'skatt' to the royal treasury; Jämtland on the Swedish border, along with the islands in the north Atlantic (*skattland*, in KL Blom 1972). They are listed in *Historia Norvegiae*, under the heading *de tributariis insulis* ('the tributary islands') as Orkney, Shetland, Faeroe and Iceland. The first recorded 'sysselman' in Shetland was probably the individual called Gregorius Kikr 'from Shetland' who accompanied Earl John of Orkney to a Council meeting at Bergen in 1223 (*Hakon's saga*, 77)

When there were divisions of the kingdom among different members of the royal family in the 13th and 14th centuries the skattlands were included, as for instance in 1217 when Earl Skule was granted one third of the skattlands along with one third of Norway. It is not always clear how the skattlands were divided on such occasions, although we know that Duke Hakon Magnusson held Shetland and Faeroe as part of his princely appanage from 1273 to 1299 along with most of eastern Norway. During this period it would be logical for these two groups of islands to be brought closer together and there is one interesting piece of evidence of a possible administrative link between them. The *Seyðabraevið* (a document amending regulations concerning sheep-rearing which Duke Hakon issued for the Faeroes in 1298) is said in the introduction to the document to have been taken to those islands by the bishop of Kirkjubøur and Sigurd, the lawman of Shetland, who was presumably acting in some official capacity (Jakobsen 1907, no 1; *NGL* 1R, iii, 33-9). This may have been because of his experience with the laws concerning sheep-rearing in Shetland, and it does not seem likely that the two groups of islands were sharing the same lawman as Munch once argued (Munch 1852-63, iv(ii), 276; Matras 1968, 91). Nonetheless the circumstances of ducal control over both groups of islands clearly did mean that closer administrative links were established during that period.

After he acceded to the throne in 1299 Hakon directed in his will that rents from his estates in Shetland and Faeroe should be reserved for the building of the Apostles' Kirk in Bergen (*DN*, IV, no 128). In the mid 14th century King Magnus Eriksson reserved for his own use Shetland, Faeroe and Iceland when he handed some lands and rights over to his sons (Storm 1888, 404).

2.4.3 SOCIAL, CULTURAL AND ECCLESIASTICAL LINKS NORTHWARDS

These few facts about the close control which the Norwegian dynasty exercised over Shetland do give us the important political background to the social situation in the islands from the end of the 12th century through to *c* 1400. Moreover the documented link with Faeroe (cited above) must also have had social repercussions: some close links are demonstrated in the few documents which have survived.

One remarkable series of documents, resulting from the deposition of evidence which was recorded in Shetland and Faeroe at the very beginning of the 15th century (although relating to a situation some decades earlier), concerns the possessions and dowry of Gudrun Sigurdsdatter, whose father was Sigurd 'the Shetlander' (*DN*, i, 589-92: *Orkney Recs*, XIII; Young 1979, 155-60). She is remembered in Faeroese tradition as the 'lady of Husavik' in Sandøy, Faeroe, who was married to the Faeroese Arnbjorn Gudleiksson (Manson 1978, 14; Macgregor 1984, 12-13): but she was also an owner of wealthy estates in Norway and Shetland which must have been inherited from her father (some of them as dowry). The testimony about Gudrun's possessions, lands, and income from property were heard in different parts of the Faeroes and Shetland between August 1403 and November 1405. The cause of the dispute is in some way connected with the claims of a Shetland woman, Ragnhild Havardsdottir, to the property of Gudrun in Husavik (although it is never explained how she had rights to this property).The list of Gudrun's possessions gives a vivid impression of the sumptuousness of clothing and of furnishings enjoyed by some members of society at this time in the North Sea islands. It was recorded on sworn oath that Gudrun's head-dress was valued at 13 or 14 *øre*, and her full dress suit was bedecked with shields; she had a great silver buckle and a small one of silver-gilt or of gold; a rosary of silver beads, three finger-rings of gold and some silver bowls. She possessed six beds with pillows, eiderdowns and some exceedingly valuable curtains of red and green silk; two sets of household furnishings one of which is said to be for the main room and the other for the 'sea-room' . Basins and bathing-tubs, cauldrons, goblets, cans, plates, pots and many other vessels are listed[8].

Another document of similar date is concerned with the

[8] The translation followed is that by Michael Barnes in Young (1979) which differs in several respects from the translations in *Orkney Recs*.

purchase of a ship in Norway by the sysselman in Faeroe, Greip Ivarsson, who pledged possessions in Faeroe and Shetland until he had received enough money and packs of wadmel from Faeroe to pay for the ship which he was buying (*DN*, XI, no 559). Even at a time when–as will be discussed below–plague had hit these northern societies very hard there was apparently still much to-ing and fro-ing between the islands of the north Atlantic and the home country of Norway in the conduct of business and in the establishment of marital and social links. Entries in the Icelandic Annals bear witness to Shetland's place in this maritime world, even though most of them are concerned with shipwreck or difficulties of travel in the harsh climatic conditions. In 1333 the 'Maria suden' was lost near Shetland with all hands: in the 1380s men and children from another wreck were washed up on the Faeroes and Shetland (Storm 1888, 348, 414). In 1357 Andrew Gislasson, Jon Guttormsson and Arna Thordarsson went to Shetland and stayed there for the winter, as in 1411 it is recorded that Björn *bondi* Einarsson had spent the previous winter in Shetland (probably storm-stayed) (*ibid*, 357, 290). In 1363 a Faeroese ship came safely from Shetland to Iceland carrying Bishop Arni of the Faeroes (*ibid*, 290, 360). In 1337 five Scotsmen came into the Eastfjords of Iceland in a little ship which had left Bergen for Shetland after Easter. There had been fifteen men aboard but ten had died and the others had survived by kneading dough with sea water for sustenance (*ibid*, 221). Unfortunately journeys safely accomplished do not merit the same sort of interest!

Ecclesiastical links of a cultural kind must have existed at this time, and the cult of the martyred Earl Magnus spread throughout the north Atlantic, as of course did the cult of the holy king of Norway, Olaf Haraldsson. Faith in these local holy warriors created a north Atlantic community linked by hope of assistance, as the miracles recorded in Magnus' name clearly tell us. From these we have evidence of ordinary people travelling from Iceland, and Faeroe, as well as from Shetland, to the shrine at Kirkwall in the hope of cures (*OS*, chap 57). From another saga source a miracle is recorded as having been performed for an Icelander at the Church of St Magnus in the Faeroes (Cormack 1994, 120). This was the cathedral of the Faeroese diocese at Kirkjubøur, which was dedicated to Magnus, and he was co-patron of five parish churches in Iceland, the majority of them in the southern diocese of Skalholt (*ibid*, 121). There still survives the remarkable carved shrine located on the outside of the east gable wall of the Cathedral at Kirkjubøur (which was built in the 14th century, but never finished) and where relics of the saint were contained–as they still are. A relic was obtained by the cathedral of Skalholt in Iceland in 1298 (*ibid*, 119). For such relics to have been given by the ecclesiastical authorities in Orkney to their neighbouring bishoprics in the north tells of close ecclesiastical connections which are poorly documented otherwise.

According to the miracle book of St Thorlak, the holy bishop of the diocese of Skalholt in Iceland, there was an attempt to institute a regular offering of meal (probably oatmeal) from Shetland to the Icelandic saint. This was urged by a Shetland lawman called Havard who at the beginning of the 13th century attempted to get each farmer to make a gift of meal to the saint's shrine in Iceland, and it was said to have been sent that summer (1209) and for a long time afterwards (Thorlaksson 1979, 65). But this cult cannot have been firmly rooted in Shetland, from the apparent absence of church dedications to Thorlak.

In the 13th century the world of the north Atlantic was linked together by cultural and economic interests. Indeed, when Norway was bound up with its own internal political struggles there was nothing to prevent useful trading contacts being maintained between Orkney and Shetland and the northern communities of Faeroe, Iceland, and possibly even Greenland. The troubles in Norway would act as a deterrent to trading with the home country and probably led to Icelandic merchants preferring to import their necessities from the island groups to the south (*ibid*, 70). The growth of a strong, unified monarchy in the mid-13th century, which strove to draw Iceland under its political control is likely to have disrupted this economic network, and conditions were imposed on trading in and out of Iceland by the treaty of 1263, when Iceland became part of *Noregsveldet* ('the Norwegian world').

2.5 CHANGES IN THE LATER MIDDLE AGES

From the mid 14th century onwards we can perceive big changes taking place in Shetland's situation, which reflect the turbulent scene on the wider European canvas. It is easy to attribute these to the economic misfortunes of the later middle ages resulting from the effects of the Black Death, but as far as Scandinavia is concerned these effects cannot be over-estimated. All historians are agreed that the demographic effects of plague on a society living in some respects at the limits of human existence must have been disastrous. There was no surplus population to fill the gaps left by a pandemic which probably removed nearly half of society, as there was in more lowland areas of Europe. We have no details of the impact of the 1349-1350

visitation on Shetland, there being only one brief entry in the Icelandic Flatø-annals recording that it came to Shetland, Orkney, the Sudreys (Hebrides) and Faeroe (Storm 1888, 404).

The long-term political results must certainly have been significant, for the kings of Norway were drawn to the richer lands of southern Scandinavia, and became linked with the royal house of Denmark by marriage. This led eventually to the formal union of the three crowns at Kalmar in 1397. Inevitably Norway and the skattlands were administered by Danish officials and the reality of power was vested in the few families with large feudal grants of land who came to dominate events in the north.

2.5.1 ECONOMIC LINKS WITH THE HANSA AND ECCLESIASTICAL CHANGES

Alongside this opening-up of Norway to southern influences went the increasingly-dominant position of the Hanseatic League in the economic sphere. German merchants had had a *kontor* established in Bergen since the late 13th century, but they were restricted in their attempts to trade with Shetland and the other skattlands by being forbidden to sail further north or west (Friedland 1983, 87). That is not to say that such voyages did not take place, and it is likely that there were direct trade connections between Hanseatic merchants and Shetland before the first historical evidence of any such visits, which is from 1415 (*ibid*, 88). The closest links seem to have been with the north German port of Lubeck, but the trade was meant to be directed through the fish staple of Bergen. This economic network was of the greatest importance to Shetland throughout the 15th and 16th centuries. The links with Northern Europe extended wider from the late 15th century when Dutch merchants were also given the privilege of visiting Shetland and Iceland (*ibid*, 89). Already by 1540 the presence of Dutch fishermen in the waters off north Scotland, and near Orkney and Shetland, was causing tension with Scottish fishing boats (Kranenburg 1983, 99). The North Sea world in this period was driven by its own internal dynamics, and the direct link with Scandinavia was not necessarily the most important element any longer.

The evident vacuum in political authority following on the collapse of the independent Norwegian kingdom in the second half of the 14th century left Shetland open to Scottish power-seekers, among the first of whom were churchmen. The dearth of native Norwegian clerical personnel in the wake of the plague epidemics encouraged Scots to seek appointment to the higher positions of the Church in the Northern Isles. Scottish bishops were followed by Scottish archdeacons, the most important church officials in Orkney and Shetland: William de Wood, William de Buchan and Walter de Buchan, archdeacons of Shetland in the 1370s and 1380s, are clearly Scots (Watt 1969, 261). The tensions caused by appointments of Scots in a deeply conservative society are brought out in a remarkable document dating from 1369 in which the Norwegian 'governor' of Orkney and Shetland and the bishop of Orkney and Shetland came to an agreement to appoint 'good native men of the Orkneys and Shetland' and ' the most powerful men in the Orkneys and Shetland' to all councils 'as regards the king, the church, and the people, according to the laws and custom of the country' and in the bishop's service (*Orkney Recs*, 17; *DN*, i, 404). This agreement documents the clash between the old system of Norwegian over-lordship, represented by Hakon Jonsson, the heir to Lord Thorvald and his heiress Fru Herdis (**3.1** below) and the newer forces of Scottish power led in the absence of an earl by the bishop. The list of those men before whom the agreement was sworn included, significantly, a John Sinclair.

2.5.2 ARRIVAL OF THE SINCLAIRS

The second half of the 14th century also saw a vacuum as far as the earldom of Orkney was concerned. Due to the death of Earl Malise in the middle of the century leaving five heiresses, a period of turbulence ensued lasting 26 years, during which the husbands and sons of the heiresses fought it out among themselves for control of the earldom lands and rights. Two of the grandsons of the last earl were Scots, and the eventual success of the Sinclair claimant saw the arrival of a new and powerful Scottish dynasty in the north (Crawford 1971; 1983, 36-7). In 1379 Earl Henry Sinclair had to promise King Hakon VI in the charter issued at his Installation that he would not alienate (or sell) any lands or islands of the earldom away from the king, and in the same year he issued a charter at St Andrews announcing to those who might be interested that he was unable to do so. Although such a promise would not concern Shetland, which was not part of the earldom (and did not become so under the

Sinclairs either[9]) there is no doubt that the Sinclair clan considered Shetland to be a part of their fiefdom in the north. Earl Henry probably set out deliberately to incorporate Shetland within his earldom 'in fact, if not in law'.

In the process of doing so he embarked on a bitter feud with his cousin, Malise Sperra, who had claimed the earldom also. This was probably against the authority of the king of Norway – a situation which may be reflected in the Zeno letters[10] – for the likelihood is that Malise was the royal 'foud' in Shetland (Crawford 1983, 38). As a rival with royal authority, and with a claim to the earldom (which had only been granted to Earl Henry on the condition of good service) Malise was a dangerous impediment to the complete establishment of Sinclair authority in the Northern Isles. It is not surprising, therefore, that (reminiscent of former events in saga times) the two came to blows in order to clear the ground for the complete establishment of power by one individual. The dramatic climax to the struggle took place in Shetland, and according to tradition was fought out at Tingwall, the site of the main lawthing assembly of the islands, although the entry under the year 1390 in the *Icelandic Annals* says only 'Malise Sperra slain in Shetland with seven others by the earl of Orkney' (Storm 1888, 367).

Thereafter the Sinclairs' route to dominating Shetland was open, and it is likely that their first possessions were the estates of Malise Sperra in Shetland which reverted to his cousin, Earl Henry, because Malise himself had no heirs (Crawford 1983, 38). A charter drawn up in Kirkwall in the next year refers to Sinclair family lands in Orkney and Shetland and is witnessed by Shetland notables as well as Scottish followers of the Sinclairs (*Orkney Recs*, XII) This gives us direct evidence of Sinclair control in Shetland which opened the way to the arrival of Scottish personnel, the process leading rapidly to the situation where Sinclair family and friends were granted royal lands and rights in Shetland in the early part of the 15th century. To what extent this led to a 'Scotticisation' of Shetland society is unclear; these incomers would have to work inside the established local system, and the fact that they were granted royal lands and rights suggests that they were acceptable to the Dano-Norwegian kings. The latter of course were too far away to be much concerned with the method by which their remote island possessions were governed.

2.6 SHETLAND UNDER THE SCOTTISH CROWN

In the changing international world of the late middle ages, the survival of a situation which had come about in the quite different early medieval age (when Norway's maritime communications gave her kings a technical edge over more territorialised kingdoms) was bound to end one way or another. The growth in power and authority of the Stewart kings of Scotland meant that they would aspire to bring under their authority all the island groups lying around the coasts of their kingdom. This had been achieved in the case of the Western Isles (or *Suðreyar* = 'Southern Isles' to the Norwegians) through the failure of the Norwegian kings to maintain personal contact, and in the case of King Hakon Hakonsson's expedition of 1263 his personal failure to make an effective military impression. In the case of the Northern Isles it was achieved by aggressive diplomacy on the part of James II and III and their councillors, who played upon Christian I of Denmark and Norway's need for a prestigious marriage for his daughter, and his impecuniosity (Crawford 1969: 1983, 40).

2.6.1 THE PLEDGING AND ITS EFFECTS

The pledging of Orkney in the 1468 marriage treaty for the dowry of 50,000 florins of the Rhine which Christian was unable to come up with is extraordinary enough: the addition of Shetland in 1469 for the remaining 10,000

[9] Although Earl Henry promised in his Installation document to protect Orkney and Shetland in the case of any invasion this is the only mention of Shetland in that document, and does not suggest that the earl had powers in Shetland as part of his earldom grant (see arguments in Crawford 1983, 36-7).

[10] These are very difficult texts concerning the service of two Venetians with a nobleman who has been identified with Earl Henry Sinclair of Orkney. They are later copies of letters telling about their activity with the prince 'Zicmni', their campaigns in Shetland and the Faeroe Islands and their voyages to the New World across the Atlantic. As far as Shetland is concerned there is nothing tangible that can be acquired from this narrative except the general impression that Earl Henry was at enmity with the king of Norway, his overlord, through attempts to conquer Shetland (see translation by RH Major, *The Voyages of the Venetian Brothers Nicolo and Antonio Zeno*, Hakluyt Society, ser i, vol 1, 1873). For recent critical reviews of the controversy see Cuthbertson 1996; also lecture by B Smith entitled 'Why he didn't go' at the Orkney Symposium on the Sinclair voyages in Sept 1997.

florins which he had agreed to collect together – of which he seems to have been able to find only 2,000 florins – marks an ignoble end to Shetland's place in the former Norwegian maritime empire. What was probably intended to be only a temporary change in national status turned out to be permanent by default, and Orkney and Shetland were politically part of the kingdom of Scotland thereafter. Whereas the Western Isles had been in any case culturally part of the Gaelic world of the multi-ethnic Scottish kingdom prior to 1263, the Northern Isles – certainly Shetland – were in every respect Norse societies still, despite the arrival of Scottish ecclesiastical personnel and the Sinclair family, already mentioned. Links with the Scandinavian homeland were not easily severed.

However, the political change meant that changes in the traditional Shetland social structure followed. For the first time since 1195 Orkney and Shetland were combined together and administered together (Crawford 1983, 47). Shetland's nature as a distinct archipelago, and the different administrative set-up, was however recognised in its designation as the 'lordship of Shetland' from 1472 onwards. The 1472 annexation of the earldom of Orkney and 'The Lordship of Shetland' is the first time that Shetland is given that title and it signifies the separate nature that it had, distinct from the earldom of Orkney to the south. The Scots obviously saw Shetland as a discrete administrative unit, and in documents thereafter there is reference to 'the lordships of Orkney and Shetland'. Income was kept separate and for the first time the financial value of these islands appears in royal record; annual income from Orkney amounted to £9750 and from Shetland £4210 in the 1540s (Anderson 1996, 178).

Grants made by the kings of Scots, of leases first, then feu-grants, then a re-creation of the earldom created new circumstances. The impignoration (pledging) of the islands resulted in an influx of Scottish professional men, administrators and lawyers (H Smith 1984, 29: B Smith 1990, 29) strengthening the ecclesiastical changes of personnel a hundred years previously. Indeed the church continued to be 'the main instrument of Scottish immigration' (Donaldson 1983, 10).There were also incomers into the landowning classes, with the Sinclairs in the van, followed by other Scottish families who saw opportunities of different kinds opening up in a society which lacked any strong political authority close at hand.

The turmoil which followed on the resignation of the ancient earldom of Orkney in 1470 probably had less effect as far as Shetland was concerned, because there were no earldom lands and rights in Shetland.

Some stability was restored to these island communities once the grandson of the last earl, Lord Henry Sinclair, acquired a grant of the tacks of the earldom and lordship in the 1480s. He seems to have been content to allow an uncle to have full control in Shetland and this period is illuminated by the remarkable career of the bastard son of the last Sinclair earl, Sir David Sinclair of Sumburgh, who built up a power base in Shetland based on the family lands which he gathered into his own hands, and on his own territorial acquisitions, as well as on grants of authority from both King Hans of Denmark-Norway and James III of Scotland (Crawford 1978, 5; 1985b, 248). His career shows very clearly how the old links with Norway were maintained, but also how the links with Scotland were becoming just as important-and indeed weighed more heavily with Sir David, who had to decide which of his two lords, the king of Denmark-Norway or the king of Scotland was going to have prior claim on his loyalty (Crawford 1978, 7-8). The history of the struggles over his estates after his death indicates the sort of disruption caused by the demise of powerful individuals, particularly when, like Sir David, they left no heirs. There was internecine fighting among the various descendants of the last Sinclair earl (Crawford 1985b, 247-9) although most of the bitterness seems to have focused on Orkney (Anderson 1996, 180)

Naturally the change from political domination by Norway to that of the kingdom to the south, Scotland, (with the attendant disruption in many spheres of political and social life) was not achieved easily. The freeing of the old social structures allowed the domination by certain families, most of them descended from the last Sinclair earl, with the crown struggling to assert control, through its appointees, sometimes more successfully than others (Anderson 1996, 178). The rule of the Stewart earls from the mid 16th to the early 17th centuries saw some political stability in the islands, although that period was punctuated by several upheavals, not least the investigation into the Complaints of the Commons and inhabitants of Shetland by Regent Morton in 1577.

2.6.2 THE MAINTENANCE OF OLD LINKS

It is well-known that for some decades, indeed centuries, after the transfer to Scotland Shetlanders continued to look to Bergen for settling of their legal matters. Documents concerning land transactions continued to be written in Dano-Norwegian. A decision made by the lawman of Shetland in 1532 was confirmed by the Norwegian king's court in Bergen in 1538 (Robberstad 1983, 54), and judgements made in Shetland continued to be made according to the Gulathing law and Magnus *Lagabøter*'s amendments up

until the abolition of the laws of Orkney and Shetland by the Scottish Privy Council in 1611[11]. This act made no difference to the continued practising of Norse customs of udal inheritance and land-ownership , although feudal tenures did increasingly appear from the times of the Stewart earls. The maintenance of old social links and the continuation of a common legal inheritance is witnessed by the career of Guttorm Nilsson, a Norwegian nobleman of the early 16th century who was married to an Icelandic heiress and lived in Iceland for some years, after which he was lawman of Bergen and the Gulathing, and as such attended a local judicial meeting at Melby (in Sandness on the Shetland Mainland) in 1511 (Robberstad 1983, 56).

There were moreover powerful elements in the Norwegian landed classes which reacted with dissatisfaction to the new situation which they understood to be against their own interests. In 1485, the Scottish Exchequer Rolls record an exemption on the Shetland account because of spoliation and plundering in the islands by 'the lords of Norway and their agents' (*dominos Norowegie et commissarios earundem*; *ER*, ix, 306). This group continues to feature in the history of Shetland for the next two hundred years, although never again in this violent fashion. At this point in time they were powerful Dano-Norwegian landowners who held lands in Shetland additional to their west coast Norwegian estates, and the largest holding of Shetland lands was inherited from Thorvald Thoresson and his daughter Fru Herdis (see **3.2.1** below). The incident of 1485 mentioned above may reflect a reaction to the arrival in the north of Lord Henry Sinclair in 1480, who succeeded to the 'conquest' lands acquired by his grandfather, the last earl, and who also succeeded in acquiring a sub-tack or lease from the bishop of Orkney of the royal rights and lands throughout Orkney and Shetland soon after (Crawford 1985b, 242; Thomson 1996, ix). Sir David Sinclair's rule in the islands probably calmed Norwegian fears about their legal and tenurial rights in Shetland, for he was essentially the proponent of the status quo. Remarkably enough the continued possession of Shetland lands by landowners normally resident in Norway, and increasingly Denmark, was tolerated by the Scottish crown. Because of their status and connections they were able to retain their Shetland lands and what's more, to gain acknowledgement of their rights from the political authorities in Scotland (B Smith 1990, 30). As rentiers they were primarily interested in seeing annual returns from these lands, but they had to engage the services of incoming Scots to run their estates for them and to return the rents to them in Norway. This continued connection may well have been important in forging links between Norway and Scottish incomers, some of whom (like the Mowats) then moved into the highest echelons of Dano-Norwegian society (Crawford 1984a, 53-4 and see **3.2.2** below). The 'heritable tacks' of the Shetland lands eventually turned into direct ownership by the Scotto-Shetland lessees as the Scandinavian families' interest dwindled (H Smith 1984, 32; B Smith 1990, 34; see **3.2.1**. below).

Commercial and social connections were maintained between Shetland and western Norway for many centuries after 1469, and until the 1680s Shetlanders looked to Bergen as a source of livelihood and employment. Many names appear in documentary sources of this period, as residents and tradesmen in Bergen (often recognised by the surname 'Hjelt'). There is evidence that the governors of Bergenhus drew on Shetland and Faeroe for young men and women to be in service in the castle workforce in the first half of the 16th century (Daae 1895, 43-4), maybe maintaining long-established arrangements. Islanders traded toll-free with Norway until 1580 (Helle 1988, 26), but trade between Shetland/Orkney and western Norway continued thereafter based on the development of the Norwegian timber industry (H Smith 1984, 35). This focused on requirements of different categories of wood products, including as far as Shetland was concerned 'stockstove' houses and prefabricated boats (**8.3.1** below). Four-oared and six-oared boats of the 'Oselver' type were exported in large numbers to Shetland throughout the 16th and 17th centuries, which would be used for the cod and ling fishing (Helle 1988, 27). German merchants were also still active in Shetland and this period has been seen as a 'Golden Age' with flourishing inter-connections around the North Sea, from which Shetland clearly benefited (B Smith 1990, 32).

One of Shetland's former staple products, homespun woollen cloth ('wadmel') which must have brought wealth to the islands, was no longer being produced in great quantity by the end of this period. This is suggested by the decline in 'wadmel' exports, which was probably linked to the fact that it had ceased to be the most important item in rent and skatt payments *c* 1640, and was replaced by money equivalents thereafter (H Smith 1984, 37). Woollen cloth was produced still for domestic use but probably declined in quality, and would appear to have been replaced as an export item by woollen (knitted) stockings.

[11] From the 1560s there is evidence of one of the first Shetland lawsuits to be heard before the Court of Session in Edinburgh (Smith 1996, 97), in which Henry Sinclair of Strom was pursuing, on behalf of a Shetland woman, a Scottish incomer who had control of the Noss estates of one of the 'lords of Norway'.

2.6.3 THE BREAKING OF OLD LINKS

As in the 14th century it was the Church which acted as the most powerful and effective agent of Scotticisation in the century after the impignoration. Although nothing was said about the situation regarding the bishopric of Orkney in the political arrangements of 1468-1470, only two years later (1472) it was included in the papal bull, (along with the diocese of the Isles or Sodor), which erected the bishopric of St Andrews into the metropolitan see of the kingdom of Scotland (Dowden 1910, 12). It is not at all clear that this was royal policy, or whether it simply happened by decision of the clerics concerned (Thomson 1987, 125): in any case such technical administrative changes had little immediate effect on the situation in Shetland. The confusion which reigned is very evident from the disputes which followed regarding the right of presentation to the archdeaconry of Shetland, and the grant of church income to Sir David Sinclair by both Scottish **and** Norwegian kings (Crawford 1978, 3; Thomson 1996, xviii).

The medieval Church was itself just beginning to undergo the upheavals which led up to the Reformation, affecting both Scotland and Scandinavia deeply. The Scottish form of presbyterianism was introduced to the Northern Isles, although without the violence that attended its imposition further south[12]. The reformed ministers of the kirk who were installed throughout the islands and who used Scots-English speech in public worship (much of which consisted of preaching) must have been the most effective agents of change, through which the whole population was subjected to a most thorough process of assimilation to Scottish culture. These ministers of course married and established dynasties whose names are still common in the islands (Donaldson 1967, 77). It has been estimated that by 1600 most people in Shetland understood Scots, and the displacement of Norse (or Norn as the variant of the Scandinavian tongue is known) was beginning (*ibid*).

However there was possibly little change in the structure of society and social ordering until after the period of Stewart earldom rule. Robert and Patrick did little to effect any great change by design; they were more concerned to use the existing system to their own advantage. The antagonism to their rule, or the rule of their deputies was mainly aroused by the misuse of a system which was alien to them and which they had little respect for. Patrick's reputation as the destroyer of the law-book of Shetland is probably unfounded (Anderson 1992, 12). It disappeared in the aftermath of his downfall and the Scottish Privy Council's abolition of the Norse laws of Orkney and Shetland in 1611. This was the big break with the past alongside which went a changing social structure as a result of the increased feudal tenures from the Stewart period. The introduction of a primogeniture system of inheritance of these estates led to the rapid growth of larger blocks of landholding and increasing disparity between rich and poor. The older udal families started to fill the position of a subjected tenantry (Donaldson 1967, 77).

By 1700 most families working the land had become tenants of the larger landowning families with Scottish ancestry, and the political changes which took place at this time, (the formal Union of the Scottish and English parliaments) meant that Shetland was tied into a British economic and political system which functioned at an even remoter level than previously (Schei 1988, 47). Political decisions made from the point of view of a government in London, whether controlling the import of salt, or embarking on war with the Dutch, had a very important, and usually unfortunate, spin-off for the people in the most northerly islands of the British Isles. Some developments, such as the need for kelp in the later 18th century, as well as the need for manpower in the Royal Navy from the middle of the century did help to provide a means of livelihood for the islanders, even if not always a welcome one. This involvement in British enterprises would bring money and materials from markets in the United Kingdom. But there were still the old traditional supplies coming in from Norway (H Smith 1984, 78-9) and the illegal trade of smuggling continued to provide a few luxury goods from other areas of Northern Europe. Always, Shetland had a wider role to play than merely as a northern appendage of the British Isles, because of her position in the centre of rich fishing grounds.

2.7 THE IMPORTANCE OF FISHING

The most important of Shetland's exports in the post-medieval period was always the abundant fish caught in the waters around the islands. It may be that this important economic resource had already in the late Norse

[12] These circumstances meant that customs of the medieval church survived longer in Shetland than anywhere else in Scotland, and the use of the sign of the cross did not disappear in the mid 16th century (Donaldson 1967, 73)–a fact relevant to the discovery in an early modern phase of a wooden lid with a cross on it as described in section **7.2** below.

period formed a significant export from the islands, and this is an aspect of Norse society which the discovery of large quantities of fish bones in archaeological excavations in the Northern Isles has recently opened up (Bigelow 1985, 1992; Barrett 1997). It was this natural wealth which certainly attracted the German merchants to the islands from the 15th century onwards (Friedland 1983): then after 1500 the Dutch fishing fleet in search of herring came north, reaching its peak of importance in the 17th century (Kranenburg 1983, 100). There were also Scots and English fishing boats on a smaller scale. Until 1700 fishing for commercial purposes by Shetlanders themselves seems to have been pursued no further than five or ten miles offshore, in the 'fourern' (four-oared) boats (H Smith 1984, 46).

With the expansion of the 'far haaf' (deep sea) fishing in the 18th century, which necessitated the development of the 'sixern' (six-oared boat), the growth of fishing stations nearest to the more distant fishing grounds became a very marked feature, where the catch could be brought in for curing and drying. This was a very labour-intensive operation and the fishing stations attracted seasonal labour from internal areas (H Smith 1984, 51, 54).The growth of about twenty legally-defined trade points in the peripheral coastal areas mark the important distribution and rent-collecting centres, and Papa Stour features as one on all maps of trading harbours in this period (*ibid*, fig 11). Such organisational operations could only be conducted by powerful and wealthy merchant-lairds and the whole social structure of the islands revolved around the operation of this fishing system. Papa Stour thus came eventually into the possession of the powerful Gifford and Nicholson mercantile families in the early 18th century (discussed further in **3.4.1** below). A complex interweaving of landownership with commercial necessity meant that the lairds contracted with their tenants for the supply of fish and in return supplied boats, lines and gear as well as food and drink supplies for use at sea (*ibid*, 56). Rental arrangements were also involved, and in return for rents paid in butter, increasingly fish oil, and money, the landlord was obliged to supply housing and often stock and seed corn on credit. By the end of the 18th century rents were increasingly being paid in fish, tenants were bound to purchase their necessities at the merchant lairds' store and a truck system was in the making (Irvine & Morrison 1987, 48-50).

The species of fish involved in this intensive activity was primarily ling and cod, with small quantities of herring salted in barrels, and the production of fish oil. From the middle of the 18th century the Greenland whale fishing becomes another aspect of the Shetland fishing saga (although the killing of whales stranded in the voes and bays of the islands must always have been one of the benefits of nature in these latitudes). The taking of large numbers of men away from the home fishing to the northern Arctic waters was not always appreciated by the fishing lairds who complained of a shortage of labour. The population of Shetland in general maintained a static level until the development of inoculation against smallpox in the last decades of the 18th century when it started to rise steeply; nor was there any great emigration to the colonies at this time.

The 19th century saw the development of the herring fishing by large joint-stock companies like Hay and Ogilvie who in 1839 had a curing station on Papa Stour, although developments in fishing from then on tended to congregate away from the west coast clustering more particularly in the south Mainland and on Unst (H Smith 1984, figs 25 and 27). The rise of Lerwick as a centre of trade, particularly for the eastern side of Shetland, meant that peripheral western areas were not well-placed to benefit from the increased business for traders and the market for rural products. The fisheries continued to flourish until the late 19th century although merchant companies replaced the landowners as the controllers of the fishing industry with whom the fishermen were bound to trade. The truck system gradually broke down after the enquiries of the Truck Commission in 1872 (*ibid*, 155). By this date the population figures were beginning to decline from the period of the growth of population to its highest level when the pressure of people upon resources had led to hardship in many parts of Shetland. This had been exacerbated by some Clearances by landowners on certain estates, although plans to depopulate Papa Stour came to nothing.

The availability of fish and the attraction this had for fishermen of many nations; the different kinds of fish and the different methods of catching this food from the sea; the stimulus thus presented to middle-class entrepreneurs who exploited this resource for supplying the growing markets of the south: all these factors make the modern history of Shetland quite distinctive and different from any other part of the British Isles. It brought outlying areas into the mainstream of economic development, and it created a society that was in touch with the wider world. The one unchanging geographical element lying behind all of Shetland's history was, of course, the sea, which has exposed it throughout history to the wide influences coming in from 'a' the airts'. And an island off-shore from another group of islands, such as Papa Stour, was even more exposed and dominated by this element, surrounded by it – 'like a mantle the sea'[13].

[13] The apt title given to the book of reminiscences of life in the island during her time as school teacher, by Stella Shepherd (1971, 1994).

3

PAPA STOUR IN HISTORY

Barbara E Crawford

3.1 SETTLEMENT HISTORY

The former presence of man is visible everywhere on Papa Stour. Prehistoric homesteads and enclosures lie uncovered across the landscape west of the Hill Dyke, showing that far more of the island was under some sort of cultivation at a time of better climatic circumstances. Tumuli, burned mounds, a cremation cemetery, and a chambered cairn on Round Hill provide monumental archaeological evidence of prehistoric populations all over the island (RCAHMS 1946, no 1690-1696, 1707). A possible broch (Muckle Heogan) indicates Iron Age populations, as does the 'Erd House' (earth-house), recorded on older maps at Northouse, now completely eroded away (*ibid.* 1689, 1703).

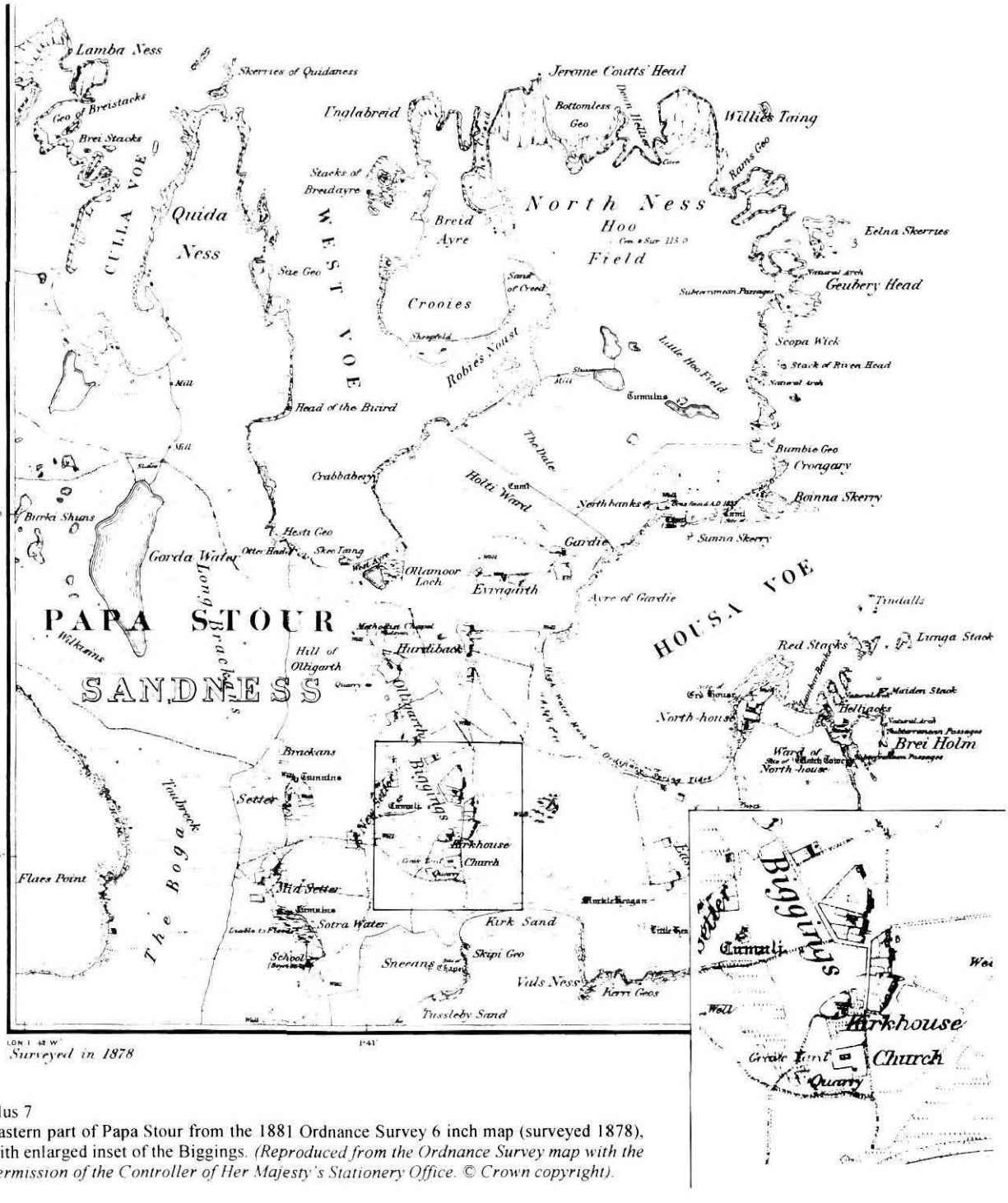
3.1.1 THE 'PAPAR'

Coming to the centuries before the Norse settlement of Shetland we would expect to recognise some traces of the Pictish population which left its mark in many other parts of these islands (**2.1** above). The 'papar', after whom the island was called by the Norse 'Papay' (ON *papar-øy* = 'the island of the priests/fathers'), are not too well defined by historians or archaeologists. Indeed, the 'papar' were rather mysterious figures even to the more recent descendants of the Norse settlers, as far as can be gleaned from a History of Norway (*Historia Norvegiae*) written *c* 1200. The author of this history, who knew something about the settlement of the Orkney Islands from local tradition (recorded nowhere else) divides the indigenous population of the islands into two 'races' (*nationes*), the *Peti* (Picts) and the *Papae* (fathers) (Munch 1850; Storm 1880; Crawford 1987, 166). Knowledge of the former had been reduced to the level of folk-myth by the time the History was written down; knowledge of the latter retained some very interesting insights. In the first place the 'papar' were remembered as being quite distinct from the Picts; and indeed to have been a clerical caste from their robes, although they were not recognised as Christians (as they were by the Vikings in Iceland)[1]. These priests of the Celtic Church made a deep impression on the arriving Norsemen-as they did also in Iceland, where stories survived of the 'papar' who were found there when the settlement of the North Atlantic got under way in the late 9th century (one century or more after the settlement of the Northern Isles) (*Book of Settlements*). The survival of independent traditions about the priests of the Celtic Church from places far apart in the north Atlantic is testimony to the lasting impact made on the Norsemen by these missionaries and hermits of the Irish Church.

The *Historia Norvegiae* also mentions that a certain island was called Papay after them; in fact there are three islands whose names record some association with the 'papar' in Shetland and two in Orkney (Papa Westray and Papa Stronsay) along with many Papils and several Pabbays in the Hebrides (Lamb 1995, map 2.3)[2]. The largest of the Shetland islands is Papa Stour (the second element deriving from ON *stórr* = great, although the adjective is not always attached to it in medieval references; Crawford 1984a, 43). The reason why these particular islands and other places were associated with the 'papar' is never explained, but this surviving toponymic element must indicate known settlements of Celtic priests. They cannot all have been communities of the sort who sought out far-off island retreats, as in the Faeroes or Iceland, for lives of contemplation and solitude, or remote rock stacks such

[1] They were said to be associated with Judaism and thought to have their origin in Africa – a statement perhaps indicating some awareness of the Irish Church's eremitical element originally derived from the desert traditions of the early fathers.

[2] There is also a Papey island off the coast of south-east Iceland, where archaeological investigations revealed nothing which could be convincingly linked with any Celtic settlement (Eldjarn 1989).



illus 7
Eastern part of Papa Stour from the 1881 Ordnance Survey 6 inch map (surveyed 1878), with enlarged inset of the Biggings. *(Reproduced from the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationery Office. © Crown copyright).*

as are known throughout the Northern Isles (Lamb 1995, 17)[3]. The Papay islands are mostly very fertile and only just off-shore from well-settled centres of population (*ibid*, 15-17; Crawford 1984a, 43), so that the communities living in them would have been in touch with the secular world. Their island gave them the physical detachment from that world, and provided a separateness which they clearly desired to have and which was necessary for the fulfilment of their religious vocation. One has only to think of Columba's settlement on fertile Iona, an island off the larger island of Mull to understand how subsequent communities dedicated to perpetuating Columba's

[3] The commanding rock-stack at the entrance to Housa Voe on Papa Stour, called Maiden Stack, or Fraua Stack, has the remains of stone walling surviving on it. This has been associated with a later monastic establishment rather than early Celtic hermits (Lamb 1975-6, 149; Crawford 1984a, 43).

mission and coenabitic life-style may have sought similar small islands lying off larger islands for their religious base, where missionary teaching work would be undertaken by them.

Apart from the name there is nothing else to indicate the former existence of a Celtic religious establishment on Papa Stour, or any association with one. No carved monument from this period survives, although a large and curious stone in the churchyard was recorded by the minister in 1797 (Sinclair ed, 1797/1978, 533-4). No early Christian church site has been identified, although the chapel site at Sneeans might, on investigation, prove to have had pre-Norse origins (illus 7). If there was such a Celtic religious establishment we have to assume that later Norse settlement of an intensive nature has obliterated any traces of its existence. It would be difficult in any case to know exactly what to look for. Very little of the early church structures have been found on Iona, where so much else has survived from the period of the dynamic and flourishing Columban community (Ritchie 1997, 37-43). Only the survival of the name itself, or rather the naming of the island after the 'papar' whom the Norsemen came into contact with on their arrival, gives us the strong hint that their presence was a significant factor in the Norsemen's naming process. Not only did the latter recognise the dominant presence of the priests they may also have allowed them to remain in possession, or at least in residence, for sufficiently long for their association to be a remembered fact worth naming the island after.

The process of settlement by incoming Vikings and their relationship with the native residents of the Northern Isles are factors which have formed the basis of much dispute and the matter is still a very uncertain chapter in the history of the Viking impact on Scotland (**2.2.1** below; Crawford 1987, 146-8). The question is not, however, too relevant to our consideration of the background to the excavations at the Biggings, where evidence for any pre-Norse settlement was not found in the archaeological record. It is, however, relevant to the history of Norse settlement in the island and to the date of that settlement. If we believe that the 'papar' may have been allowed to continue in possession of the island for a significant period this would mean that Papa Stour was not one of the earliest 'foci' for Norse settlement in Shetland. Given what has already been said about the usefulness of this island on the sailing route between Norway and the Orkneys this would be rather surprising. It is hardly possible to prove it one way or the other by looking at the place-names to see if any early settlement naming process can be traced. The evidence for this has been discussed before; and the danger pointed out of following Marwick's view that absence of *býr*, *bólstaðr*, and *staðir* elements on Papay islands might indicate a period of tolerance on the part of the Vikings towards such Christian Celtic establishments (Crawford 1984a, 46). The present corpus of farm-name elements cannot be relied upon to provide us with a comprehensive record of all previous names given in such islands [4]. Moreover researchers are much warier nowadays of fitting certain name elements into a fixed chronology or of believing that the process of settlement can be tracked from a particular century or half century (Thomson 1995, 47-9).

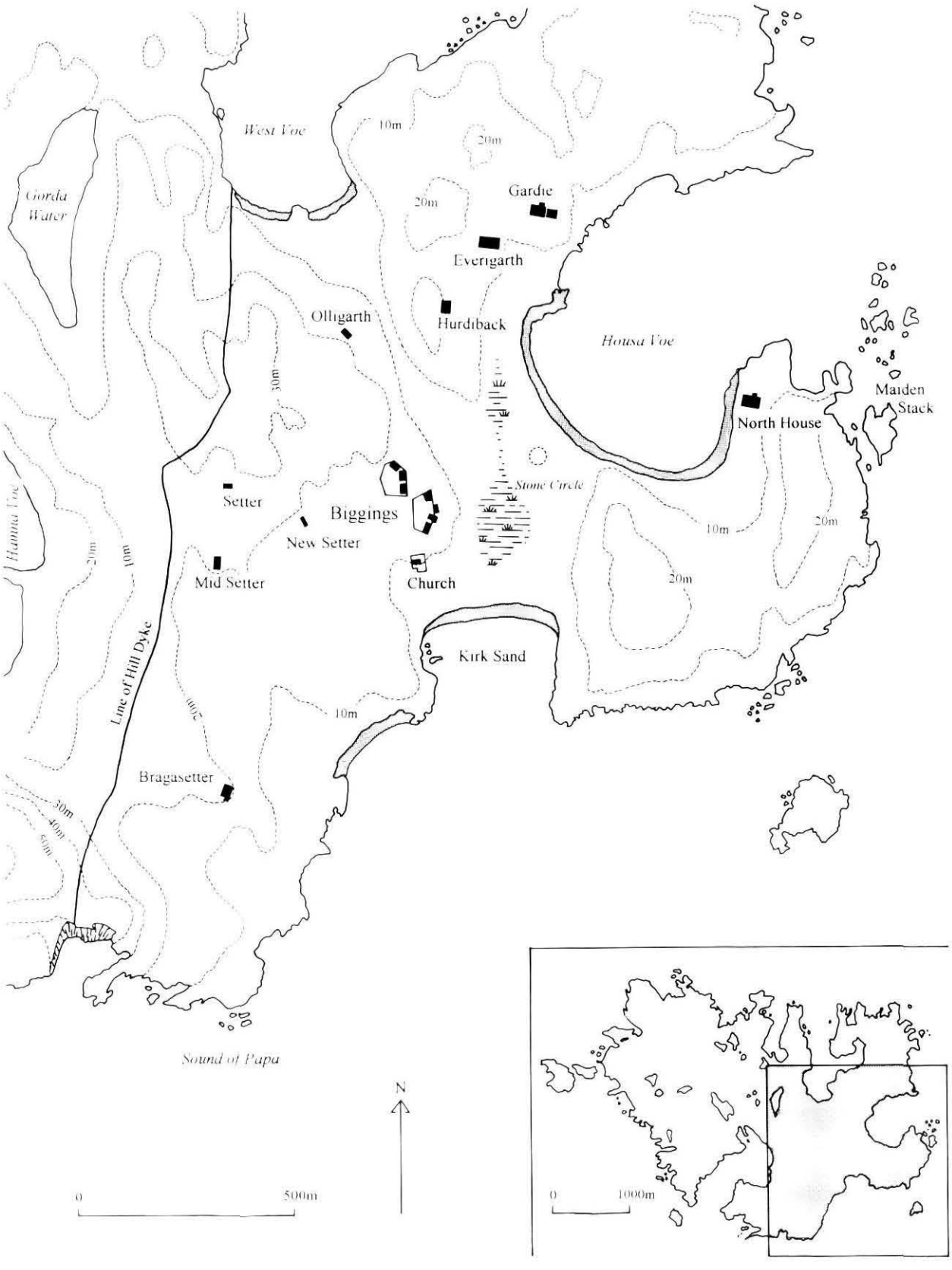
3.1.2 NORSE SETTLEMENT

As far as early Viking settlement goes, archaeological sites have proved elusive in Shetland, as elsewhere in 'Scandinavian Scotland'. Neither Jarlshof, nor Underhoull are considered today to date from the earliest *landnám* phase of Viking settlement. Nor has the Biggings yielded up any structural evidence of houses dating earlier than the 11th century, although there are traces of earlier phases (**5.5** below). We can say that it was indeed the 'central area of settlement in the Middle Ages' (Crawford 1984a, 45; also see Fenton 1978, 77), but this may have been a re-located settlement site. The name 'Biggings' itself only tells us that it was the most populous centre of island settlement in the late medieval and early modern period.

A more probable location for the house site of the earliest Norse colonisers would have been closer to the sea, and the excellent beaching facilities at Kirk Sand. Indeed the 'noust' site called Skipi Geo ('Ship cleft') on the south side of Kirk Sand is a good indicator of where ships could be drawn up: Kirk Sand remained the usual launching site for the island's boats until the pier was built on Housa Voe. There are strong local traditions of an early chapel site in the same locality as mentioned (at Sneeans), and a possibly significant *býr* name has survived in the name of the neighbouring beach (which is recorded variously as Thistleaby/Tussleby/Tisselby Sand)[5] (illus 7). Changing geographical circumstances of an adverse kind could

[4] The farm-name Estabuster (*yztibólstaðr* = outermost farm) is recorded in the 17th century (see later) and is thought to indicate a farm settled fairly early in the process of Norse settlement (Crawford 1987, 110).

[5] The only obvious meaning is 'thistle-farm' which does not suggest a very prestigious settlement site. This would appear however to be one of the 'Sand of [...]by' names cited by Thomson (1987, 27) as vestigial traces of early settlement units.



illus 8
Map of the eastern part of Papa Stour showing the location of the settlements.

illus 9
A view of Bragaster (ON *Breka Saetre*), the rental income from which was under dispute in 1299.

easily explain a move away to a new settlement site a few hundred yards inland from such an exposed situation, in the centuries following initial colonisation.

The Biggings location remained the central settlement of the island right up to modern times. Its elevated situation, between the 10m and 20m contour lines, gives the houses there a commanding position between the two bays: Housa Voe to the north and Kirk Sand to the south (illus 8). This location is on the fault line between the sandstone and rhyolite rock formations, at the head of the homefields of the Biggings farm which lie on an east-facing slope running down to the meadowland at Loch of Biggings and up the west-facing slope towards East Biggings (illus 8). The church lies about 100m to the south towards Kirk Sand. This was an excellent situation and characteristic in several respects of the Orkney 'bu' farms, the largest and richest farms in the islands which mostly formed the 'bordland' estates of the earls (Crawford 1985a, 134-5). All the other crofts north and west of the Biggings have names which indicate a satellite relationship with the Biggings, names ending in ON *setr*, *garðr*, *bakki*. These are typical of the 'umbesetts' or 'unsets' found around the Orkney 'bu' farms and established to form a pool of labour for the earldom estate, but not typical of Shetland settlement at all. Bragaster (Brekasetter or Bragasetter) at the southern end of the island (illus 9) is a farm which may however have been in a different relationship from the other 'setter' farms, from information revealed by the 1299 document (see below chapter **4**).

3.1.3 PLACE-NAME EVIDENCE

Our only evidence for the development of settlement on the island is that of the present place-names and ones no longer in use but which have survived in the written record. Changes have taken place in the nomenclature over the centuries, due to the increasing population, with the division of original farms and the creation of new units. In the first place the name 'Biggings' is not an original name but one which was applied to a populous core of settlement in the centre of the township. It probably had its origin in ON *byggd* (= neighbourhood/community) which was assimilated to the Scots 'bigging' (= building). An intermediate stage of this word's development is Bigtoun, and this form is recorded on Papa Stour in the 17th century (Crawford 1985a, 136). An older layer of name appears only in a 17th-century written record as 'Estabuster' (ON *yzti-bólstaðr* = outermost farm; Stewart 1987, 57), which must have lain at the furthest point away from the Biggings within the cultivated area. The existence of such a name indicates expansion of the original settlement and *bólstaðr* generics suggest sub-division (Crawford 1987, 110). It would seem most likely that

'Estabuster' was established somewhere out on the eastern headland[6].

That was by no means the end of the subdivision process. Parent farms were themselves divided frequently because of the *odal* method of inheritance and partible division among co-heirs. These new holdings took the *hus* names which are found so frequently in Orkney and Shetland today and the three main farming units on Papa Stour called North-house, Up-house and Souther-house appear in the written record. Some division of this kind had occurred before 1299 as a farm unit is referred to as Uphouse (*uppi i húsi*) in that document. Later rental evidence shows that these house divisions were large holdings as they are each assessed at 72 marks, making the total originally 216 marks, which is an unusually large and wealthy farm by Shetland standards. To begin with these house divisions would be located close to each other. But Northouse lies across Housa Voe from the Biggings: it became a very important farm in the early modern period and the seat of the Mowat family in the late 17th or early 18th century. When and why it was moved so far away from the Biggings is not at all clear, although in general the 'house' divisions did move further apart over the centuries (as discussed when the site of Uphouse is examined: see below **3.5**). As already suggested it may have replaced, or merged with the Estabuster division. Southerhouse today is the southerly division of the Biggings township and must always have been so. Uphouse was certainly at the core of the Biggings township from its remembered location, and seems to have been the most important element at the time of the 1299 arguments over the taxable status of the lands of Papa Stour.

A post-medieval record shows that there was a farm called Eldus (ON *eldr-hus* = fire house), and there was even a sub-division called Uthascoll (ON *úti-skáli*? = outer hall) Although these are not recorded until the 17th century they are likely to have been old by then. Where were they? Then there is the problem of the ruin called Turvalscord between Northouse and Forwick, which later tradition assumed was the residence of Thorvald Thoresson (**4.3.2** below) How do these names fit into the pattern of settlement on this intensely-settled island? We will probably never know. The whole history of Papa Stour demonstrates that there have been such great changes from the days when the Norsemen took it over until the days when we probed the story of their settlement at the Biggings, that a full and complete understanding of its earliest landholding divisions will never be achieved.

3.1.4 NORWEGIAN PERIOD: AN ADMINISTRATIVE CENTRE

However, the transmission of the island to its main property-holders is well-known from the Norse period, and this links Papa Stour to the story of the most powerful in Shetland's history right up to modern times. The situation and the fertility of the island were very good reasons for it being in the possession of the most mobile and the most dominant (as already pointed out: see chapter **1** above). The first landowners who resided at the Biggings at the time when the evidence of a house site is archaeologically proven are unrecorded. There are some pieces of tradition associating the island with the heir to the throne of Norway, and with the ladies-in-waiting to the Maid of Norway[7], which clearly derive from the known or remembered links which the island had with the crown of Norway.

Before those links existed – in the 13th century – it is not impossible, and in many respects it would appear probable, that the island had been a possession of the earldom family, at the time when Shetland was an integral part of the Orkney earldom (late 9th century -1195). Clearly the earls must have held possessions in Shetland and, as argued above (**2.3**), there are factors pointing towards a close association with St Magnus and the Erlend line, which held the northern isles of Orkney, and Shetland. From the known fact that Papa Stour became the property of the crown of Norway one might conclude that therefore it had previously been a possession of the earls which was forfeited by Earl Harald Maddadsson, after the submission of this earl for his involvement in the rising against King Sverre in 1193 (see **2.4** above). Perhaps it had been one of the 'great possessions' in Shetland of Olaf 'Earls-kin' who led the rebellion? There is little doubt that many of the earldom estates would have been granted out to members of the earldom family. In such circumstances the sub-division of the island into the component farms of Uphouse, Northouse and Southerhouse is understandable, whereas if it had remained in the hands of the earls such a development is unlikely, as the main

[6] Perhaps where Northhouse is today. The name Estabuster is only recorded in 1613, and the first recorded date of Northhouse is 1624/5 (*Register of Testaments* in Grant 1904, 59, 77).

[7] These were known by local historian, Miss Christina Jamieson, earlier this century (see report in *The Shetland News* of 25.10.34, and letter in *The Shetland Times* of 10.6.77).

'bordland' farms which the earls maintained for their own provision remained undivided[8]. Certainly all Olaf 'Earls-kin's' property would have been forfeited in 1195 as he was the main protector of Sverri's rival for the throne, Sigurd Magnusson.

Probably by this means Papa Stour became a possession of the Norwegian crown in 1195 ; we only know that in 1299 it was held by the royal prince Hakon Magnusson (who inherited the throne from his brother later in that same year). In the document of 1299 the royal farm is called *hertugaboenum* or 'ducal farmstead' (**4.1** below; Crawford 1985a, 130), and the young prince held the title of 'duke' at that time. It is not known if Hakon ever visited Shetland, either as duke or as king, but if he had then this would have been one of his farms, where he would have resided. In 1299 his *sysselman* (bailiff, official), Thorvald Thoresson, was certainly residing there while on his circuit round the islands collecting in ducal rents and taxes; it was these which caused the trouble with one of the residents of the island (**4.4** below). Hakon had been granted Shetland as part of his 'appanage', or princely fief, which he held along with the title of *hertog*. Thorvald appears to have been the main figure of authority in Shetland (during both Hakon's dukedom and his reign as king of Norway): indeed he was called 'Torvald of Shetland' already ten years prior to the events of 1299, when he was named as an ambassador of King Erik Magnusson to attend the court of Edward I of England (Thorvald's role in Shetland's history is examined more fully in section **4.3.1**).

What is particularly relevant to the history of Papa Stour is that this powerful individual must have made the island his main base of power, for decades later he is called 'lord of Papay' (*dominus de Papay* : *DN*, vii, 134). Here is the most significant evidence for the importance of this island in the administration of Shetland under the Norwegian kings; it was the main residence of the royal official, who would have held it as a *len* (fief) and who then acquired full possession (see further analysis of this situation in section **4.4.3**). Thorvald's second marriage brought him into a close family connection with an illegitimate daughter of Hakon V, which connection would ensure him of privileges and the acknowledged right to retain royal grants of land. His son Thorvald did not apparently have any heirs so that his daughter Herdis became his main heiress; she is known to have inherited Thorvald's estates and in 1355 she was residing on Papa Stour when she was engaged in one of her many land transactions (*DN*, i , 340).

In the latter half of the 14th century the world of Duke Hakon and Herra Thorvald and Fru Herdis passed away for ever. As mentioned already (**2.5.1** above) the vacuum in Norwegian political life caused by the drastic fall in population resulting from the plague epidemics provided an opportunity for Scottish clerics to move into the Northern Isles, with servants, friends and followers. The decimation of the Norwegian nobility resulted in the accretion of more and more land in the hands of the few survivors, and the vast estates of Herdis Thorvaldsdatter passed to her cousins John and Sigurd Hafthorsson, who also owned the Giske estates in Møre[9]. No evidence survives of their activity in Shetland although Hakon Jonsson, son of the former, was probably the royal official in Shetland (and in Orkney during the minority of the earl). He can be seen having been embroiled in violent opposition to the bishop of Orkney in 1369 (*DN*, i, 404; *Orkney Recs*, VIII), and it is likely that he resided on Papa Stour when carrying out his duties as 'Sysselman'.

This family certainly acted to protect its interests in 1386 when a letter from the king's Council in Bergen instructed the inhabitants of its Shetland estates to pay their rents to the *umbodsmen* (representatives) of the Hafthorssons and not to Malise Sperra, a claimant of the earldom family who also had Shetland estates from his father's side (*DN*, i, 501)[10]. Malise had apparently claimed Fru Herdis' lands and put his own *umbodsmen* in to collect *landskyld* (rents). The judgement of the *Drottseter* (Governor) went against him on that occasion but a few years later he appears to have been given a grant of some authority in Shetland at the time of Erik of Pomerania's accession to the Norwegian throne (Crawford 1983, 39)[11].

This was not the last time that rival claimants would attempt to collect their rents from Papa Stour. Nor was it the first time that disputes over the payment of rents from

[8] In 1984 (p 47) the author suggested the existence of these names meant that the island must have been held by odal tenure, and was not earldom land. However when earldom estates were given to members of the earldom family it seems likely that they would be divided among children and soon turn into odal tenures.

[9] Herdis made two prestigious marriages, one to Svein Sigurdsson, the treasurer of Norway,the second to Bjarne Erlingsson, and from these marriages she would have acquired the right to be called 'Fru' (lady) (Munch 1842-63, v, (i), 389). But no surviving children are recorded from either marriage.

[10] The term *ombosland* was recorded by Jakobsen in Papa Stour (1936, 111) which he interprets as 'crown property, national property' (ON *umboð* = 'full powers, administration').

[11] It may be worth noting that Fru Herdis appears to have attempted to bequeath her lands to the Church for the foundation of a Cistercian monastery (*DN*, vii, 267), but this never happened.

the island are recorded. The potential for quarrels and the violent tactics used by the strong-armed to acquire what they claimed to be their rights is an aspect of the island's history which must reflect the value to be gained from possession of it[12].

3.2 SCOTTISH PERIOD: NORWEGIAN OWNERS AND SCOTTISH LESSEES

The anomalous situation in which three large estates in Shetland continued to belong to Norwegian landowners long after the Northern Isles had been pledged to the Scottish crown has already been referred to (**2.5** above). All these farms were in origin the lands of Fru Herdis Thorvaldsdatter which remained in the possession of the Giske family throughout the 14th and most of the 15th centuries. During this period members of the family were foremost in the affairs of the Norwegian government, particularly Sigurd Jonsson, *Drottseter* of Norway in the mid 15th century, at a time when there were recurrent crises over the inheritance of the joint Dano-Norwegian crown. He was left as the virtual ruler of Norway and its remaining colonies, but we have no evidence as to how he administered the family's Shetland estates. As far as Papa Stour is concerned one document has survived from this period, the sale of a small amount of land in the island to Guttorm and William Sigurdsson by 'Henrik Soost' in 1452 (*DN*, ii, 747: *Orkney Recs*, ii, 48), which indicates that some commercial activity was going on (**3.3.2** below). Sigurd Jonsson's son, Hans Sigurdsson, died in 1465 without any heirs and it was not until 1490 (after Shetland had been pledged to Scotland) that the fraught problem of his huge inheritance throughout Norway was finally resolved, when the property was divided among the Rømer, Tre Roser and Rosenkranz families, three of the most powerful Dano-Norwegian kindreds of the time (*DN*, ii, no 426).

3.2.1 THE 'LORDS OF NORROWAY'

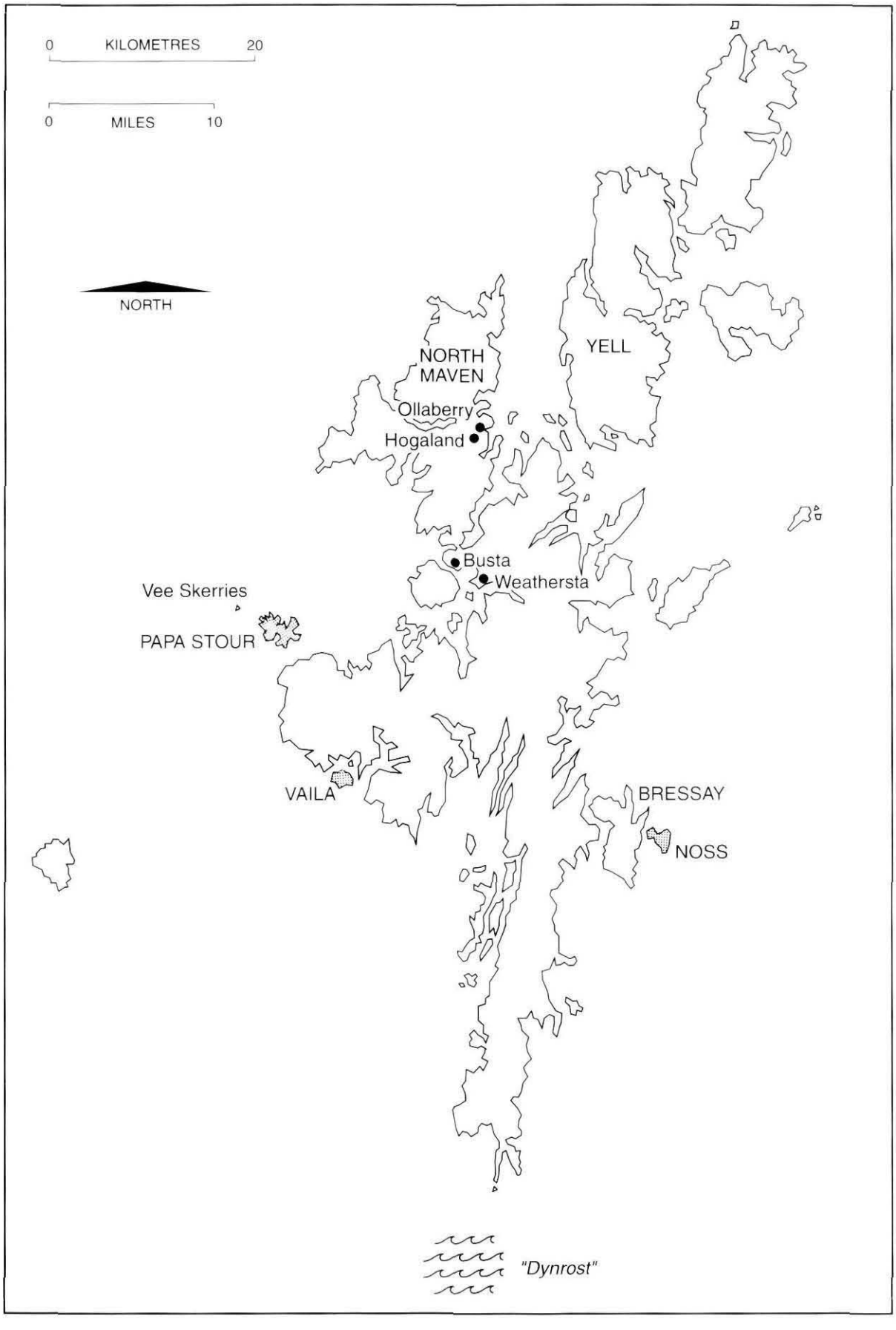
The way in which the Shetland estates were apportioned among the three families is very interesting. Each family had an island which seems to have functioned as its estate centre and to which other scattered estates on the Mainland of Shetland, or in the other islands were attached. The first-named in 1490–Vaila (Walls parish)–went to Alf Knutsson of the Tre Roser family which seems to have inherited the most important Norwegian properties, Sudrheim and Giske. The second was 'Papøy' which went to Otte Matsson Rømer, a powerful official in western Norway. The third was Noss, itself a small island lying off the larger island of Bressay, which was inherited by two sisters and controlled by the husband of one of them, Arald Kane, eventually passing to the Danish Rosenkrantz family (illus 10). In a similar arrangement the island of Giske in Romsdal fjord functioned as the centre of the Tre Roser family's rich Norwegian estate, to which scattered lands on the mainland were attached for administrative purposes. These subordinate estates were known as 'goods' (ie 'Giskegods') meaning property rather than moveable goods, and the same usage became current in Shetland thereafter: so that the standard phrase used in the central Scottish records when referring to these Shetland estates is 'Papa and Papaguids' or 'Vaila and Vailaguids' (Crawford 1984a, 53).

The list of estates passing with Papa Stour to Otte Matsson starts with the phrase *med sith sielwede*, a clear reference to the important 'seal-waith' or right to hunt seals, most specifically, in the case of Papa Stour, on the Vee Skerries (Smith 1995, 105) (illus 10)[13]. There is then listed the lands of Weathersta and Busta in Busta Voe (which were large townships) as well as *all iorder in Mawedes otting* and *iordene i Iale*: ie lands in North-maven and Yell, which are not specified, and it is not easy to be certain of their extent. In total this was a valuable holding of discrete estates in north-west Shetland which would have been easily administered by a representative of the Rømer family who could have made annual visitations to collect rents.

In this period of confusion after the pledging of Shetland to the Scottish crown, Lord Henry Sinclair seems in

[12] From the earliest rentals of Shetland (*c* 1500 and 1628) we know that Papa paid 8s wadmel + 8 meils butter/oil = 144 p = 1 last of skat (tax). 17th century sources show that 12 lasts of *rent* were due from the island. These two impositions together added up to a very valuable return and show how fertile the island was. The author (BEC) is grateful to Brian Smith for information and explanation of the rental sources.

[13] This term was misunderstood by the author in 1984 (Crawford, 53), and it is interesting to note that the ON term *wede* = 'waith' is the origin of the name 'Vee' Skerries, which must have been very valuable breeding grounds for seals.



illus 10
Map of Shetland showing the three island centres (Papa Stour, Noss and Vaila) of the lands of the 'Lords of Norway', with some of the estates appended to Papa Stour.

general to have been content to leave his uncle, Sir David Sinclair of Sumburgh, in charge of the family's lands and rights in Shetland, and in 1488 David was the 'foud' of Shetland, probably appointed by the Scottish administration (Crawford 1977, 97). However he managed to hold office under both kings of Norway and of Scotland during the following years, and in 1496/7 was appointed governor of Bergenhus (the administrative centre of western Norway). In such a position he would have been able to maintain the traditional status quo and keep up the close links between Norway and Shetland: he was succeeded as governor by Otte Matsson (holder of Papa and Papaguids), who also had every reason to keep Shetland within the Bergenhus area of authority. These two were both involved in the preliminaries to a rising against the rule of King Hans of Denmark-Norway led by Knut Alvsson (of the Tre Roser family and the holder of the Vaila division of the Shetland property), but Otte Matsson backed off from full rebellion and in 1501 was advising the people of Voss to stand firm in their support of the king, although David Sinclair appears to have transferred his allegiance more permanently to Knut Alvsson's party (Crawford 1977, 98-9, and for Sir David's role in these events Crawford 1978, 6-8).

3.2.2 FRU INGER AND HER HEIRS

After this period of stirring events and powerful royal officials the inheritance of the Rømer dynasty went through difficult times. Otte Matsson's daughter and heiress, Fru Inger of Austrat, was, as a widow from 1529, one of the most important personalities in the Norwegian aristocracy, and she was fully embroiled in fighting the archbishop of Trondheim in the period of violence leading up to the Reformation. Although later represented as a patriot (in Ibsen's play) fighting for Norway's interests she seems to have been also deeply concerned in furthering her own interests, as well as those of her five daughters. Together with one of her sons-in-law, the famous Vincent Lunge, she claimed the right to all the Giske estates from 1524; she tried to get possession of the Losna and Evje estates a few years later by some right of inheritance, and in 1539 she raised a claim to the Meløy estates in Helgeland. In 1531 the nunnery of Rein kloster, near Austrat was taken over by her and she received a life grant of it in 1541 (Koht 1923). All this activity can have left her with little leisure to visit her Shetland estates, but it does indicate exceptional ability to manage her property and suggests that she would have made sure of all rents and income due to her from 'Papa and Papaguids'. Later evidence indicates that she appointed a Shetlander of Scottish descent, William Tulloch, to manage the estates for her.

Big changes came on her death in 1555 when her property was divided between her five daughters, all of whom were married to Danish noblemen (Daae 1875, 224-365). The ability of such distant aristocratic landowners to manage portions of property in islands which by the mid 16th century were becoming more firmly under the control and authority of the Scottish crown was personally impossible. Understandably, the 'lords of Norroway' appointed representatives who were resident in Shetland, most of whom were of incoming families and therefore perhaps more mobile -and certainly more ambitious to establish their landed status- than the native Shetlanders. In the case of Papa Stour, the first Scottish family which acted for these absent lairds was Tulloch, very probably descended from those Tullochs who had followed the bishops Thomas and William Tulloch north to Orkney in the previous century (Ballantyne 1994, 25-6). The main Tulloch stronghold in Shetland was in Northmaven, where Andrew Tulloch was 'foud' in 1539. This may explain why William Tulloch acquired a lease of the lands of 'Papa and Papaguids' from Fru Inger around 1543, as some of these estates were in Northmaven and therefore conveniently close to the Tullochs. On William's death prior to 1558 his daughter Essila/Ursula (probably ON Aslaug) was his heiress and there seems to have been an agreement that the lease would pass to her and her husband, Andrew Mowat of Hugoland in Northmaven[14].

This was in the period after the death of Fru Inger (1555) when there was probably some uncertainty among the five heiresses and their husbands as to continuation of previous administrative arrangements. Certainly there is some evidence that Robert Cheyne, who later had a lease of 'Vaila and Vaila guids', had come to an agreement with the Norwegian proprietors over the Papa property, on which he acted to eject Andrew Mowat and Ursula Tulloch from the island and overturn their right to assume continued control of the income of 'Papa and Papaguids'. The evidence for this comes from letters written by Queen Mary to Jens Split as the chief proprietor (*proprietario primario*) and to the Norwegian authorities on behalf of Andrew Mowat and Ursula

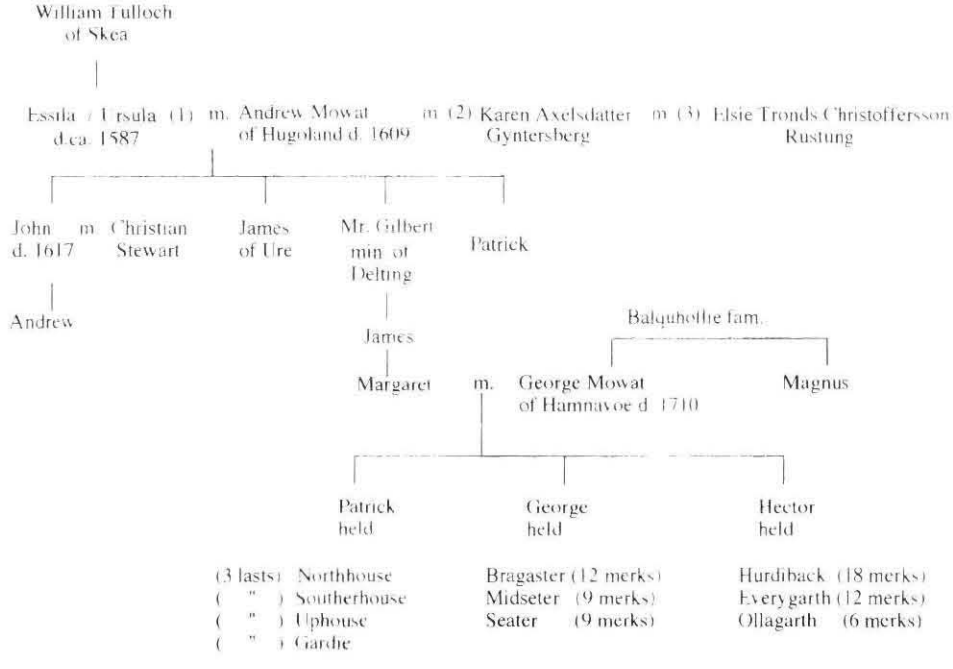
[14] Andrew was appointed 'tutor and gyder' to William's son John, Ursula's brother, in 1558 which indicates that he was too young to take on the lease.

Tulloch in September 1566 (*RPC* xiv, 260-1). These refer both to Ursula and Andrew's rights of possession (*per te et heredes tuos ex veteris locationis prescripto*) and to Robert Cheyne's negotiations, which had enabled him to eject Ursula and Andrew with the proprietors' sanction (*titulo vestro*) The documents make it clear (in a very tortuous Latin) that there had been attempts to turn people off their lands, causing a very inflamed situation in the island, and it is requested that the accustomed renders (*mercede solita*) be retained and that the farmers should not have to pay any increase in the annual rent (*annue mercede*).

3.2.3 MOWAT CONTROL

Queen Mary's letters must have had the desired effect, for a few years later Ursula and Andrew acquired the necessary confirmation of their rights in the lands of 'Papa and Papaguids' from the four proprietors, some of whom by this date were grandsons of Fru Inger. The confirmations were granted at different times between 1570 and 1576 by the four different proprietors at their properties in Norway, and one imagines Andrew Mowat travelling round these various places in order to persuade the heirs of Fru Inger separately to grant him and his wife the right to hold the different parcels of land, on payment of 'certane yearly maill and dewitie'. These arrangements were then confirmed in the Scottish courts 'as they had been in James V's time' (*RSS* vii, no 982), and a grant was also acquired under the Great Seal in the same year ensuring the Mowats' firm legal right of the lands of 'Papa and Papa guids' according to Scottish law (*RMS* iv, 2672). There are records of other disputes over the lands of the 'lords of Norroway', and it is remarkable how the Scottish crown acted to ensure that peace was maintained in circumstances where the owners of these estates were subjects of another king (Smith 1990, 30).

One of the privileges granted to Andrew Mowat in 1577 was the right to 'build a house and fortress upon the said lands of Papa' and there is no doubt that the Mowats did at some time build themselves a residence at Northouse: Hibbert in the early 19th century describes the gateway of an old mansion of the Mowats and their coat of arms which could still be seen there (1822, 551) (illus 12). But the Mowats do not appear to have taken up residence at Northouse in the 16th century, or indeed in the first half of the seventeenth. Andrew Mowat himself was drawn into the Norwegian social scene (perhaps through his relationship with the 'lords of Norroway'), acquiring lands in Hardanger and making two Norwegian marriages[15]. The first was to a daughter of Axel Gyntersberg of Mel in Kvinnherad and the second to Elsie



illus 11
Genealogical tree of the relationships of the members of the Mowat family discussed in the text.

[15] The whole circumstances surrounding Andrew Mowat's Norwegian marriages are dealt with at length in *RPC* xiv (Addenda), cxii.

illus 12
The heraldic stone formerly at Northouse showing the Mowat coat of arms (lion rampant on a shield) with the motto MONTE ALTO above (= Mont Haut = Mowat).

Trondsdatter Rustung, daughter of Admiral Christopher Rustung–thus founding the powerful family which eventually established the Rosendal barony (Espeland 1921, 16: Crawford 1984a, 54) (illus 11). In the 1590s Andrew appears to be residing at Gjersvik, his wife's estate in west Norway (Ballantyne & Smith 1994, no 184, 256), and his place of residence in Shetland was usually Ollaberry, Northmaven, and never in Papa Stour as far as the documents reveal (col illus 4).

The number and variety of documents which have survived show the wide range of administrative and economic activities which Andrew Mowat was involved in (in Norway and Shetland) right up to 1609, when he must have been a good age. In 1591 he claimed that the king of Denmark, whom he calls his 'soverain lord', had written letters to Elizabeth I of England on his behalf because of piratical attacks on his ships and his house at Ollaberry (Ballantyne & Smith 1994, no 184). In 1609 he and his son and heir, John, drew up a contract with Mr James Pitcairne, the minister of Northmaven, in which they disponed to the minister all the rents and duties of their lands in Shetland 'togidder with the lordis of Noroways landis presentlie in thair possessioun' for him to redeem and recover certain lands which were wadset and apparently in danger of not being recovered (Ballantyne & Smith 1994, no 482). A certain income ('landsettertoun') from Papa Stour, as well as 'the fischings in Veaskerie' were omitted from this and kept by Andrew. It is notable that the requirement for the paying of the debts and dues to the 'lords of Norroway' was stipulated as having to take priority.

Andrew's son and heir by Ursula Tulloch, John, was married to Christian Stewart, illegitimate daughter of Earl Robert of Orkney, which is an indication of the status of the Mowats in the islands at this time. After his father's death John took over 'the heritable tacks from gentlemen of Norway', which he must have recovered from Mr. James Pitcairne. So long as John was alive relations between him and his brothers, James Mowat of Ure and Gilbert, minister of Delting, seem to have been peaceable.

3.2.4 'BANGSTERIE AND OPPRESSION'

Mr Gilbert Mowat was however an ambitious and greedy minister of the Church. He succeeded to the living of Northmaven on the death of James Pitcairne, acting as the latter's executor–appearing indeed to have been a beneficiary in the latter's will (dated 1611) to the extent of being left 'the silver wark' (Ballantyne & Smith 1994, no 541). A decade or so later he had succeeded in obtaining what may well have been **all** Andrew and John Mowat's lands in Northmaven, plus the twelve 'lasts' of the lands of Papa Stour (in the parish of Sandness), with the pertinents (in the parish of Northmaven) ie 'Papa guids', for the sum of 5262 merks, 8 shillings Scots 'due to him' (*OSS* xii, 47-8). Clearly the trouble which had caused Andrew and John to dispone all their rents and duties to James Pitcairne in 1609 had not been resolved and Mr Gilbert was becoming the legal possessor of the Papa lands of the 'lords of Norroway' due to his brother's default.

The extent of the trouble which racked Northmaven as a result of the enmity between Mr Gilbert and Ninian Neven, supported by James Mowat of Ure, can be read in the full account of the case between them brought before the Privy Council in 1624 (*RPC* xiv, Addenda 715-78). Papa Stour was not apparently a matter of contention at that time, but a few years later the central Scottish records reveal evidence of Mr Gilbert's violent activities on the island. Again it was a woman's legal situation which lay behind the attempts by the strong-armed to gain the advantage of disputed rights to the incomes due. In the 1560s it had been over Ursula Tulloch's rights as her father's designated heiress; in 1631 it was over Christian Stewart's rights as the widow of the former holder of the lands, and her attempt to collect life-rent duties from the tenants. The Complaint which she presented in person to the Privy Council in 1634 gives a vivid account of the assaults she had suffered at the hands of Gilbert Mowat and his accomplices as she attempted to collect her rents from the island, and again at her own lands of Ollaberry. Further violence was perpetrated against the tenants of the 'Papa guids' lands – which probably means those in Northmaven – in an attempt to get possession of the 'dewteis and maills thairof' (*RPC* 2 ser, V, 220-1). It is very interesting to note that Christian and her brother-in-law James Mowat of Ure attempted to get information about these events to Norway and wrote letters to 'some burgomaisters in Norway to advertise the heretours of the said lands of Papa there of the said Mr Gilbert his cariage aganis the said Christiane'. However Mr Gilbert heard of this and managed to get one of his supporters who was travelling in the same ship to steal the letters from the pouch of her messenger when he was sleeping and bring them back to him. The residual rights of the 'lords of Norroway' were simply ignored by Mr Gilbert and his son James who, as stated in a document written later in the 1630s, 'have intruded themselves in the lands called Papastoure and sindrie uther lands pertaining to the Lords of Norroway and keipis themselves in possesion thairof be bangsterie (violence) and oppression' (SA, SC12/65/3 p.11). This document was written by an opposing Sinclair faction but the evidence already discussed would suggest that it is not exaggerating the extent of the Mowats' aggressive tactics: it moreover claims that they tried to eject the udallers from their lands 'upon the pretext that ther ryghts ar not conforme to the lawes of Scotland' and yet attempted themselves to protect their possession of lands by udal law and custom. Evidence about Mr Gilbert's behaviour as a 'cruell oppressour' who made 'unjust purchase of poore men's lands' had been fully publicised in the case before the Privy Council in 1624 (*RPC* xiv, Addenda). So when Christian Stewart complained to the Privy Council in 1634 that her brother-in-law had rewarded her husband's kindness towards him 'with manie unnaturall and undewtifull outrages, intolerable in a person of his profession' her statement would have occasioned no surprise.

In circumstances such as this the 'Lords of Norroway' would be able to achieve little, although the document cited above does indicate that they were attempting to raise a case against the Mowat faction. Nothing more is heard of it and nothing more is heard of the Lords of Norway's rights over 'Papa and Papaguids'. The Norwegian estates based on Vaila passed into the hands of the resident tenants in a similarly irregular way (Smith 1990, 34). According to Gifford writing in the next century the lands were still known as 'Noroway lands': his sanguine comment that 'they were at last purchased from them (the Danish landowners) by several gentlemen in Zetland' (1786, 38) is hardly borne out by the evidence respecting Papa Stour. The tenuous Norwegian links were broken, with little respect for established rights and the Papa Stour tenants must have regretted the exchange of absentee landlords for violent and aggressive intruders who kept themselves in possession 'by bangsterie and oppression'. The effects which this change had on the island community will be examined in the following section.

3.3 SEVENTEENTH-CENTURY EVENTS: 'INDWELLERS' AND 'INCOMMERS'

Turning from absentee landlords and their representatives to the 'indwellers' on Papa Stour the story should start with the remarkable evidence about Ragnhild Simunsdatter and her confrontation with Thorvald

Thoresson as told in the 1299 document (which will be discussed below chapter **4**). Then a long period ensues when nothing can be gleaned of internal affairs on the island, violent or peaceful. Fru Herdis must have come and gone: Hakon Jonsson, as heir of the Hafthorssons, and with administrative authority in Shetland must have come and gone. Fru Inger and her heirs probably never came. What happened to the former royal farm at the Biggings? Tenants lived there, and (as indicated) the process of sub-division, which was already well-advanced by 1299, (when the 'uppi i husi' – Uphouse – division is named), must have developed further in the following centuries.

The first list of 'indwellers' dates from 1577 and is contained in the famous Complaint of the Shetlanders against the rule of Lawrence Bruce of Cultmalindie (Balfour 1859, 30). The fourteen names listed from Papa must be those of the main householders and tenants on the island in Andrew Mowat's time as lessee of the heirs of Fru Inger. Eleven of the names are patronymics indicating established families of 'native' stock who followed the traditional custom of naming sons and daughters after their father. There are only three surnames as such: 'Zoungar' (Younger?), 'Bowhouse' (which is likely to indicate a dweller at one of the 'house' divisions at the Biggings) and 'Boll' (maybe Bell). There are no certain Scottish names at all, which contrasts with all the other lists of townships in this 1577 Complaint. It is also somewhat indicative of Papa Stour's changed place in the Shetland world that the clerk described it as a 'pendicle' of Walls! The island on the Viking sea route between Orkney and Norway has become an off-shore appendage to the Mainland parish of Walls. None of the other stirring events described in the Complaint involved the community on Papa except for a reference to the 'haill nichtbouris' of Papay being in attendance at the Court at Sandness where Harie Bruce pursued Nicholaus Johnsoun for commenting on his acquisitiveness (*ibid*, 71).

3.3.1 COURT BOOK EVIDENCE FROM THE EARLY 17TH CENTURY

One of the tenants, Olaw/Olav Christopherson, was a person of note who, along with his wife, Christian Lumsdaill, figures in the steadily increasing written sources which have survived from the late 16th century onwards. In the 1580s he appears as a defendant in cases involving the right to teinds from the vicarage of Walls, and rents and duties from the Lord of Norway's lands of Vaila (Ballantyne & Smith 1994, nos 82, 109). His possible brother, James Christopherson (named in the 1577 Complaint), was also summoned in the Court of Session by Hugh Sinclair of Brough as tenant and occupier of six marks of land in Nether Sound, Weisdale, but seems to have remained in possession of the land and its profits for the next 16 years (*ibid*, no 83, 177, 355). In 1601 Olav was cited in a decreet of the Court of Session, along with Andrew Mowat of Hugoland and others, for having violently evicted Thomas Cheyne of Ure from the town and lands of Norbie in Sandness (*ibid*, no 328).

However, the Christophersons were going to be faced with aggression themselves, apparently aroused by those of Scottish name and descent within their own island. The first indications are in a document of 1602 in which Andrew Mowat's son and heir, John, wadsetted land in Enisfirth in Northmaven to 'his good friend' Magnus Cogill, for the sum of 100 old silver dollars (*ibid*, no 342). In the next year the Court Book of Shetland has some very interesting entries from the proceedings of the Court of Walls, Aithsting and Sandsting held at Twat on 1st July, and of the Lawthing Court held at Scalloway on 18th July, which were brought by Olav Christopherson against Magnus Cogill and by Magnus Cogill against Olav Christopherson (Donaldson 1954, 77-8, 92). Clearly Magnus Cogill (always cited in the Court Book as 'in Papa Stour') had by this date moved into the island and taken possession of a tenancy presumably granted to him by John Mowat, his 'good friend'.

The other lawsuits arising out of incidents on the island at this time included a variety of actions of fairly typical genre: a case of wounding at the Dutch booth and 'frie coupsta'(free trading place) of Papay : a case of theft of 'white dry sheep's puddings with twa birskettis (brisket) of an scheipe' from a skeo which Margret Matches-dochter confessed to: a case of accusation of the theft of a sheep by Magnus Olawson 'said to be cassin over his dyk', which he had to clear himself of with the 'larycht aithe'[16]; and the ratification of the 'folds dume' (judgement made by the local legal officer) about putting nose-rings in the swine on Papa so that no harm was done to grassland or crops (Donaldson 1954, 77-8). Then comes an unusual case in which objects had been taken from Magnus Cogill's house, one of which, a

[16] This was the initial process by which the accused had to clear his name by bringing two 'oath-helpers' to court to support his claim that he was innocent (see Donaldson 1954, 6-7).

'skole' (ON *skål* = bowl), had ended up in Olav Christopherson's house. Olav and his wife said that they had purchased it from Mareoun Bonenisdochter 'and that thay knew nawayis the skole to apertaine to the said Magnus Cogill' whereupon Mareoun had to clear herself and Olav and his wife were absolved and were to have no reproof for the accusation. We can only speculate as to what had been going on, but the immediate impression is that the incomers to the island had not received a very warm welcome, and that Magnus Cogill had tried to pin the theft on the most important family of resident tenants. Furthermore he made a complaint at the same Court against Olav Christopherson about the payment of teind sheaves from land which pertained to Magnus as tacksman to Malcolm Sinclair of Quendale, and judgement was given that Olav was to come to agreement about the payment within one month. The battleground was clearly set.

From the July court record it is evident that the matter of damage being done by swine was very pertinent to the tense situation on the island, for the 'actioun of refting and reductioun persewit be Olaw Papa and Cristane Lumisdale his spous,...anent the herding and keiping of the swyne of Papa' was specifically against Magnus Cogill[17]. Nonetheless the court decreed that all swine were to be controlled from mid- lent until the harvest was brought in, and if any failure to adhere to this occurred the animals were to be marked for 'his lordschipis use' (Earl Patrick). By the next year matters had reached such a pass that 'be resoun that Olaw Papa hes giffin his ayth that he dredis him bodelie harme' it was ordained that Magnus Cogill had to 'find cautioun of laborous (lawburrous) to the said Olawe that he salbe hermeles and skaythles of him in his bodye and guidis and all that he may lat' (?) (Donaldson 1954, 120). At the same court Magnus Cogill was tried and fined for having 'dung' (struck) a servant woman of Sinnie Unergardis who was looking after the corn.

This evidence all suggests that Magnus Cogill had arrived in Papa Stour as an incomer and had conducted himself in a manner which was considered to be a threat by the rest of the community and much resented by them. Which tenancy had he been given by John Mowat? By the date of the Court Book of 1615-29 he was apparently residing at Gardie, for 'Mans Cogill in Papa Stour 'who is on assize in 1616 must be identical with 'Mans Cogill in Gairdie' who is on assize in 1617 and thereafter (Donaldson 1991, 28, 56, 70, 71). In 1624, Gilbert Cogill (earlier 'of Gairdie' when on an assize) was recognised as heir to his deceased father Magnus Cogill (*ibid*, 109). Gilbert Cogill of Gardie was one of those cited by Christian Stewart in 1634 as having attacked her when she was collecting her rents in Papa in 1631 and 'verie barbarously trod and tramped upon her with thair feet and thereafter violentlie reft from her servants the dewties quhilks they had receaved from her tennents' (see **3.2.4** above). At that point he was very obviously 'in cahoots' with the overbearing minister of Northmaven Mr Gilbert Mowat, who, as has been seen, took over all his brother John's lands in 1624, and assumed ownership of the 'lords of Norroway's' lands along with his son James.

We know from the Register of Testaments that Olav Christopherson died before 1613, when his widow, Christian Lumsdaill /Lumsdain, is recorded as residing in Northouse (Grant (ed) 1904, 59). A few years later she was acting on her own account in pursuing a claim for payment for herring and oil which had been bought from her by Andrew Umphra of Berrie seven years previously (Donaldson 1991, 26).The next year she was also pursuing a merchant of Fraserburgh for the price of a length of cloth ('a web of 8 ells long') (*ibid*, 48-9). Here is superb evidence for a woman engaging in the trading of what we can assume is locally-produced cloth and fish commodities[18]. The activities of other women on Papa Stour recorded in the Court Book are more predictable: Garthero Jhonisdochter slandering Bessie Boy about her 'kirn milk' which she accused her of spoiling with witchcraft, but as she was also reputed as being suspect of witchcraft herself, this accusation was not proven (Donaldson 1954, 122): William Hougoland was accused of having lived for 20 years in a life of fornication with Mareoun Hucheonsdochter (*ibid*, 20).

The general impression from this rare glimpse of island life in the early 17th century is one of some lawlessness among the island dwellers themselves: 'Ane greit stowth (theft) of fische, flesche and uther sort of gere stollin continewallie out of the selleris and skeois (store-houses for drying meat and fish) of Papa' of which five men were accused, and failed to acquit themselves with the 'larycht aith' or the 'saxter aith'. None of those named can be linked up with the tenant families who are mentioned in the other sources. Is this a poor underclass already in existence on the island?

[17] Olav Christopherson appears in the assizes sometimes with the name 'Olaw Papa'.

[18] In 1628 Helen Bruce, relict of Andrew Cogill, is also recorded as being involved in transactions with a Hamburg merchant residing in Papa Stour, Peter Frederickson (SRO CC 17/5/2).

3.3.2 FARMS AND FISHING

From this period the names of the majority of the settlements are first recorded, but it is known from the evidence of the 1299 document that Uphouse and Bragasetter had been in existence for a long time. The survival of a *kaup-bref* or 'deed of purchase' from 1452 also shows that land was assessed in 'burnt marks'[19]. The places of residence of the deceased listed in the early 17th-century testaments includes the main farm divisions of Uphouse, Sutherhouse and Northouse as well as Eldus and Bigtoun (probably the Biggings). We find Setter, Midsetter and Estabuster also (see discussion of the latter **3.1.3** above), while strangely Bragaster does not appear in any of the sources at this period. Gardie, the residence of those first recorded Scottish incomers, the Cogills, acquires its importance at this time from these tenants, and may possibly have been a recent establishment located as it was at the periphery of the cultivated area within the dyke. It was physically separate from the arable core, near the northern boundary dyke from which it took its name (illus 8 above).

By this date, there were of course other sources of income and livelihood than the tilling of the soil. The growth of trade with German merchants (**2.7** above) is reflected in the sale of one and a half marks of land in 1452 (mentioned above **3.2**) by a foreign trader called Henrik Soost. He is very probably to be identified with a Henrik Sozst who bought a house and building land in Bergen in the 1440s which was being sold in 1463 (*DN*, iii, 628: *DN*, x, 138). The name Soost indicates German origin, probably from Soest in Westphalia (a Hanseatic town on the Rhine)[20]. One assumes that Henrik Soost's links with Papa Stour stemmed from his position as a trader. Can one speculate that the small piece of land which he had held (and which he was selling to two men who seem to have been indwellers in the island) would have been in some way connected with his trading requirements? Or had he come by it in the course of payment for default of debts? This appears to be the first piece of evidence for a foreign merchant actually in Shetland, albeit one who was also resident in Bergen[21], and it is very interesting that this early evidence for the possession of land by a German trader relates to Papa Stour.

Once evidence does become more abundant it is clear that the island continued to be a favourite place of resort of German merchants. In a list of the principal havens in Shetland for Bremen merchants drawn up by Olav Sinclair of Havera in 1563 'Papposunt' and 'Sunte Mangens Eiland' are two of the eight named (Entholt & Beutin 1937, 58)[22]. By the beginning of the next century there were sufficient German merchants residing on the island to be referred to as 'the Duchemen of Papa' (H Smith 1984, 14). The names of two Hamburg merchants are known: Peter Frederickson and Symone Harratstay–who was ordered to leave Northmaven and move to Papa with his ship and goods because of the presence of a merchant already established in Gluss (Donaldson 1954, 17). The 'Dutch booth' and 'frie coupsta' (trading place) are referred to. The Court book gives admirable information about the role of such a merchant who was to come yearly to his assigned port 'well furnished with gold, silver, meal, beir (beer?), hooks, lines, hemp (for nets), shoes, iron, cloth of all kinds with all other sort of wares for furnishing the whole parish' (*ibid*) and the gentlemen and commons of the parish were 'straitlie bundin and oblist' to bring in and sell their 'whole fish, butter, oil and other wares yearly..and to no other merchants or strangers resorting within the said bounds'. This gives us the context in which manufactured goods from Germany–such as stoneware and the red pottery wares from the Rhineland–easily found their way into the houses of the residents on the island (see **7.3.2** and **7.3.3** below). At this point the merchants were dealing directly with the tenants, although as the 17th century progressed the problems with weights and measures and the depreciation of the currency appear to have made this direct trade less customary: landowners were becoming the middlemen, and doubtless making their own profit from this situation (H Smith 1984, 17). By the early 18th century political changes which saw the introduction of new customs dues spelled the end of German interest in the Shetland fishing and the development of changed economic circumstances (Irvine & Morrison 1987, 46).

The reason for the early interest of merchants in Papa Stour would naturally arise from the island's situation near

[19] The name of one of the holdings in the island (Ollagarth) appears in this document as *Holwgardh* which suggests that its origin was derived from ON *hola* = a hole, or low wet ground (Stewart 1987, 97-8) rather than 'Olli's garth' as Jakobsen proposed (1936, 152). A 'burnt mark' was a unit of valuation for land, assessed according to refined silver.

[20] The author (BEC) is grateful to Lauran Toorians of Tilburg, Netherlands and Dr Tom Schmidt, Dept of Navneforskning, University of Oslo, for help in tracking down the identity of Henrik Soost.

[21] At this date Hansa merchants were not supposed to trade directly with Shetland, but as noted by Friedland (1983, 89) 'they made contacts secretly with Shetlanders in and through Bergen', and the evidence suggests that Henrik Soost was a well-established resident in Bergen.

[22] It would be unlikely that both referred to anchorages in Papa, but Brian Smith suggests that 'Papposunt' could have been a harbour on the Mainland side of the Sound such as Sandness, where German merchants did sometimes stay. In which case there would be no difficulty about identifying St Magnus' Island as Papa Stour (see **2.3** above).

good fishing grounds and giving easy access to them. The inshore fishing which was pursued in this period produced mostly ling, skate, some saithe and 'keilling' (large cod). As can be seen from the activity of Christian Lumsdaill (see **3.3.1** above) herring was also caught and would be salted. The oil she sold was derived from fish livers, and there is evidence that this became an important commodity in the 16th and 17th centuries as a lubricant and for lighting purposes (H Smith 1984, 37). But the most important fish produced and sold was the dried ling or cod which was split open and wind or sun-dried on the stony beaches ('ayres') of the islands, and which provided an increasingly important occupation for the indwellers of rural communities like Papa Stour which were conveniently located for the landing of catches from the all-embracing sea. From this period comes the first evidence for the existence of Hamnavoe, a settlement with little cultivable land, and way outside the Hill Dyke, but located at the safest anchorage in Papa Stour and probably established more for commercial reasons than agricultural ones. Although very little direct evidence survives of the organisation of the fishing activity in the 17th century it can be assumed that the main landowner on the island eventually took charge: and that perhaps meant the Mowats, successors *de facto* to the 'lords of Norroway' and established at Northouse, whose 'office houses, strand and ayres' are referred to in 1716.

A full list of the Mowats' tenants on the island and the names of their holdings dating from 1671 provides us with an update of the settlement picture. This is included in a tack by contract between George Mowat of Hamnavoe, the factor appointed by the late Magnus Mowat of Balquholly 'and the haill indwelleres, tenants and possessoures of the illand of papa Stour' having power to set tacks (leases) of land and collect dues according to the merk assessment assigned (SA Nicolson papers). All the farm divisions are listed, as we know them still today, (except for Northouse and Gardie) but with the additional intrusive Scots name of 'Cnoack Hall' (Knock Hall), which was the largest individual holding of 12 merks and seemingly part of Bragaster (next on the list). The tenant there was called Gilbert Hay[23]. The largest divisions were Uphouse at 49 mks, divided among 10 tenants and Sutherhouse (36 mks) divided among eight tenants. Farms which have not been recorded before are Hurdiback (23 mks) divided among six tenants and Everigarth (16 mks) divided among three tenants and North Bankis (4 mks) with two tenants. Hamnavoe (3 mks) had only one tenant. It is very interesting to note that one of the witnesses is a James 'Cowgle in Gerdie', telling us very clearly that this family were still closely connected with the Mowats and not apparently paying any rent for Gardie.

The surnames are made up of 13 different patronymics of 19 tenants (one a woman) and 13 Scots names of 20 tenants (Hay, Cheyne, Richane, Smyth, Sinclair, Glean, Strachan, Dowell, Coy, Sutherland, Gall, Fraser, Yull). The big changes in the 100 years since the previous list of tenants in the 1577 Complaint are the proportion of Scots names (now exactly half) and the evident increase in population[24]. Thirty-seven tenants (which do not include Northouse or Gardie) compare with 14, although we have no idea in either case what the total numbers of inhabitants there must have been. It seems very likely that some of the holdings–perhaps Hurdiback and Everigarth and certainly North Banks–have come into existence in the intervening period. It was presumably the growth of the fishing which had stimulated this increase in the population, and the last of these three tenancies (North Banks) was outside the hill dyke and established as a fishing tenancy, with its two tenants having only three merklands and one merkland each[25]. Circumstances on the island were changing drastically, and they were going to change even more.

3.3.3 THE DECLINE OF THE MOWATS

Through some complicated family dealings a branch of the Mowat family from the Mainland of Scotland had moved north and taken over the Mowat empire in Shetland[26]. This was in fact the family which held the original Mowat seat at Balquholly in Banffshire and also had lands near Freswick in Caithness. Magnus Mowat of Balquholly, referred to in the 1671 document, led the move north but it was his brother George of Hamnavoe (who was named as the factor in the same document) who married Margaret Mowat of Ollaberry, granddaughter of Mr Gilbert Mowat, and who really established himself in the Northmaven lands, including the tenanted lands of Papa Stour.

This branch of the Mowats certainly made Northouse their residence and may have built the mansion referred

[23] Probably the same as a servitor of Gifford of Melby.

[24] It has been analysed from the early 17th-century Court Book that Scots names formed just under one quarter of the total names recorded from the northern Isles of Shetland (Donaldson 1983, 13).

[25] It was called a 'coatter room' (a cotter's holding) in 1710.

[26] Some of the complexities are discussed in 'The North House' by D Baptie (*New Shetlander*, 192, 1994, 30-1).

to later by Hibbert (1822, 551)[27]. The Mowat armorial stone (illus 12), which was still at Northouse until recently, was probably put up about this time[28]. The three sons of George and Margaret Mowat were all involved with getting possession of different lands in Papa Stour *c* 1700 and there were disputes about the different holdings (SA Reid Tait Coll) particularly as to whether Hurdiback, Everigarth and Ollagarth were tied to Gardie. The three lasts of Northouse, three lasts of Southerhouse and three lasts of Uphouse remained in the hands of the eldest son, Patrick Mowat[29].

The arrival of this newer Mowat line coincided with a period of much difficulty both socially and economically. A reference from 1681 to George Mowat's 'depauperat tenants' in Papa Stour[30] comes from a well-known time of famine at the end of the 17th century. The decay in trade meant that the German merchants had gone for ever, and the old commercial pattern was changing. Many estates came under severe financial pressure and unless the landlords could adapt and enter into more long-distance trade they were unlikely to survive. Patrick Mowat fell on hard times and, following on the disputes over the different holdings in Papa Stour mentioned above, we find him giving John Scott of the merchant family of Scottshall a heritable bond over the whole of Papa (1714), which Scott immediately passed on to Arthur Nicolson of Bulyester. In the next year Patrick Mowat was wadsetting the 'whole Illand of Papa Stour' (224 merks of udal land) to Arthur Nicolson for £13,000 Scots. An instrument of possession, dated 6th February 1716 at Northouse, describes how the keys of the 'principal manor dwellings new and old and office houses thereto belonging' were handed over to Arthur Nicolson (SA Nicolson papers: see list of documents in Fenton 1978, 75-6). Nicolson had full control at the latest by 1724.

3.4 EIGHTEENTH-CENTURY MERCANTILISM AND 19TH-CENTURY 'IMPROVEMENT'

3.4.1 THE MERCHANT-LAIRDS: GIFFORDS AND NICOLSONS

This situation did not last for very long however, and a division of the lands of Papa Stour took place which has lasted in law right up to the present day. Thomas Gifford of Busta acquired the 12 marks of Bragaster, 12 marks of Midsetter, 18 marks of Hurdiback, 12 marks of Setter, 12 marks of Everigarth and six marks of Ollagarth, granted to him in bond by George Mowat of Stennes in 1735 for debt of £2,220 Scots which was never paid off [31]. That amounted to 72 marks, one third of the lands of the island. The remaining two thirds comprised the three big divisions of Upperhouse, Southerhouse and Northouse which, along with Gardie, were retained by the Nicolson family. These two families were closely involved through commercial connections.

The reason for the interest of these powerful merchant-lairds (of whom Gifford has been described as the 'outstanding example': H Smith 1984) was of course the excellent location of Papa Stour with respect to the growth of the 'haaf' fishing, and the size of the island's population which was available to engage in the fishing operation and the on-shore curing processes. Slightly later in the century William Hay, the founder of the merchant business Hay & Co, was also based on the island as Gifford's tacksman. The large-scale operation of these commercial fishing ventures by ambitious entrepreneurs resulted in a further deterioration of the standard of living of the islanders. Their labour was necessary in the semi-industrial processes involved in the exporting of this valuable commodity, and they became ensnared in the semi-servile conditions in which they were locked by the fishing tenures. Some fairly sharp comments were made in 1793 by the observer 'CS' about the detrimental effects of a social structure which allowed so many of the islanders to be totally bound up with the exploitation of the ling fishing, so that seventy boats' crews were employed in that activity. 'Hence, too, the introduction and sale of great quantities of spirits, tea, snuff and other merchandise, corrupts the morals of the people, wastes their substance, and leads them to dissipation of almost every kind' (CS 301). At least some of them seem able to have afforded these commodities, which was possibly not the case elsewhere in Shetland, and which is thought to be one of the reasons for the decline of smuggling towards the end of the century (H Smith 1984, 104).

[27] There is a reference to the 'manor dwellings new and old' in the 1716 document of wadset (SA Nicolson Papers).

[28] Now in the possession of Mrs A Mowat, Sandwick.

[29] A last was a block of land, containing a variable number of marks, which in Papa (as elsewhere in Shetland originally) paid 144 pennies in rent.

[30] Cited from the Gardie House Papers, with permission of Mr J Scott, Gardie House, Bressay.

[31] Information from SA kindly supplied by Mr John Ballantyne.

3.4.2 SOCIAL PROBLEMS

There was another aspect of life in the island which was commented on at this time: a prevalent disease, thought to be leprosy (although sometimes called scurvy or elephantiasis), which lingered on in these remoter parts of north Europe long after the Middle Ages (Richards 1977, xvi)[32]. It was thought to have borne some relation to the diet which consisted primarily in summer of fish and milk (the fish not being properly cooked) (Sinclair 1797/1978, 521). In 1738 a surgeon and apothecary, Mr Andrew Fisken, gave a full account of cases of the disease on Papa Stour and also described the banishing of the sufferers to solitary little huts 'built on purpose for them at a distance from all houses' where they had to remain without being in communication with their families, and to whom 'the necessaries of life were furnished... brought to their hut, which they take in when the person who brought it has retired to the windward of their house at some distance' (SRO, GD253/143/13/16). The existence of this leper colony is corroborated by the Kirk Session Records, which suggests that afflicted people may have been sent to Papa from other parts of Shetland, for Collections for their support were taken up throughout Shetland. The Session Clerk on Papa attended the lepers from 1727 until 1742 when the Session recorded that 'By God's good Providence the Lepers were all dead' (Jamieson & Reid Tait 1937, xiv). A day of public thanksgiving was appointed and the remainder of the leper fund was given to the Session Clerk. He however requested that the money be devoted to the repairing and re-hanging of the Kirk bell, which had been gifted to the church on Papa formerly by a Hamburg merchant who had lived on the island. It took 18 years for that to happen and in the meanwhile the church had fallen down and had to be re-built. The extraordinary story of the lepers of Papa Stour is one side of life on the island in the 18th century which deserves better study. The lepers' spring, from where they had their source of water, and the sites of their huts, collapsed in on them where they died, can still be seen outside the Hill Dyke (illus 5 above). The minister deplored their dreadful circumstances 'shut out from society, sequestered from their friends, what a joyless life they must have dragged out? Humanity at the recollection of this, drops a tear' (Sinclair 1797/1978, 521).

A better-known story of a 'social problem' is that of the 'Prisoner of Papa Stour', the Hon Edwin Lindsay (1786-1865) who was sent to the island by his family because, it is said, of his refusal to fight a duel (Manson 1933, 177; Flinn 1989, 165). He was certainly mentally unstable and subject to bouts of violence, although he was kept by the family of Hendersons of Gardie, factors to the Nicolsons, for 20 years without any recorded incident, until his release was engineered through a visiting missionary in 1835. Correspondence between Edwin Lindsay and the Henderson family continued for many years after his release (*ibid*, 175).

Although there was usually enough grain grown on Papa Stour for there to be a surplus to export to other parts of Shetland in times of famine, the relentless cultivation of these fertile arable lands must have started to have detrimental effects, particularly after the population increase which occurred in the last decades of the 18th century once the outbreaks of small pox were curtailed. The 240 inhabitants recorded in 1774 had risen to 285 by 1792 (Sinclair 1797/1978, 525). There were contemporary comments on the mismanagement of farms 'and a greed for fishers'; so that there was continual rotation of bere [barley], oats and potatoes, with no land being allowed to lie fallow ('CS' 1793). The holdings were parcelled out in such subdivisions as to make proper use of them difficult and unproductive, and runrig agriculture enabled more tenants to be accommodated than the land could bear. This was the pattern throughout Shetland (Knox 1985,17). Not until the mid 19th century, as a result of the failure of the herring fishing and the collapse of the merchant house of Hay and Ogilvie, did the landowners start to look to their estates again as an alternative source of income, thought about the regularisation of holdings, and 'reappraised the land' (*ibid*, 18-19).

Belonging, as Papa Stour now did, to two of the most important land-owning families in Shetland – Gifford of Busta and Nicolson (of Fetlar by this date) – it also came in for extensive improvement and rationalisation of the traditional method of agriculture. Being, as it was, of such natural fertility that it had been intensively farmed since time immemorial, many problems arose during this process. Some of these were due to the ancient divisions of landownership and to the deeply traditional methods of cultivation which are not easily understood by us today. Indeed they were not fully understood by either of the landowners and the account of the problems which arose during the process of division reveals much about the complexities of the situation in Papa as well as of the attempts to understand it[33]. In 1846 permission was granted by the Lords of Session for the perambulation of the whole island, the establishment of boundaries and values and carrying out of divisions. The surveyor, Thomas Irvine of Midbrake, Yell, was appointed and carried out his survey of the island during June and July 1846.

[32] It is interesting to note that in the Middle Ages two lepers from Shetland are recorded as having gone to the shrine of St Magnus in Kirkwall in the early years of the saint's cult, and received a cure for their affliction (*OS*, chap 57; Palsson & Edwards, 96).

[33] Detailed notes of the process were fortunately taken by A Fenton before the papers were destroyed by the solicitors holding them (see Fenton 1978, 71-88).

3.4.3 '...THE CASE OF PAPA IS IN MANY RESPECTS PECULIAR'

His survey provides full information about the quality of the land at that time, and also about the nature of the way in which it was cultivated, while the map of runrig which he produced gives a vivid impression of the complexity of the cultivation pattern (see map of 1846 in Endpapers). The number of arable patches attached to each farm are listed and the average value of the patches given. The best land was that lying on the east-facing slope at the Biggings, all of which was valued at 15s, but Bragaster was not far behind with an average value of 13s 3d. and, rather surprisingly, Gardie, Everigarth and Hurdiback were given the same average value (Fenton 1978, 76-7). The arable patches were measured for their areal extent and naturally the largest acreage was at the Biggings (16 acres) with the next largest at Northouse (13) and 9.5 acres at Bragaster (*ibid*, 84-5). Stock-carrying capacity was also considered and Nicolson's 144 mks assessed as being able to pasture 432 head of cattle and Gifford's 72 mks 288 head. It seems doubtful whether there was ever that number of cattle being reared on the island taking into account what was said about the lack of hay by the visitor 'CS' in 1793. Rather surprisingly, considering the fact that Nicolson held two thirds of the island, and including the best farms in the island–Biggings and Northouse–Gifford's lands were generally considered more valuable (*ibid*, 82). Was this due to the fact that the densely-settled communities at Biggings and Northouse had exhausted the fertility of the soil? It also appears that some grassland had been turned into arable in the previous forty years, which would probably have advantaged Gifford's holdings to a greater extent than Nicolsons.

It may be this long-established historical situation which underlay the problems over the conclusion of the division of the lands. Did Papa Stour consist of only one township, or did the farms each constitute separate townships? Arthur Nicolson claimed the former, no doubt because he held the core of the arable lands and because the Biggings was undoubtedly the central settlement of the island. He presumably regarded all the other holdings, peripheral to the Biggings, as satellite communities, in the way that they probably were when established (see **3.1.2** above). Gifford, who held all these smaller farms, claimed on the contrary that they were separate townships, and that these 'respective townships' each had their own number of merklands which meant that they were 'exclusive arable farms' and not subject to division. There was not therefore so much runrig land in the island as Nicolson believed (*ibid*, 72, 74, 78). The sticking point appeared to be whether the division was to be done according to merklands or according to valuation. The block that this caused to the conclusion of the process went on through the 1850s, until the final decision of the Commissioners was that division would be by possession as Gifford wished, although after an appeal there was some adjustment. The case finally ended in 1857.

It is very interesting to see that once again this island had been at the centre of some very expensive and contentious litigation. Indeed, the point of contention was perhaps not so very different from the underlying problem in 1299; were the outlying settlements, separate from the Biggings, to be regarded as separate for assessment purposes or integral with the core arable farm? In this one respect nothing much appears to have changed in five and a half centuries.

For present purposes there was one very important result of the mid-19th-century process; Thomas Irvine's map of the island and its pattern of run-rig divisions provides us with the first cartographic evidence surviving (SRO: RHP83385/6) (see endpapers). This depicts the situation in the island before the process of dividing the run-rig lands had been achieved, and it shows the alignment of the older houses in the Uphouse yard before their destruction and the re-alignment of the newer tenants' housing. This is exceedingly valuable from the point-of-view of understanding the morphological situation underlying the area excavated. Particularly significant is the clear depiction on Irvine's map of these houses lying on a NW-SE alignment which corresponds to the earliest excavated house alignment, and which had probably reverted back to it after a change in the intervening centuries (**8.3** below). There are two long rows of houses lying parallel to each other (probably corresponding to the remembered houses called 'Porrie'; **3.5** below) with a shorter house to the south (perhaps the 'Gørl' before being re-built). The building at right angles may be the 'Byres' (illus 13). This is all very different from the existing pattern, although the lay-out of Southerhouse appears much as it is today[34].

[34] There is also another very sketchy map of Papa Stour which has been identified (by Brian Smith) as being by Irvine, which is said in a Note appended to it to be pretty inaccurate in its 'superficial measurement' (SRO RHP 9142). It does show the location of the main settlement units and their roughly-delineated arable lands, and in particular shows the largest settlement at the Biggings (although no name is attached to it!). The lay-out there indicates two conjoining yards, perhaps representing the two units Southerhouse and Uphouse, but rather different from the representation of the Southerhouse buildings as shown on the 1846 run-rig map. The squares within these yards presumably represent the alignment of the houses, which is also NW-SE.

illus 13
Map of the place-names at the Biggings showing the location of the present buildings, and the site of former structures as depicted on Irvine's 1846 map (place-names kindly supplied by George Peterson).

The existing pattern is there by the time of the first OS map (surveyed 1878) (illus 7 above), and evidently in the intervening period there had been a radical transformation of the North Biggings lay-out (this name replaces Uphouse at this time). The two NW-SE aligned rows of houses had been completely removed, and excavation revealed the thorough nature of this destruction process. No walls of these houses were left standing. There is no written record of this process, which must have been carried out by Sir Arthur Nicolson, perhaps as a result of the outbreak of typhoid in 1861 which killed a good number of people. There is a memory of the destruction of the older houses, and the carrying away of stone for the new houses at Upper Biggings (pers comm Gorge Peterson). A list of rents due from tenants in 1884 gives the names of seven tenants at the Biggings, although unfortunately not the names of the individual houses (Fenton 1978, 169-70).

The house built at this time on the east edge of the older houses and aligned across them was the Gørl, to be such an important feature in our excavations, and which must have taken the name of an older dwelling. It was built on top of the east end of the dismantled houses for John Umphray/Humphray who is named in the rental list of 1884, and whose widow lived on at the Gørl until she died in 1918, after which the house stood empty and was eventually unroofed (pers comm George Peterson). There was a drastic reduction in the whole population of the island in the second half of the 19th century, when many families left for the Mainland of Shetland or further afield. One of the main reasons for this was the problem of fuel and the lack of any available peat on the island itself. The whole circumstances at the Biggings had by then completely changed with a community of 25-30 families reduced to seven houses, eventually dwindling to two or three. It was this situation, however, which made the sites of the original mediaeval houses available for excavation.

3.5 THE BIGGINGS: NAMES AND BUILDINGS

(illus 13)

The use of names has been a very important facet of the inter-disciplinary nature of the present study. From the names incorporated in the 1299 document (chapter **4** below) to the remembered names at the Biggings their value has been recognised, as well as the problems in interpreting them. Most of these names have their origin in the Old Norse language, and were therefore applied at a time when that language, or the Shetland dialect of Norn, was spoken in the island. It is not possible to be sure for how long this situation continued, and there are uncertainties about the length of the survival of the Norn language in the whole of Shetland (Rendboe 1984). Considering Papa's peripheral position off the west side of Shetland it might be thought that there would have been little influence coming in, but then, as elaborated above, it was an island much sought out by merchants; and would have had constant contact with Scots traders as well as Scotticised landowners. In the crucial period of the 16th and 17th centuries, however, the residents in the island were probably fairly static and apart from the Cogills there is no evidence of many established Scottish families until the list of 1671.

There is no doubt that the names of the three main farm divisions of Uphouse, Southerhouse and Northouse must have been coined in the Norwegian period, and probably before 1195 (as discussed above **3.1.3**). The first two remained as the core of the Biggings settlement, and the derivation of that name from ON *Byggdin* has also been explained. How and when Northouse moved to its present position is still not understood but this important division became the possession of incomers, and was closely tied to Gardie. The use of Old Norse 'bu' for a large and wealthy farm lurks in some of the nomenclature associated with people and places at the Biggings: the surnames of 'Bowhouse' and 'Bui' given to a few indwellers in the island in the 16th and 17th centuries would appear to include that element. The field name 'da Buggeslitt' close to Southerhouse at the Biggings includes the ON compound *bugarðr* (*bú* ='farm', *garðr* ='enclosure') + *slettr* = 'flat piece of land' (Crawford 1985a, 137; Jakobsen 1936, 32).

If we look at the house-names in the yard of the Uphouse division at the Biggings (illus 13)[35], it can be seen that the name Uphouse itself (Ophus) lies at the western edge of the yard. This was where the Charity school was located in the 18th century (Jamieson & Reid Tait 1937, 29) and a dwelling-house in the 19th (visible on Irvine's map). But it is not the original site of the Uphouse of the 1299 document, nor of the residence of the successive tenants of Uphouse, as was proved by excavation. The name had

[35] All the information on which this map has been based was provided by Mr George Peterson of Bragaster.

moved as the expansion of the population necessitated the building of more and more houses at the Biggings. This general process was understood by the Orkney historian JS Clouston who explained: 'In course of time, they (viz crofts with 'house' names) always came to be rebuilt further apart, and it is only where...early sites are remembered that one discovers their ancient proximity' (1919-20, 39). Uphouse must originally have been more central. Many other names of the divided Uphouse farm existed; some of them have survived in the later historical records, such as Eldus and Uthascoll (see **3.3.2** above) names which suggest that they originated in the late Norse period, but their location has been forgotten. Those that are remembered are 'da Porrie', two houses which appear to have lain somewhere over the excavated site[36]. It seems possible that the origin of this name might lie in ON *búr* , 'store-room' and the name of one of the three buildings of which medieval Norse farms were composed (*stofa*, *eldhus* and *búr*). That there was such a farm-name in Papa Stour is suggested from the fact that one of the rig-names on the island was recorded by Jakobsen (1936, 131) as 'de Bursdelds' (ON *búrs-deildir*, the part of a field relating in some way to the *búr*, or belonging to the farm called Bur). This name may perhaps be applied to one of the excavated buildings, as also Eldus (ON *eld-hus*, 'fire-house). These excavated buildings lie in the yard at the Biggings in the area where the 'Porrie'is remembered as having been.

The remaining names in the Uphouse yard are a fascinating mixture: 'da Byres' is pure Scots and self-explanatory as indicating where the housing for the animals had always been: 'Nordaflør' (= northern cow-stall) is pure Old Norse and indicating something similar; 'da Sweerie Haa' has remained a tease, and was perhaps always something of the sort, for although it was the residence of the Sheriff Officer in the later decades of the 19th century, the name has a ring of irony, probably signifying a reluctance to work (Sc. *sweerie*). Finally we come to 'da Gørl', built , as said above, in the 1860s and found to have been located right on top of the east end of the medieval building which will be interpreted as being the *stofa* of the Norse farm (see **8.3** below). Thanks to its positioning this house had preserved the wooden structures underneath better than anywhere else in the yard where the houses had been torn down. It was probably utilising the east end of the destroyed buildings with the deliberate intention of providing a solid foundation for its walls. It is very unlikely that 'Gørl' was a new name in the 1870s for it must be derived from some Old Norse elements, and Jakobsen's analysis of the apparently similar name of Gorhool-Gorhul (Fedeland, North Roe) derives it from ON *garð-holl*[37]. He translates this as 'farm-mound' in *Place-Names* (Jakobsen 1936, 44) and 'dyke-knoll' in *Old Shetland Dialect and Place-Names* (1897, 105)[38]. Whether one should read any significance into the use of *garð* here, or whether the meaning was more mundanely connected with a 'dyke' or division boundary of some sort, is not easy to decide.

From these names came the guidance as to exactly whereabouts at the Biggings excavation would be most likely to produce the site of the ducal *stofa* recorded in 1299 as being associated with the farm *uppi i húsi* (Uphouse). Despite the many changes that have taken place in this locality over the 700 years since the events recorded in that document, the remembered names provided a rough indication as to the right location. They retain hints about the buildings and their significance which were taken very seriously. Understanding such names and the implications of their meanings is not an easy process and it requires wide experience of both the nomenclature of the Norwegian homeland and the particular development of naming within Shetland. Fortunately the place-names of Shetland have received the attention of some dedicated place-name scholars. In conjunction with local knowledge[39], this has been an area which has provided valuable input into the research project, and which the results of excavation visibly helped to confirm.

[36] The meaning of which was thought at first to be connected with ON *borg* (Crawford 1985a, 138). As however no trace of any fortification suggested by the name was discovered in the excavations, an explanation has to be looked for elsewhere.

[37] Another closely-similar name in other locations, Gørhul, is suggested as deriving from *gýgjar-hóll*, which Jakobsen translates as 'troll-hill' (1936, 139).

[38] In 1985 (Crawford, 138) the author suggested that the second element could derive from ON *holl* = 'hall', said to be used only of earls' and kings' halls (Cleasby-Vigfussion) which still remains a possibility although Jakobsen does not consider it in connection with Gorhool.

[39] Generously provided by Mr George Peterson, as in n.34, who has himself written a book on *The Coastal Place-Names of Papa Stour* (1993).

4

THE EVENTS OF 1299

Barbara E Crawford

4.1 THE DOCUMENT

Texts are what history is made of. So the survival of the first extant document to have been written in Shetland is a survival of some significance. Documents are very vulnerable to the ravages of time, and although parchment is quite tough and long-lasting when held in good conditions, it can very easily submit to the predations of vermin, the effects of damp, and above all the carelessness of man. Once a document has no particular relevance to a contemporary situation it can get lost, be discarded or simply destroyed. Indeed documents are also vulnerable to the depredations of a family's enemies: as William, the last earl of Orkney explained in his letter to King Eric of Norway when presenting his claim to the earldom in 1446:

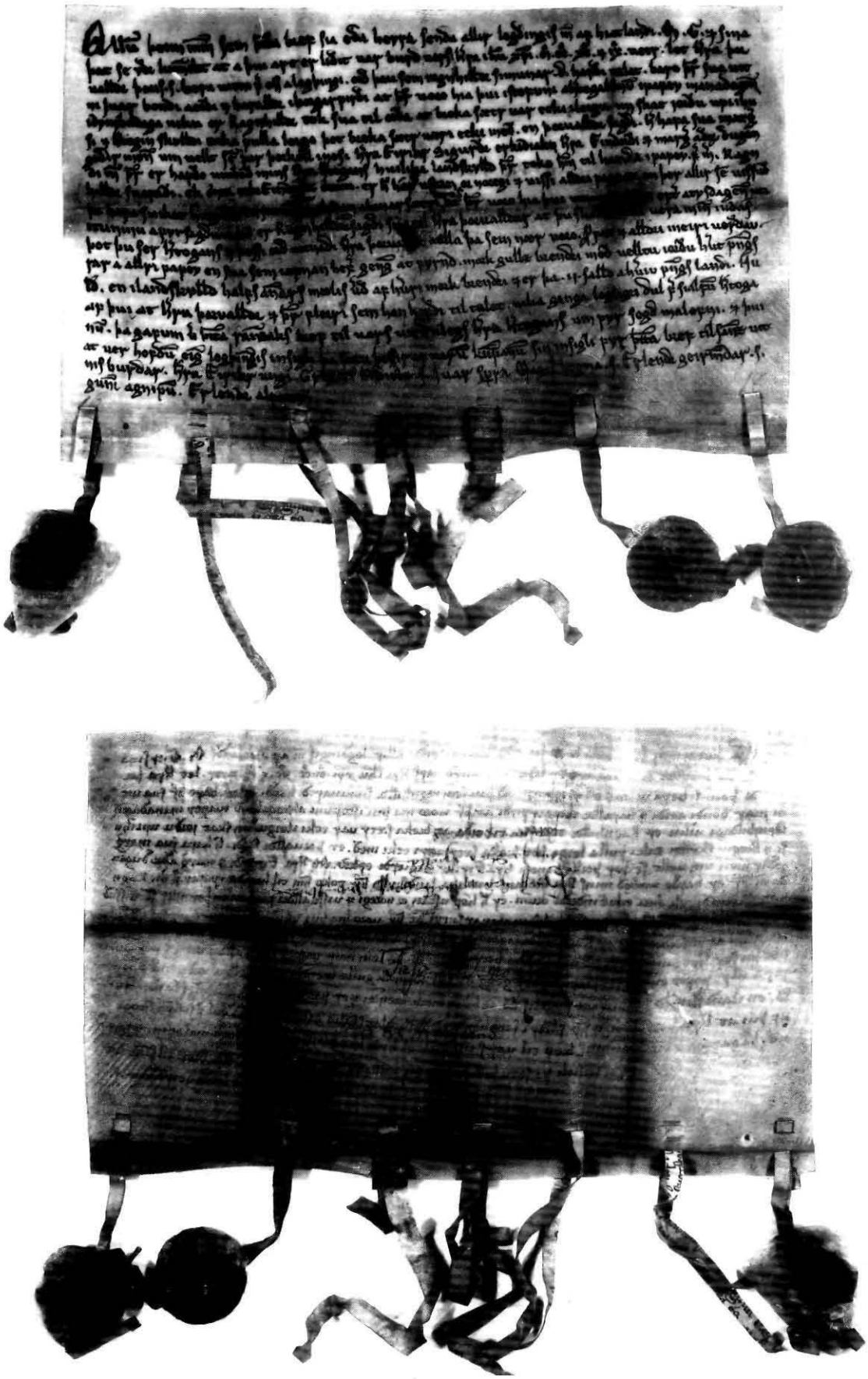
> 'divers charteris, evidentis, instrumentis, compt bukis, and otheris divers kindis of probationis war consumit be fyre, tint (lost) and alianat in the tyme of hostilite, and of weris (wars) of unfreindfull innimiis, throw laik and wanting of ane hows or mansioun ..quhare siclyke forsaidis mycht bene surlie in dew place kepit' (*Bannatyne Misc* iii, 69).

There are also some notable instances in Shetland's history where documents have been destroyed in time of peace through carelessness and deliberate acts of vandalism (Ballantyne & Smith 1994, xvii-xviii). However, governments usually take good care to see that the collections of documents on which they base their authority are preserved in secure archives or Record Offices. In the process of their keeping a record of governmental activity much was also included which had no direct bearing on the following generations of rulers, but which related only to one moment in time in the history of a dynasty. Such is the case with the 1299 document from Shetland which was sent back to the royal duke who held Shetland as part of his ducal estate, but who later that same year himself succeeded to the throne of Norway. The letter from the lawthing of Shetland therefore passed into the central archives of the kingdom, and has there remained[1].

4.1.1 HISTORICAL ASSESSMENT

As a document drawn up by the lawthingmen of Shetland this letter addressed to Duke Hakon Magnusson is an official production and it conforms to the standards of governmental records of the time. It is written on parchment in a neat professional court hand, in Old Norse: the form of the letter accords to the usual conventions, and is authenticated with the seals of seven members of the Lawthing (illus 14). It is very certainly not the first such document to have been written in Shetland. We can be quite sure that educated clerks would have been in attendance at the legal assemblies in the islands throughout the 13th century and probably the 12th century too, to record decisions and draw up any necessary legal documents for protagonists who had brought cases or who required proof of land transactions. The legal assemblies of the Vikings pre-dated their conversion to Christianity, but churchmen made attempts to take over the procedure of these assemblies immediately following on the establishment of a Church in the north. As at Tingwall, where the main Lawthing assembly for Shetland met, churches were built in the close neighbourhood of the legal assemblies, and increasingly served as the courthouse for Lawthing meetings (col illus 7). In 1307 proceedings were held in Tingwall church when judgement was given in another case in which Lord Thorvald was involved (**4.3** below).

[1] It is now included in the Arnamagnaean Collection in the National Library, Copenhagen (AM 100, 3). When Norway was united with Denmark in the late 14th century, much record material passed to the central government archives in Copenhagen. The ON text is printed in *DN* I, no 89; *Orkney-Shetland Recs* vii, 38 (with English translation which is also included in *Orkney Recs* xxviii); Hødnebø 1960, no 66 (with modern Norwegian translation).



illus 14
Front (above) and reverse (below) of the document addressed to Duke Håkon Magnusson drawn up by the lawthingmen of Shetland, recording the events which had taken place on Papa Stour at Easter 1299, when Ragnhild Simunsdatter had accused Thorvald Thoresson of betraying the duke in connection with his rent and income from the island (Arnamagnaean Institute, Copenhagen).

The record of events which forms the subject of the 1299 document is a priceless piece of evidence for the state of society in Shetland at the peak of the Norwegian period, when Shetland was closely connected with the kingdom of Norway, and was considered to be a skattland, or colonial territory directly under the crown and without any intermediate 'feudal' overlord. It is a remarkable record not only of the administration and the workings of the legal system but also of the situation prevailing in the island of Papa Stour, even including the arguments of those involved in the events recorded. The extent to which the different scenes of the dramatic encounters are described is highly unusual in medieval records of this period. This may be a particular feature of the workings of the Scandinavian legal system: it is certainly a feature of the way the events were recorded, with direct speech being quoted. It is medieval record at its best and most authentic.

People and events in Shetland had been the subject of record before 1299. Historians of the Northern Isles are fortunate to have the unique *Orkneyinga Saga* as a source of knowledge about the history of these Scandinavian-settled archipelagos from the founding of the earldom in the late 9th century to just before 1200, when it was written down in Iceland (**2.2** above). Shetland is mentioned in the *Orkneyinga Saga* infrequently, but nonetheless some useful information is included. Sagas are a unique kind of medieval record which historians rightly treat very warily. Because they were usually written down long after the events described, and because they were written as a form of entertainment they cannot be used as proof positive that such an event happened, or happened in the way described. Nonetheless they provide all those interested in the history of the Northern Isles with a wonderful recreation of life in the islands, mostly at the level of the earldom family and its following, during the 10th to the 12th centuries. When this source dries up *c* 1200 a period of historical darkness ensues in Shetland, illuminated very fitfully by evidence from outwith the islands. With the letter of 1299 the historical record resumes, in a form which perhaps provides more certain information about real events, and knowledge of a different kind from that provided by the saga – about the tax collector, the woman who stood up to officialdom and about events on an island which has not been in the light of history before. It is time that we turned to see exactly what that document tells us about the island of Papa Stour and Norse Shetland at the very end of the 13th century.

4.1.2 THE TEXT IN TRANSLATION

To All those Men who see or hear this letter all the lawthingmen send God's and their own greeting from Shetland![2]

So may it be known to you that in the year when 1299 winters had passed since the birth of our Lord Jesus Christ, Lord (*herra*) Thorvald Thoresson caused to bear witness before us at the lawthing those words which Ragnhild Simunsdatter had spoken. Ivar, husbandman (*bondi*) of Aith and Harald of Burrafirth bore witness that they were present in the living-room (*stofa*) of the ducal farmstead in Papay on the Monday in Passion Week when Ragnhild began to speak thus: "Bragister (*Breka saetr*) was not rented with the skat land (*skat jorðu*) Uphouse (*uppi i húsi*) and the Duke should take full rent even though Bragister was not rented with it". But Thorvald said: "So many good men (=councillors) have taken this in hand such as Thorkell of Ness, Lord Erik, Sigurd the archdeacon, Lord Eindrid, and many other competent men who had my lord duke's commission as to how much rent they were to take for him in Papay before me". Ragnhild answered: "I was not very bothered about the daft Eindrid when he came running here from Norway and didn't know how to get himself a welcome, but you all who knew have betrayed the duke".

But Swein the priest and Halfdan of Brouster testified that they were present on the morning after on the Tuesday out in the homefield of the aforesaid homestead when Ragnhild spoke thus to Lord Thorvald: "You must not be my Judas though you are the duke's" and these words Lord Thorvald had attested by all those who were present.

It is also proven (*Profaz*) that there had never been higher prices in all Papay than those which had always been current of old: a mark of refined gold for cultivated land from every pennyland. But in rent one and a half meills (*maelir*) from every refined mark and there are then two sald due from every pennyland[3].

Now as Lord Thorvald and those others whom she spoke to wish to deny this lawfully before the duke himself so we give this letter of investigation (*rannzaks bref*) to our honourable lord duke about the aforesaid

[2] The text has been divided into paragraphs by the author (BEC) to make the sense easier to understand. She is very grateful to Paul Bibire for his help in providing this new translation.

[3] This important information about land prices in Papay appears to be the official statement (ON *domr*) of the lawthing on the matter, and thus the information required in such a letter of enquiry for the clearing of Thorvald's name.

matters: and as we have no Lawthing seal these of our company set their own seals to this letter for true witness. Lord Erik *Ungi*. Gregory Benedictsson. Ivar Sperr. Magnus Hognasson. Erlend Geirmundarsson. Gunni of Neip. Erlend *alfeitr*.

Despite the archaic nature of this document and the obscurities of the matter in dispute, it tells us very clearly that a powerful individual, Lord Thorvald Thoresson, has been accused of financial improprieties regarding the collection of rents from Papa Stour, and that he was very concerned to clear his name of the accusation[4]. He is the initiator of the enquiry: he called the witnesses to give evidence of both incidents when he was the subject of Ragnhild's libellous charges, and he is said to wish to deny the accusation by having the letter of investigation drawn up, in which was included the official statement regarding land prices and rental rates in Papa. The process of *rannsakning* was specifically employed to establish the truth when the grounds of an accusation were unclear (*KL* sub *rannsakning*). It was particularly used in the case of royal officials and members of the king's following (*hirð*) before they were indicted at the king's own court; and it is certain that Thorvald would have been a member of the following of King Erik Magnusson at this time because of his title of *Herra*.

Another rather significant feature is that the seal tags by which the seals were attached to the document had been cut up from a letter which had been sent to Thorvald by Abbot Erik of Munkeliv Monastery in Bergen (Hødnebø 1960, no 66: Crawford 1992, 75). Tantalising fragments of the text can be deciphered; fortunately the address can be read so it is clear that this had been a letter of Thorvald's which perhaps tells us something about the control which he had over the preparation of the 1299 letter of enquiry, for it may have even been written by his own secretary/clerk. Although there is no evidence on the 1299 document itself as to exactly when in that year it was written it is assumed to have been drawn up at the summer meeting of the annual Lawthing assembly in Shetland, which met at Tingwall, probably in May or June. Certainly it is said that the witnesses repeated the altercation at the Lawthing. This must have been some weeks after the events reported, which took place just before Easter. At that time Lord Thorvald was in Papa with a following of several established farmers from different places in the West Mainland. Their presence in the island must have been for some official purpose.

4.2 THE CONTEXT OF THE DOCUMENT

Lying behind the accusation, and behind Lord Thorvald's evident desire to clear his name, is the authority of Duke Hakon, in the living-room (*stofa*) of whose farm on Papa one of the meetings took place. Ragnhild's emotional stand was on the duke's rights to certain incomes from the island, about which there had been a succession of men acting on the duke's behalf (as his *umbothsmen*) to try and sort the matter out. The lawthingmen sent the letter to 'our honourable lord duke' (*vars virdulegs herra hertogans*). Who was this powerful figure? As already mentioned (**2.4.1** and **3.1.4** above) Hakon, second son of Magnus the Lawmender, was given the foreign title of 'hertog' in 1273 at a very young age by his father, and he held it through his brother Erik's reign from 1280-1299, when Hakon himself succeeded to the throne. The area controlled by him as duke (his 'appanage') was about one third of the Norwegian kingdom, but it consisted of three parts: i) Osloherad and Uppland in the east of Norway ii) Egdafylke and Rygjafylke in the south-west and iii) the skattland islands Shetland and Faeroe. This fragmented holding may have been intended to prevent a dangerous split in the kingdom between two blocs of territory (Blom 1972, 40). Obviously these separate provinces had to be administered on Hakon's behalf by officials, while he seems to have spent most of his time in the eastern third. However, this is not to say that the other parts were therefore less tightly governed by him.

From 1284 Hakon was of an age to have control over his own possessions and the evidence suggests that he was an energetic and efficient administrator of his 'appanage'. He exercised his authority widely, he appointed his own officials, he kept all his incomes from his different sections and he even minted his own coins. Throughout his dukedom and his later rule as king he showed particular interest in legal affairs. He issued legal amendments (*rettarbøter*) for his eastern Norwegian lands and for the Faeroe Islands. In his law amendment for Hedemark and Toten he made the specific statement 'We shall in no way tolerate that people's rights are trampled on because of bribes, friendship, gifts or other unseemly things' (Sigurdsson 1995, 161). This attack on corruption in local

[4] This may also be because of the connotations of betrayal in the accusations. The ON word *svik* which was used by Ragnhild actually has the imputation of treachery. Moreover the use of the name 'Judas' also indicates betrayal of his lord for money -a particularly reviled aspect of Judas' betrayal in the Middle Ages (KL sub Judas).

administration was in reaction to the power of royal officials which had burgeoned during the minorities of Hakon and Erik after the death of their father. As the kings' authority had become established over an undivided kingdom of Norway in the mid 13th century the problems of ruling such a large territorial entity came to the fore. The kings found it difficult to control self-willed and corrupt sheriffs (*sysselmen*). Such men were part of a 'service aristocracy' who found it easy to win economic and political power at the expense of crown and people (Helle 1974, 266). When he became king Hakon took direct measures to abolish aristocratic titles and cut down on dangerous pretensions on the part of this new class of ambitious official.

Although we have no evidence of Hakon's actual administration of Shetland we can see from the documents of this period which have survived, some elements of the situation outlined above. First of all is the overpowering presence of Lord Thorvald, member of the king's *hirð* and ducal (later royal) representative (*sysselman*) in his native Shetland. Both in the 1299 document and in a later record of 1307 concerning complex negotiations over a fine owed by Bjorg of Cullievoe (*DN*, I, no 109: *RN* iii, no 393; Crawford 1992, 76), Thorvald is defending his position as official. In the first case he is accused of embezzling the duke's income from what was probably the main royal estate in Shetland; in the second it is clear that the Lawthing considers him to have acted harshly in the prosecution of royal interests (and probably to his own personal gain) (*ibid*, 81-3). But, as already noted, Thorvald is very concerned to clear his name with the letter of enquiry which was drawn up for him, in 1299, and this fits with what is known from other evidence of Duke Hakon's rule that he was concerned to control the overbearing activities of his local officials, and determined to protect 'people's rights'. The concern shown by Ragnhild for the ducal income from Papa is a rather surprising manifestation of loyalty to the distant royal landowner, which is also expressed in her accusations of Thorvald and others betraying their lord. It is very difficult to know what constructs can be made out of this startling evidence: it indicates a very remarkable awareness on the part of an islander of the acceptable norms of behaviour in relation to a distant overlord. It may be that Munch was right when he suggested long ago that she was perhaps the ducal 'housekeeper' in charge of the royal farm and had therefore a particular loyalty to Hakon, and concern for his rights. She may also of course have had a particular hatred for the powerful local official and was determined to bring his name into disrepute to repay him for some prejudicial behaviour towards her. But neither did she have any respect for powerful *umbothsmen* like Lord Eindrid whom she describes as 'mad' (*oerum*) (translated above as 'daft'), who had come from Norway and evidently made himself unacceptable to the islanders.

The authority of Duke Hakon, and the concern of all involved to act respectfully as regards his overall control of matters comes over very strongly in this document. His association with Papa Stour is also imprinted on the island's farm ownership from the record of the first meeting of Ragnhild with Thorvald in the 'living-room of the ducal farmstead' (*i stofuni a hertogaboenum*). Here is unequivocal evidence that the main farm on the island belonged to the duke, because it was royal estate, and that farm was probably Uphouse (*uppi i húsi*) mentioned later in the document. In fact it would seem highly likely that the whole island belonged to the crown, as would surely have been the case if it had been earldom estate earlier (**3.1.4** above). Unfortunately we have no evidence that Duke Hakon ever visited Shetland, let alone whether he ever stayed at his residence on Papa. The paucity of the sources about this period do not make it certain that he did **not**, but on the other hand his main arena of activity was certainly in south-east Norway, and his main external focus as duke and king was the regulating of relations with the north German trading cities. The anomalous situation whereby he did not control the area of western Norway around Bergen, which was the normal administrative centre to which the Northern Isles were tied, would have made it less straightforward for him, as duke, to have maintained any personal connection with Shetland and Faeroe. The days when the kings were free to sail over the North Sea to visit their skattlands and exercise some personal influence in the islands were over. Influence was now maintained by royal officials, the *umbodsmenn* and the *handgangen menn*, and as mentioned already this creation of a 'service aristocracy' operating in distant localities presented problems for the kings.

From later evidence we certainly know that the royal official himself, Thorvald Thoresson, was called *dominus de Papay*, and must have resided on the island which would have been his main base of operations in Shetland. He was certainly there in 1299 with a retinue of local men from the west side of Shetland, and with Swein the priest (perhaps the parish priest). Although he may have been doing his rounds as *sysselman* to collect Duke Hakon's rents and the skatt due from Papa, it is tempting to suggest that the island was at this time the main centre of royal administration in Shetland, or that it soon became so. The process by which Papa passed into the possession of the most powerful individual in Shetland, and what this tells us of its importance has already been discussed in section **3.1.4** above.

4.3 THE PEOPLE

4.3.1 LORD THORVALD

Having looked at the broader context of the situation in which the distant administration of the Norwegian Duke Hakon regulated and controlled events in Shetland, we can turn to the individuals who were the main actors on the scene in Papa in 1299. Thorvald Thoresson is the first Shetlander about whom we have any appreciable amount of evidence. Even so it is very uncertain as to who his father Thore was, and we can only assume from circumstantial evidence that he was born into the wealthier class of landowner rather than that he gained his status as a member of the 'service aristocracy'. We can be fairly certain however that Thorvald's main landed base was in Shetland, and that he was a native Shetlander. The remarkable fact that he called himself 'of Shetland' in several documents, from as early as 1289 to at least 1330, is very striking. No one else in Shetland's history has ever been known by that title, which probably tells us something about Thorvald's position of power in the islands and about his pride in that position!

Already in the reign of Erik Magnusson, Thorvald was a knight, and therefore had joined the royal *hirð* and done homage to the king. In 1289 he was named as an envoy of King Erik's for an embassy which was to go to England to negotiate for the marriage of Erik's daughter, Margaret, the heiress to the Scottish throne, to Prince Edward, son of Edward I of England (*DN*, xix(i), no 328, 331). There is no further evidence to show that he did in fact join the embassy or that he was in any other way involved in the complex negotiations over Margaret's marriage. Styled 'of Shetland' at that time suggests that he was already appointed official (*sysselman*) in the islands, presumably by the young Duke Hakon and presumably because he was already firmly established in Shetland through birth and family connection. There are two other records of his involvement in events of national importance, one in 1295 when he assisted in negotiations with Denmark, and the other much later, in Hakon's reign, when he witnessed a peace treaty (Crawford 1992, 75). This does not suggest that he was of first-rank importance in the government of the kingdom. But this is hardly surprising when the direction of Norway's foreign policy was changing at this time away from the British Isles towards Denmark and the Baltic. The close relations with Scotland, and the negotiations with England, in which the royal official from Shetland would be well placed to assist, had ended. Oslo and the rest of Scandinavia were a very long way away from Shetland and Thorvald's services were clearly not often required. There is other evidence to indicate that he had close links with western Norway: the letter from Abbot Erik in Bergen, which was cut up to make the seal tags for the 1299 document (**4.1.2** above), was addressed to 'his dearest friend Lord Thorvald (*aelskeleggom vin sinu(m) herra Þoruald*) and at a later date Thorvald acted as a witness for Munkeliv Kloster in Bergen in a lawsuit over land (*RN* iii, no 350).

His first marriage indicates close ties with western Norway. The evidence for this first marriage has been discussed by the author before (Crawford 1984, 51; 1992, 73-4), and it is problematical. The document concerned may show that Thorvald was married to an heiress from south-west Norway, but it is very difficult to interpret. All that can be said is that he may have been married and had interests in Kvinesdal in Rygjafylke. However as far as his marriage to the mother of Herdis is concerned there is no doubt. A later deposition from Herdis makes it clear that her mother was Ragndid, daughter of Jon Ivarsson Raud, and thus that Thorvald had married into a very powerful baronial family based in eastern Norway. After 1302 when his brother-in-law married the illegitimate daughter of King Hakon, Thorvald was brought into a close family relationship with the royal family. This would have made his social position secure and from which he may well have benefited from the point-of -view of his own position within Shetland. Even if he had not been given grants of crown land before he would very likely receive them after 1302.

Our present concern with Lord Thorvald is, however, as *sysselman* of Shetland; and there is one further document which provides a brilliant vignette of him in his role as royal official acting in a legal capacity, and which sends out a clear message about his *modus operandi*[5]. This concerns another woman, Bjorg, *húsfraeyia* (= house-holder', in the sense that she owned her own property) in Cullievoe (Yell), who was in trouble with Thorvald over payment of a fine (the reason for its imposition is never explained, but the fine was a large one). As royal official, Thorvald had negotiated with Bjorg over her offence, and whether she wished to have the Lawthing judge her case of whether she wished to come to terms (*Saettazt*) with him. This was probably a perfectly legal method of

[5] *DN* i, no 109; RN, iii, 393; English translation in *Orkney Recs*, xxix.

dealing with her situation but it laid the way open for official manipulation of the accused's circumstances. In this instance Bjorg had been unable to pay the acknowledged fine agreed with Thorvald–twice–and was about to forfeit some land as a result. She must have finally taken her case to the lawmen and then complained to the Lawthing. The judgement was an impartial one; she had to forfeit the land because of the failure to pay part of the fine, but she was allowed to pay the remainder in butter rather than in cash.

Several important features stand out in this case. One is the position of power which a sysselman possessed in this situation where he could manipulate the legal arrangements to his own–or his royal master's–advantage. One wonders how much of the fine would have stayed in Thorvald's hands while being passed on to the royal treasury, or indeed whether the forfeited land would have become crown estate or whether it would have remained in the sysselman's hands (Crawford 1994, 83). Despite the growth of the power of these officials, it cannot however be said in this instance that the authority of the local legal structure had been entirely by-passed. Mistress Bjorg must have appealed to the lawman and complained to the Lawthing with the expectation that she would receive a fair hearing. The written judgement was sent to the royal archives. Both this and the 1299 cases show the judicial structure in Shetland to be active on its own account, which fits in with the most recent assessment of the flourishing state of communal organisation in Norway in general in this period (Imsen 1990; 1994). They show quite remarkably that the powerful royal official was submitting to normal processes of legal procedure. What we do not know is whether these cases were exceptions, although we can hardly believe that they are the only cases in which Lord Thorvald interfered in the fiscal and judicial processes of Shetland (Crawford 1992, 85).

4.3.2 ISLAND TRADITION

From a totally different–and non-historical–source we have some remarkable evidence which can plausibly be used to support the impression given by these two documents of Lord Thorvald's dominant and over-bearing influence in Shetland. That is how he is remembered in Papa Stour. Early visitors to the island recorded oral tradition recounted to them about 'Lord Tirvil'. Indeed there is still a living tradition among the islanders of the rapacious activities of this character, who is supposed to be commemorated in place-names incorporating the name 'Tirval' on the island and in north-west Shetland. Although historians are wary of using oral tradition which has usually been embellished with details fabricated in the process of transmission, the circumstances in which folk memory of a powerful character from the past has been remembered on the island is quite extraordinary in Scotland (in general) and in the Northern Isles (in particular). Folk tales are not usually of much relevance for historical circumstances, and any individuals who are named in the stories are either too well-known for any significance to be attached to their remembrance–such as King Harald Finehair, remembered as the Harald of Haroldswick in Unst (Nicholson 1981, 17); or are merely names like the Norwegian princess Katrina in Foula. However with the legends about 'Lord Tervil' on Papa Stour we can be reasonably sure that this relates to the historical Herra Thorvald, *dominus de papay* who left a strong impression on the islanders of his life and deeds.

The most tenacious tradition was about the duel which 'Lord Tirvil' fought and the site of which was pointed out to the Rev George Low in 1774 where he 'observed the marks of a circular enclosure' near the middle of the cultivated part of the island(1879, 123). This is likely to have been the circle of stones which is still partly visible at the head of Housa Voe (col illus 7) and which may be the remains of a Norse judicial site (*dómhring*): certainly the association with a duelling encounter in the legend would appear to be significant (Crawford 1984a, 48)[6]. Thorvald's quarrel was associated with his daughter's marriage (or rather liaison) for she was abducted from a secure repository where she had been placed by her father on the top of Fruastack, now a detached sea stack at the entrance to Housa Voe, but possibly once joined to the island. The story as told by Irvine of Midbrake in his notebook (SA. Irvine of Midbrake Papers) and which was recounted to him by his aunt, is one of the earliest accounts[7]:

> There is a rock called "*Fruastack*" near the island of Papa Stur, which was in elder time the scene of a romantic adventure. TURVAL OF TURVALS-CORD in that Island had a beautiful daughter- she was beloved by the Laird of Fula, but her father refused his consent to their union: he rejected the alliance of Fula. TURVALSCORD had to go to Orkney to attend the Earl, but to secure his daughter he built a house on the rock for her to live in till his

[6] A Norwegian visitor in the late 19th century recorded that he heard there had been a 'famous Thingstead' on Papa (Crawford 1984, 49).

[7] Also mentioned by Rev George Low, and by a visitor, ? Fothergill in 1806.

return. The access to it was extremely difficult, from the steepness of the cliff. Yet lovers are never deterred; keen and wyly are they. FULA descovered where the maiden dwelt in darkness, and she willingly departed with him. When her father came home he found the Bower of the rock empty. his lovely Morna had flown with the Youth of the misty Isle who bore her with joy to his steep blue shores. The grey walls of the lonely dwelling still remain. The aged relate its tale to the young.
The story is believed to be true.

Local tradition[8] tells that Thorvald murdered his daughter's husband at Norby, across the Sound of Papa in Sandness. Hibbert, in the early 19th century, adds that he 'resisted all the attempts that were made to bring him to trial for the act, living by depredations in the country' (1822, 564n). All sources mention that he was drowned on one of his marauding expeditions, along with eleven of his sons, on a reef off Mavis Grind, still called 'Terwil's Baa'[9].

There are many stock motifs in these tales. Nonetheless the strength of the tradition about Thorvald's involvement in judicial duelling and his aggressive and quarrelsome relations with his neighbours tell us of the reputation that he left behind him, and which leave us in little doubt about his dominant and lengthy role in Shetland's history. What is remarkable is the fact that we do have the historical evidence to give some support to this tradition. Such a conjunction of myth and fact is highly unusual and this evidence has never been fully appreciated before this present research investigation into the history of Papa Stour.

4.3.3 RAGNHILD AND BJORG

Ragnhild and Bjorg can have been under no illusion as to the power and nature of the man whom–each in her different way–they so bravely tackled. More than anything else these legal records provide unique documentary evidence about the situation of women in colonial Norse society, an aspect which very rarely emerges from the historical record, although well-illustrated in the sagas. Much has been written about the position of women in the Viking Age (Jesch 1991; Jochens 1996) because there is much to read in the sagas. Of all aspects of Viking society which may be slanted by the circumstances of the saga writer's own age, the position of women is however most susceptible to bias and subject to stereotypical attitudes (Crawford 1987, 218; B & P Sawyer 1994, 189-90). Nonetheless the general impression to be gained from the sagas is that women lived in circumstances which gave them freedom which was exceptional in European terms. One might wonder to what extent this social situation was still surviving, some two centuries after the Viking Age, and long after the adoption of Christian mores and beliefs which brought Norse societies into close conjunction with the rest of medieval Europe. If the evidence of these two Shetland documents can be used with confidence, as providing a not abnormal picture of circumstances in the islands, then it would appear as if women had retained a freedom which is rather startling in comparison with the rest of medieval Europe.

The fact that the two earliest (and only) legal records of the functioning of the legal system in Shetland, before the islands passed to Scotland, show women acting on their own behalf before the law suggests that it was not unusual. Otherwise the coincidence of such a survival would be beyond statistical probability. In Bjorg's case she was herself considered responsible for the fine to the Crown, she negotiated with the royal official over its payment and she finally lodged a complaint against him and appealed to the public court–and appeared in it–for redress over what she considered to be harsh treatment (Crawford 1984b, 85). There is no way of knowing whether she was married or widowed, although we know from her title of *húsfreyia* that she had economic independence as a householder, even though the evidence also suggests that she had great difficulties raising the ready money to pay the fine.

Ragnhild is more of an enigma. We have no certain information or hint as to what her position in island society was, although it can be assumed from her knowledge and involvement that she was resident on Papa Stour, and probably a tenant (possibly indeed the ducal tenant of Uphouse). She is not accorded the title of *húsfreyia* and cannot have been of any high social standing. Her fury with Thorvald and his associates and her disregard for all the powerful *umbothsmenn* who had been in the island recently is quite clearly the result of a simmering grievance which had been festering for some

[8] As recounted still by Mr George Peterson of Bragaster.

[9] 'Terwil' being the modern Shetland form of the name Thorvald. The headland west of Mavis Grind is known as 'Thorvald's Head'. The association of his name with natural features at this most important isthmus is significant. It was at this point that boats were dragged across between Busta Voe and St Magnus Bay until recent times in order to avoid the dangerous waters round the north of the Shetland Mainland. For someone sailing between Papa Stour and Norway it would be a customary route to take.

time. In some way Ragnhild was personally involved in the matter of the deception of the duke, and when she calls Thorvald 'Judas' she implies that he was about to betray her as well as his royal lord: 'you must not be my Judas'(*þu skallt ecki vera minn iudas*) she cries. Here is a dramatic situation which is reminiscent of some saga scenes when vengeful women berate their menfolk . It is exceedingly rare to find such documentary examples of medieval women appearing in a public forum and playing such a dramatic role. The occasion when she raises the question of the rental assessment of Bragaster must have been a hearing or some official meeting which was taking place in the *stofa* of the ducal farm, and which was attended by two farmers from the west Mainland of Shetland. The confrontation the next morning when she warns the *sysselman* of his treacherous behaviour and which was witnessed by two other individuals may have been a chance encounter, as it took place out in the homefield of the ducal farm (*út i túninu*). Whatever Ragnhild's status was her accusations were treated very seriously and Thorvald was determined to clear his name of financial impropriety–or worse–which of itself is a significant indication of the value of a woman's word and therefore of her position in Norse society.

It is probably possible to conclude from the evidence here presented that the part played by these two women does suggest a legal freedom which reflects the independent standing of their sex in Shetland *c* 1300. These circumstances may not however have lasted for very long, as the decline in the economic situation which was to occur in the second half of the 14th century resulted in a changed social situation and a possible corresponding general decline in the status of women throughout the north, although a few certainly maintained their wealth and social position.

4.4 THE DISPUTE

The 1299 document opens a window onto the whole complex world of medieval Norwegian land assessments and the skat and rental incomes levied on the basis of such assessments. It gives brief references to an old system, which, as far as Shetland was concerned, was soon to be out of date, and to more recent assessments which had been introduced over the whole of Norway. It forms the basis of our understanding of Shetland's medieval economic organisation of land and revenue based on the value of land[10].

4.4.1 RAGNHILD'S COMPLAINT

Ragnhild's expressed complaint was about the way that the rent of one of the farms, Bragaster, was being collected by Thorvald and she says that it was **not** rented with the ducal farm Uphouse, which had the status of a 'skat land' (*skat jorðu*). It is likely that Bragaster had formerly been attached to, or had been economically part of this ducal farm, which was already assessed for skat, and that it had recently become an independently-assessed unit for rental purposes (illus 8 and 9 above). In some way she believes that the Duke is not getting 'full rent' (*fulla leigo*) from Uphouse because of this new situation–or because of Thorvald's manipulation of this situation. Perhaps he had withheld some rent from the Uphouse account in the belief that it included Bragaster as well, and that he was entitled to retain Bragaster's rent.

The trouble lying behind this situation may have arisen out of a re-assessment of arable land, and it appears that such a re-assessment was undertaken in Norway in the early 14th century based on the rental value of land (Smith nd 1). As an integral part of Duke Hakon's 'appanage', Shetland would also be included in any attempt to bring rental values of land more in line with current exploitation of landed resources, and the 1299 document suggests that such a development had already taken place or was in the process of being implemented at that time. But the situation in Shetland was entirely different from Norway because Shetland had been part of the earldom of Orkney until 1195. So there was a sophisticated system of land assessment based on ouncelands and pennylands already in existence in the Northern Isles by that date and probably as far as the ounceland was concerned long before that date (see chapter **2** note 7 above). Indeed we have the statement at the end of the 1299 document which sets out the official fiscal situation in Papa Stour as it then stood, referring to pennylands and which also tells us that there had been a valuation of the pennylands in terms of gold and silver

[10] The author's (BEC) understanding of these systems owes much to Brian Smith's researches into Shetland's rentals and assessments, which he has unfailingly shared with her over the years. Any inadequacies in her understanding of this evidence are due to her own shortcomings (and the complexities of the rental material!).

marks (Smith nd 1, 15). This had taken place presumably before 1195 (when Shetland was taken away from Orkney) as marks are also known in Orkney in the Middle Ages. These complexities resulted from the high degree of organisation which we know the earls had implemented in their lands from late Viking times -an organisation which was updated from time to time as the economic need arose.

It would not be surprising therefore if Shetland's tax and rental structures did not fit easily into the system established in the home country of Norway. When Shetland was brought into the 'appanage' created for Duke Håkon Magnusson in 1273 it was probably adapted to the fiscal structures in the rest of the ducal territory. This process would take a more focused development when Håkon came of age in 1284 and soon began to rule his territories with energy and evident interest in administrative and legal organisation. It must have been in the years following 1284 that the numbers of 'good men' who would have been advisers or counsellors of the young duke (referred to in the 1299 document) were given a commission to deal with the problem of the duke's rent in Papa Stour.

This is incidental information in the document which gives a rare glimpse of the involvement of the ducal advisers in the affairs of the island, powerful men of the duke's following who came to Shetland in order to sort out the problems arising out of the implementation of new fiscal assessment structures in their lord's distant territories. They probably had to visit other areas, but we only know of their visit to Papa Stour and of Ragnhild's scorn for one of them–the 'daft' Eindrid. What had happened to the hapless Eindrid is left to the imagination, and we cannot be sure who he was but from his title of *Herra* one would expect him to appear in other governmental record material. Eindrid Simunsson is prominent in western Norway a few years later, as treasurer and lawman in Bergen (Helle 1972, 449) – if he is to be identified with 'Herra Eindrid' then clearly he was not as 'daft' as Ragnhild says! Of the remaining 'good men' it is not surprising to find Sigurd, archdeacon of Shetland, and thus the most important ecclesiastical official in the islands; nor would it be surprising if the 'Herra Erik' were the abbot of Munkeliv monastery in Bergen. The latter was in fact called 'Herra Erik' a few years previously when acting with archdeacon Sigurd in a land transaction (*DN*, xii, 16). He was prominent in the royal councils in the last decades of the 13th century and died in 1299 (Helle 1972, 589). It was a letter of this abbot to 'his dear friend Lord Thorvald' which was cut up and used for the seal tags of the 1299 document. The first 'good man' listed, Thorkell of Ness, is otherwise unrecorded.

The final statement about land prices and rent on the island must have emanated from the depositions of people concerned who were able to 'prove' (*profaz*) to the lawthingmen as to the facts of the matter. First it was stated that 'there had never been higher prices[11] in all Papa than those which had always been current of old: a mark of refined gold for cultivated land from every pennyland'. Here is the evidence that the pennylands had been revalued in terms of marks and moreover to the staggeringly high assessment of a mark of refined (burnt) gold for every pennyland; this is an exceptional use of the mark of gold as a measurement of land, which is not known in Norway (*KL* sub *Guldverdering*). The implication is that this was a very ancient assessment but it has been suggested that such a revaluation may have taken place in the 1130s in connection with the earls' need for funds for the building of St Magnus' Cathedral (Smith nd1, 8) [12].

Then comes the statement about rent: that one and a half meills were due from every refined mark, 'and there are then two sald due from every pennyland'. The mark here is a silver mark (eight of which were equivalent to a gold mark) and it had to produce one and a half meills (containers of corn). This set the required amount from a pennyland (x eight) of twelve meills which equalled two 'sald'. The implication is that the income from the mark is set and from that it can be worked out what the pennyland had to pay. It was evidently the way the assessment affected the pennyland which was under dispute. As Bragaster was a pennyland division (Smith nd1, 13) we can understand how the assessment of its rent according to a different mark unit would upset Ragnhild, and no doubt plenty of others who were similarly suspicious of the new system–and of those who operated it.

4.4.2 THE WITNESSES

Seven lawthing-men sealed the 1299 document, about whom very little is known. They were all obviously Shetlanders of some standing in their community, one of whom, Lord Erik *Ungi*, has the title of *Herra* which

[11] The ON word *verðauraur* means the purchase or sale price and it was set annually by the Lawthing in Iceland and therefore probably similarly in Shetland.

[12] The author's own analysis of the pennyland assessment has suggested that it may have been introduced by the earls later in the 12th century, in connection with the levying of Peter's pence, but was based on earlier land divisions (Crawford 1994, 137-46).

indicates that he was a member of the royal hird (like Thorvald himself). Two of them also appear in the 1307 document as *lagrettamenn* who made up the jury for Bjorg of Cullievoe's case. The fact that they had seals suggests an awareness of personal and family status which is rather surprising for most of them had no title – or indeed farm-name – attached to their own name, which might suggest that they were ordinary peasant farmers of no great pretensions. Personal seals had been adopted in Norway in the 13th century by the nobility with some enthusiasm, but it is also clear that it was considered normal if not mandatory for farmers who were involved in communal public life to also have their own seal in the 14th century (Imsen 1990, 94). Shetland clearly followed the same norms-and indeed seems to be well up to date with the practice in the late 13th century. Remarkably the 1307 document suggests that all 12 of the *lagrettamenn* had their own seals. In Norway a large number of the non-heraldic seals belong to *lagrettamenn* (*KL* sub *bondesegl*); who certainly seem to be counted as farmers (*bonder*). But the distinction between the upper strata of this class (*storbonder*) and the lower orders of the nobility (*småadel*) is not very clear.

The seals that have survived on the 1299 document show fairly simple devices (illus 14a): that of Erik *Ungi* is a sword erect between two roses, slipped issuing from the hilt, with a beaded border; Gunni of Neip's a rose of six petals in a beaded circle; Erlend *alfeitr*'s a ship with a flag from the mast. From the 1307 document we have Erlend Geirmundarson's: a dagger erect between two stars of eight points in chief (*Orkney Recs*, 385). They are essentially non-heraldic, but nonetheless interesting for that (Clouston 1930, 33).

What is also interesting is the fact–stated in the 1299 document–that these men seal the documents because the Lawthing itself has no seal. This is hardly surprising at that date, for the provincial legal assembly of Norway (the Gulathinglag) had been granted its communal seal only a couple of decades previously, and the Frostathinglag by King Erik in the 1280s. The next legal districts to receive their own seals were Jemtland, on the Swedish frontier, and Orkney; it was probably royal policy to grant such seals to peripheral areas, in a deliberate attempt to boost royal authority by including the royal Norwegian lion in both seals[13]. These communal seals are highly distinctive, and a particularly notable feature of Scandinavian society where the Lawthings played such an important role in the life of the community. When Duke Håkon ruled as king he was responsible for granting seals to some of the smaller Lawthing districts, and he may have been the king responsible for granting Orkney theirs. Did he grant one to Shetland too? Not by 1307, for the court document of that year was also sealed by the members of the court–although there is no mention of the absence of a Lawthing seal then. One cannot help but feel that the specific reference to the lack of a seal in 1299 may have been a deliberate attempt to draw this to the attention of Duke Håkon. All we know is that Shetland had a 'common seal' at some time in the Norwegian period and that it went on being used after the pledging of the islands to Scotland; but when it was granted is not known, nor, unfortunately, is there any surviving representation of the seal itself. This is due to the total lack of surviving records from the Lawthing after the documents of 1299 and 1307. The medieval seals of Faeroe and Iceland have survived, as well as the remarkable example of Orkney's 'common seal' but alas, not Shetland's.

4.4.3 THE OUTCOME

As will be now quite clear, the 1299 document is an exceptional survival in many respects. So exceptional that there is nothing else which gives us any hint about the result of the sending of the 'letter of enquiry' to Duke Håkon. Of course he became king later that same year, and his attention thereafter would be focused on national policies, so that the peripheral parts of his kingdom in the west would become of less interest. The situation in Shetland would have reverted to what it had been before the creation of the dukedom, and contact with the royal administration based in Oslo would be minimal. In such circumstances the powerful *sysselman* would rule his district with little interference, and we can guess that Lord Thorvald survived the rumpus with impunity and with his power unaffected and his reputation hardly tarnished. We can certainly tell from the 1307 document that he was still acting as royal official in Shetland dealing with fines to the Crown. As discussed earlier, he continued to be involved in some of the more important state occasions, and in 1312 he was drawn into the royal circle through marriage connections. The evidence from the papal document of 1330, that he was called *dominus de Papay*, gives us all the information that we need to draw conclusions about the continued position which he held in Papa Stour, and undoubtedly in Shetland. The marriages arranged for his son Thorvald and his daughter Herdis with members of the most powerful Norwegian families are corrobor-

[13] Crawford 1979, 22. An article on 'The Orkney Arms' was written by the author (BEC) in The Orcadian on July 13, 1978.

ative evidence for the established position that he had gained for himself in the kingdom. The papal dispensation for the marriage of his son Thorvald and Aesa Hakonsdatter says that the marriage was for the 'settling of family feuds', thus hinting at some quarrelsome relationship in the upper levels of Norwegian society which Thorvald then moved in.

By this date the sort of position which Thorvald had attained would automatically mean that the individual had a landed power base, and that power base was more likely to be royal estate granted to him as a *lendirman* than family odal land. As with most other European kingdoms the Norwegian crown lands were constantly used for rewarding close members of the king's *hird* (following). Royal officials had always resided on royal manors, but as the office of *sysselman* tended to become hereditary (in the first half of the 14th century) so the royal grant of land to the individual would be passed on to the son and then very rapidly become regarded as family property. The *len* was supposed to be a grant for the lifetime of the king only, and disposition rights rested on whether the land was crown odal or not (KL sub *Krongodset*); this principle appears in some of the Norwegian laws but it does not appear that it was as strictly adhered to in Norway as in the other Scandinavian kingdoms. General 'feudalising' tendencies appear in Norway in the 14th century which was a time of increasing difficulty for the crown when it became embroiled in the politics of the rest of Scandinavia. Håkon V's reign appears to be something of a watershed and there was in fact a lawsuit over his grant of Borgesyssel to his son-in-law and the Havtoressons (eventually they were the heirs of Herdis Thorvaldsdatter; see **3.1.4** above). After the king's death, when the crown was in the hands of his legitimate daughter and her Swedish husband the process by which royal grants of land remained in the possession of the beneficiary and his family must have become the norm. This was how Papa Stour passed into the hands of Thorvald's daughter, evidently in the absence of any male heirs (who all perished with Thorvald in a shipwreck off Thorvald's Head, according to the tradition cited above).

4.5 THE *STOFA*

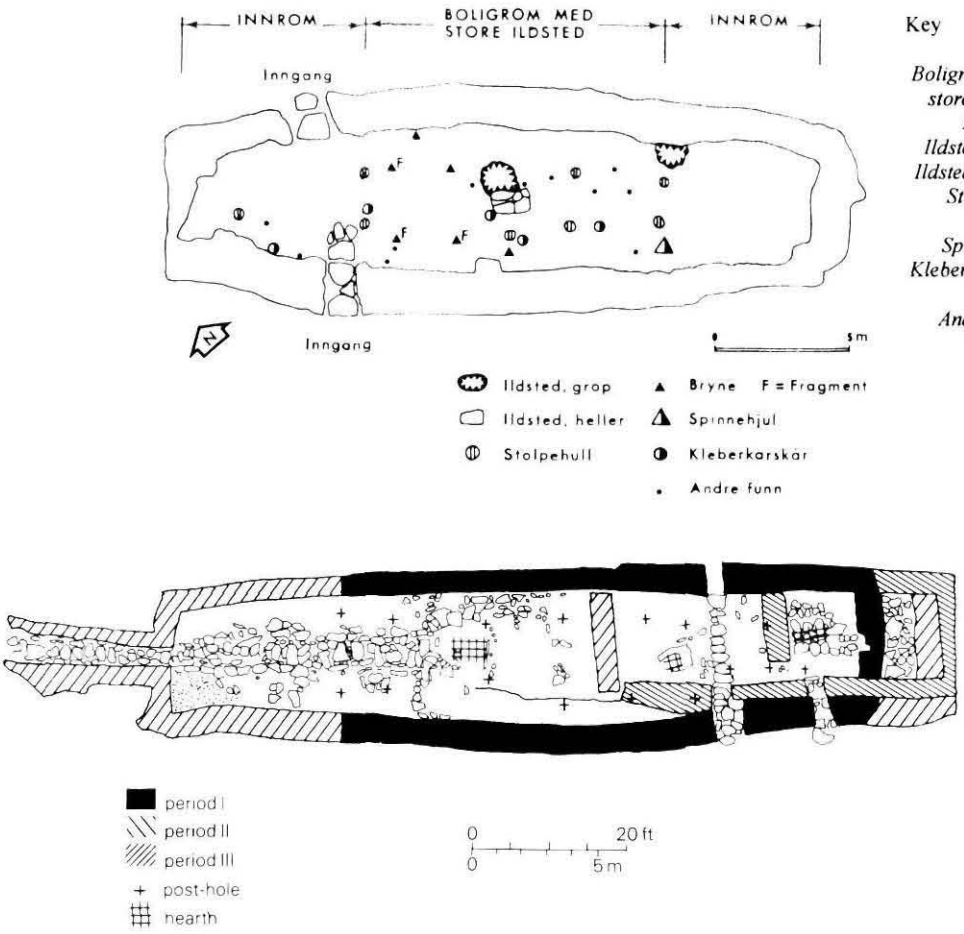
In one final respect the 1299 document provides us with a unique piece of evidence: for the existence of a building called *stofa* at the duke's farm on Papa Stour, in which the first encounter between Thorvald and Ragnhild took place. It was this reference which led to the excavation on the island in the hope of locating the ducal farm and maybe even this particular building.

4.5.1 DEFINITION OF THE TERM *STOFA*

What was a *stofa*? In this particular circumstance it was evidently a specific room or building on the duke's farm where meetings took place. The word has usually been translated into English as 'living-room' which does not really convey the significance of the term. It was introduced into Northern Europe in the early middle ages for a particular type of building or room which was developed or added to farms as dwelling-houses changed from the older hall-houses[14]. Philological studies show that the term spread north from south Germany with the meaning of 'winter living-room', and the origin of the word itself is connected with the method of construction of a closed timber building made of notched logs (Hahnel 1975, quoted in Stoklund 1997, 111).

This introduction of a new term and a new method of building construction is thought to indicate a new 'room ideal' (Stoklund 1997, 126) and although the log-timbered *stofa* spread throughout those parts of north Europe where an abundance of pine forest provided the best timber, it is also found in less wooded areas, where it might be incorporated as a unit into a building constructed in different ways. The undivided longhouse appears to have been partitioned into smaller dwelling spaces as the Viking age waned: different buildings were developed at the same time for the various functions carried on in the farming community. This probably reflects some sort of change in social attitudes and a move towards greater privacy. The term *stofa* appears in the documentary sources for one of these rooms, which seems to have been the 'best' room in the house, as opposed to the main dwelling area where the cooking and

[14] A fuller discussion of this interesting development in Scandinavian architecture can be found in Crawford 1985a, 1996.



Key

Innrom	:	storage room
Boligrom med	:	living room
store ildsted	:	with large hearth
Inngang	:	entrance
Ildsted, grop	:	fireplace, pit
Ildsted, heller	:	fireplace, stone
Stolpehull	:	posthole
Bryne	:	whetstone
Spinnehjul	:	spindlewhorl
Kleberkarskår	:	soapstone vessel fragment
Andre funn	:	other finds

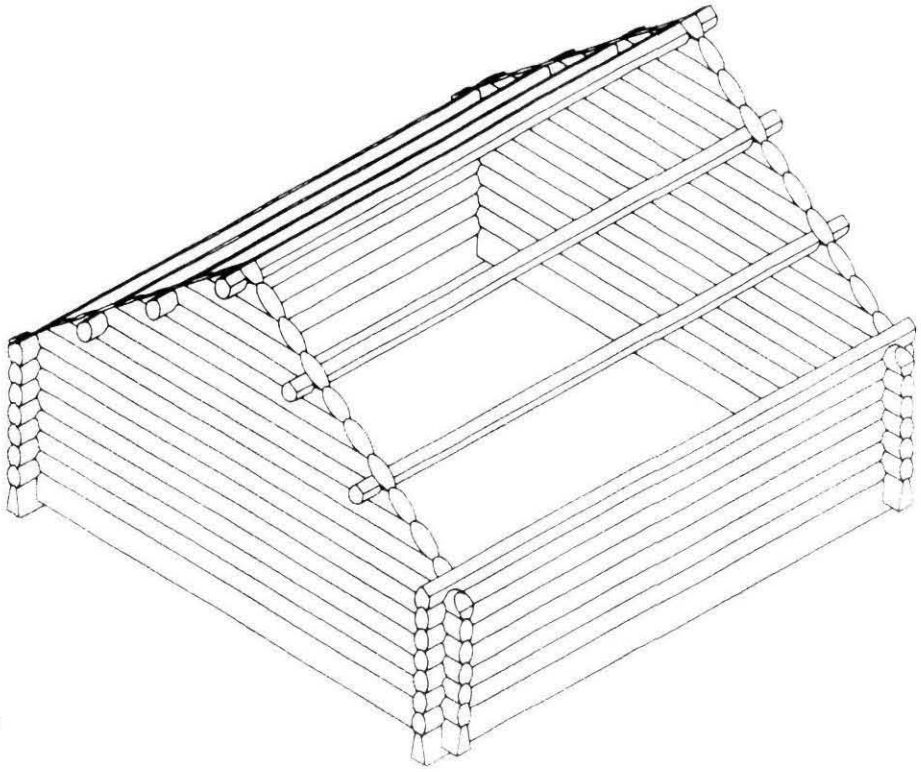
illus 15
Norse long-house examples
a) at Oma in Time, Rogaland (from Myhre 1980, fig 185, based on Petersen 1933, p.LIII);
b) Jarlshof, Shetland (after Hamilton 1956, fig 52).

food-preparation was carried on. This was the *skáli* (= 'hall'), later known as the *eldhus* (='fire-house'). In the lists of buildings which appear in medieval sources there is also the *bur* ('store-room') (see discussion of names at the Biggings in section **3.5** above).

It has been argued by Myhre (1980, 384) that these names can be applied to the different elements of the older longhouses which were subdivided even in the earlier Iron Age (illus 15). But we do not know what the different sub-divisions of the longhouse were called before the documentary sources exist, although the central hall area certainly seems to have been known as *skáli*. Functionally it was succeeded by the *stofa*, which, as a general living-room, would have provided for a multitude of activities (it has been described as the 'daily activity quarter': Urbanczyk 1992, 95). By the time of the Icelandic sagas of the 13th century, the *stofa* appears to have been used as the principal room of the farm for living and eating, as well as being the room where the women's weaving activities were mostly carried out. It may also have served for a sleeping room on occasions, although the side-benches in the older hall (*skáli*) probably functioned as beds for the majority of purposes. In *Orkneyinga Saga* (chap 55) there is a reference to the 'little stofa' (*litlustofa*) where the women are said to have been sewing a shirt for Earl Harald in the early part of the 12th century.

4.5.2 THE NATURE OF THE 1299 BUILDING

Examples of excavated *stofa* buildings from Norway and other parts of the North Atlantic (section **8.3.1** below) demonstrate the sort of building which would be expected from the use of the term *stofa* to describe the building where Thorvald and Ragnhild met in 1299. The exact method of construction was not always the same, although the type of building the term represents, and the interior lay-out, were of a standard arrangement. A



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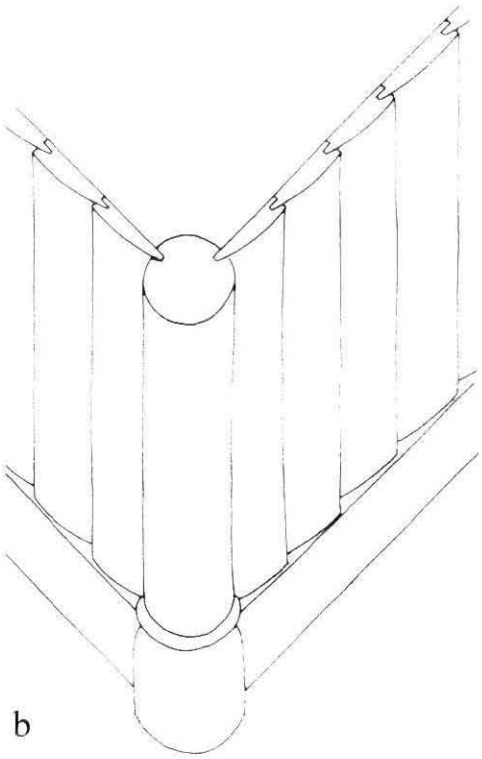

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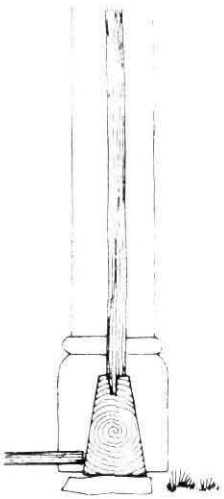


Illus 16
a) Sketch of a 'lafted' building showing how the notched logs fitted together at the corners, and how the roof-beams slotted into the gable walls (drawn by Bo Gjersaa in Stoklund 1996, fig 106);
b) sketch of the corner of a 'stave'-built structure showing how the upright wall planks could be slotted into the horizontal sill-beam and into the corner post (after Christie 1974, fig 4).

moderately-sized wooden structure, of either 'lafted'[15] (log) or 'stave' (plank) construction (illus 16 a & b) with wooden interior furnishings, it would certainly have narrow wall benches and, by the late 13th century, perhaps a corner hearth. Its entrance would be in one gable, and might be an internal doorway opening out of the older longhouse to which it was integrally attached, or it might be an outside entrance. If it was a separate building of 'lafted' construction there might have been an ante-room covering the gable doorway with a side entrance leading into the ante-room (illus 124 below).

Situated as Shetland is between Norway and the north Atlantic islands it should not be expected that exact copies of the known excavated examples of this type of building would be found. It would be remarkable enough if any traces of these features could be recognised in circumstances where there was long continuity of settlement on the Biggings site. First of all, of course, the most likely location of Duke Håkon's farm had to be established on the island before excavation could begin.

[15] This term is derived from the Norwegian *å lafte* = 'to notch logs together at the corner' as used in Crawford 1996, 139.

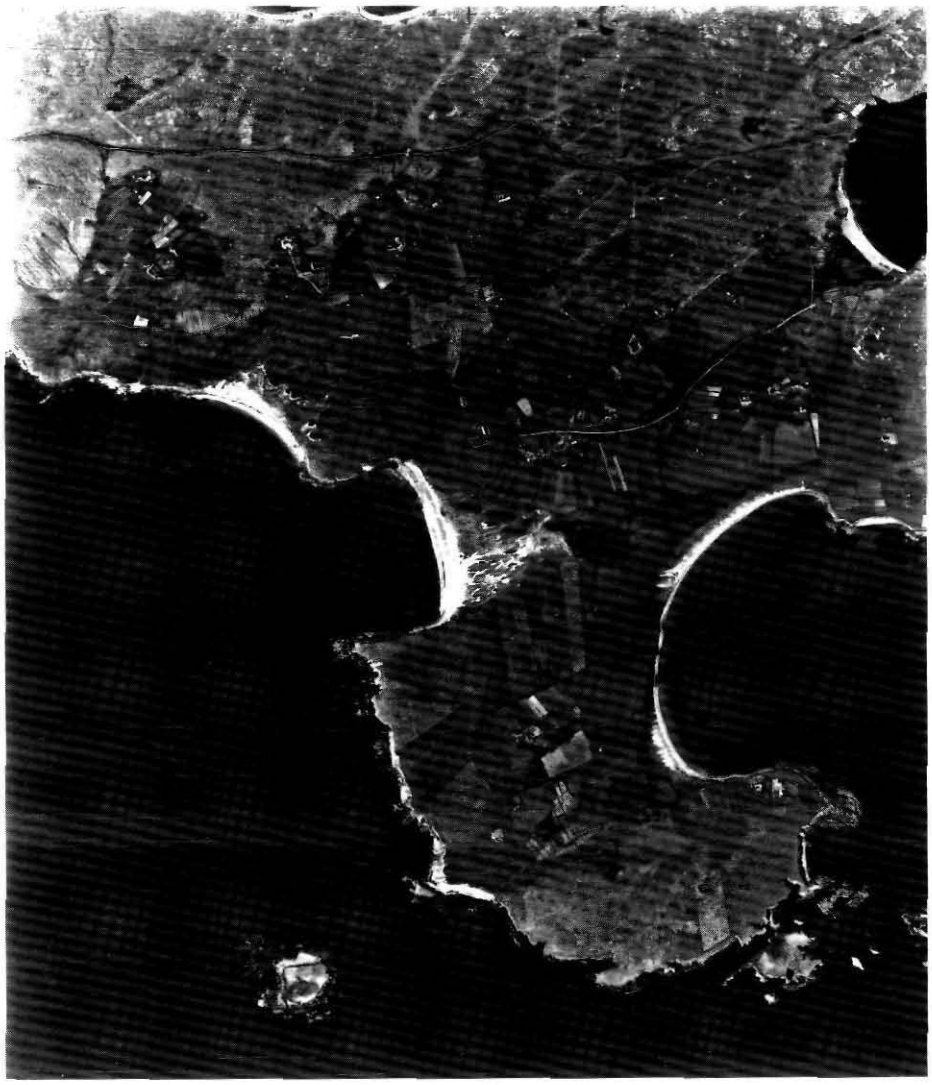
5

PAPA STOUR: THE EXCAVATIONS AT THE BIGGINGS

5.1 INTRODUCTION: DECIDING THE LOCATION OF THE EXCAVATION

Barbara E Crawford

Having decided on the grounds outlined above (**3.5**) that the likelihood was that the main farm on the island had been at the Biggings (which would therefore have been the location of the *hertugaboenum* of the 1299 document), the next step was to assess the situation on the ground. Preliminary work indicated the most likely area for excavation as lying within the walled yard at North Biggings. It was clear from the earliest OS map (illus 7 above) and from the RAF aerial photographs (illus 17) that part of this yard had not been cultivated in the recent past, and the crofter, Mr Alec Scott, confirmed that the southern half of the yard had never



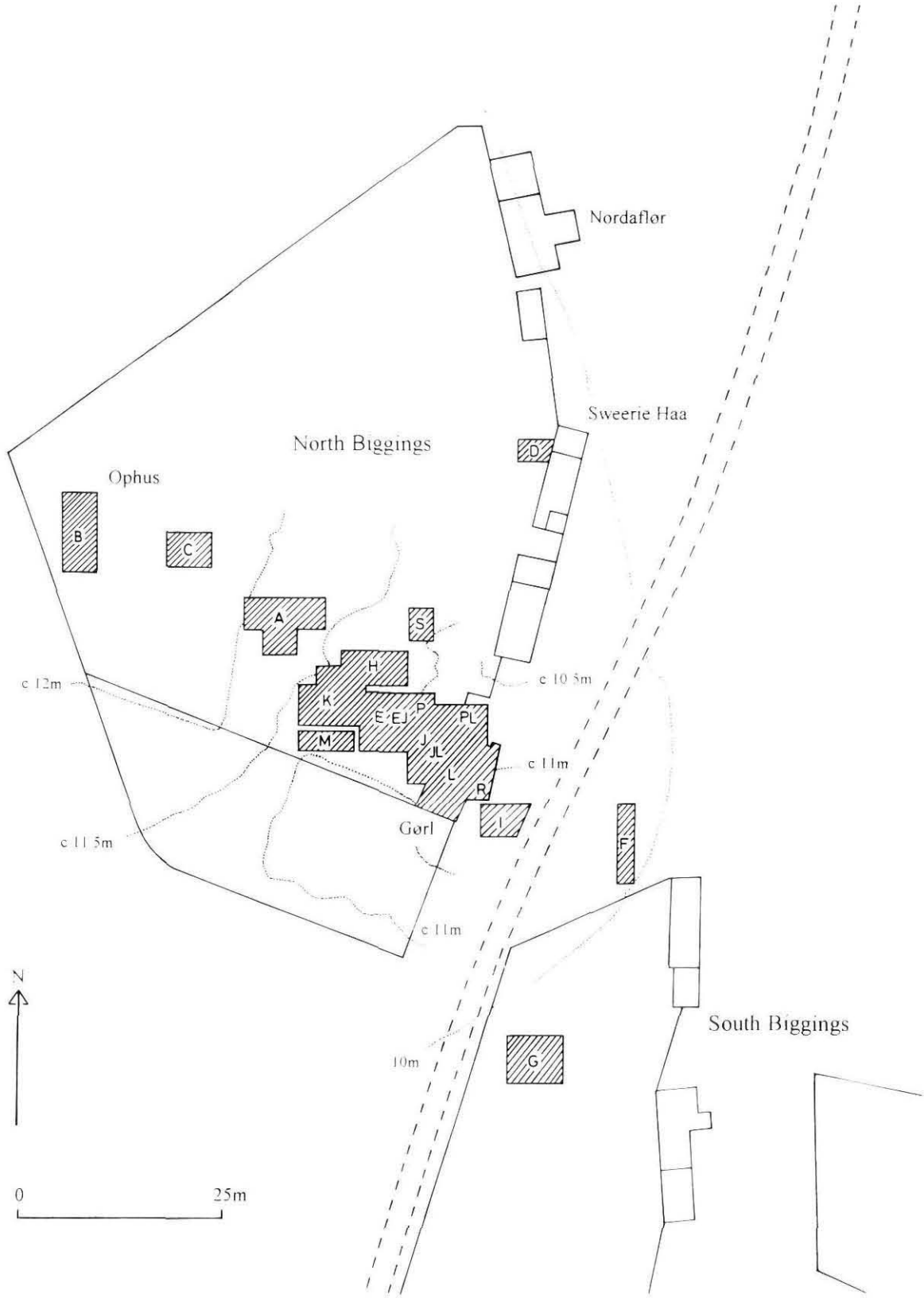
illus 17
Aerial view of the eastern part of Papa Stour, dated May 1946. (RAF Collection RCAHMS *Crown Copyright*).

illus 18
View of the Biggings from the east. The scaffolding tower shows the location of the excavation site.

been cultivated because of the remains of the dwellings destroyed in the 19th century and the amount of stone and rubble still underneath the ground. This was the area (*c* 2960m^2 in extent) between the remembered site of Ophus (Uphouse), at the western edge, and the abandoned crofthouse of the Gørl at the eastern edge (illus 18; 19). Such an area was rather large when there were few guides as to the best place to start looking for medieval structures. We were a little misled by the remembered site of Ophus–useful though that knowledge was as to the significance of the area in general. It became clear that the 13th-century 'Uppi i husi' had not been on the same site as that croft which had the name Ophus in the 19th century (see discussion of this name in section **3.5** and illus 13).

This original central location of the North Biggings community had been abandoned when the old houses were torn down and the dwelling-houses re-aligned in the middle of the 19th century (see section **3.4.3**). In one way of course this was fortunate as it provided the opportunity for excavation at the core of the early settlement. In all other respects it made the situation exceedingly difficult: the destruction had been so thorough that reconstruction of the building lay-out at the west end of the site by archaeological analysis has been rendered virtually impossible. Only through the circumstances by which the Gørl house was built over the eastern part of the site were earlier levels there preserved to a degree which had left an undisturbed archaeological record of the Norse period.

Despite the extreme difficulties of excavating in an area of former dense settlement, it nonetheless provided useful lessons for our understanding of the history of Norse and later settlement in Shetland, valid since the focus of archaeological attention had hitherto been on the abandoned coastal sites, such as Jarlshof, Underhoull, Sandwick and Kebister. For parallel circumstances in which Norse houses have been excavated in the centre of existing rural communities it is necessary to look to sites such as Tjørnuvik in the Faroe Islands. Such places, which have continued to be successful settlements up to the present day, give us a quite different picture of settlement development in the North Atlantic island communities. These may not always be the same sites as those of the earliest Viking settlers (as discussed in connection with Papa Stour **3.1.2** above).



illus 19
Excavations at the Biggings: the trench layout.

5.2 A SUMMARY OF THE EXCAVATION CAMPAIGNS

5.2.1 FIRST SEASON 1977

Nine trenches (A-I) were opened in the first year (illus 19). These were located on the southern side of the yard between Ophus and the Gørl, with two external trenches opened on the South Biggings side of the road (F and G) while D was placed next to one of the former croft houses further north (Sweerie Haa). This was an ambitious excavation programme but it showed quite clearly where we should be concentrating our efforts. Trench E started to produce late medieval pottery and soapstone fragments as well as many other interesting stone implements (Crawford 1978, 29). Stone structures of quite a different kind of construction from the 19th-century houses indicated a house site of some interest, while the presence of pieces of birch bark in thick deposits of peaty soil (illus 44 below) were recognised as the destroyed remains of roofing material by Christopher Harris, site supervisor, who had experience of excavation in Bergen and Trondheim. Birch bark is used in traditional methods of roof construction in Norway, but had never been noted in excavations of Norse houses in the Northern Isles before. This part of the yard was where the former dwelling-house of Da Porrie had stood (illus 13 above) and it proved to be central to the whole North Biggings settlement. It pointed us to the best location for focusing the next stage of the excavation campaign.

5.2.2 SECOND SEASON 1978

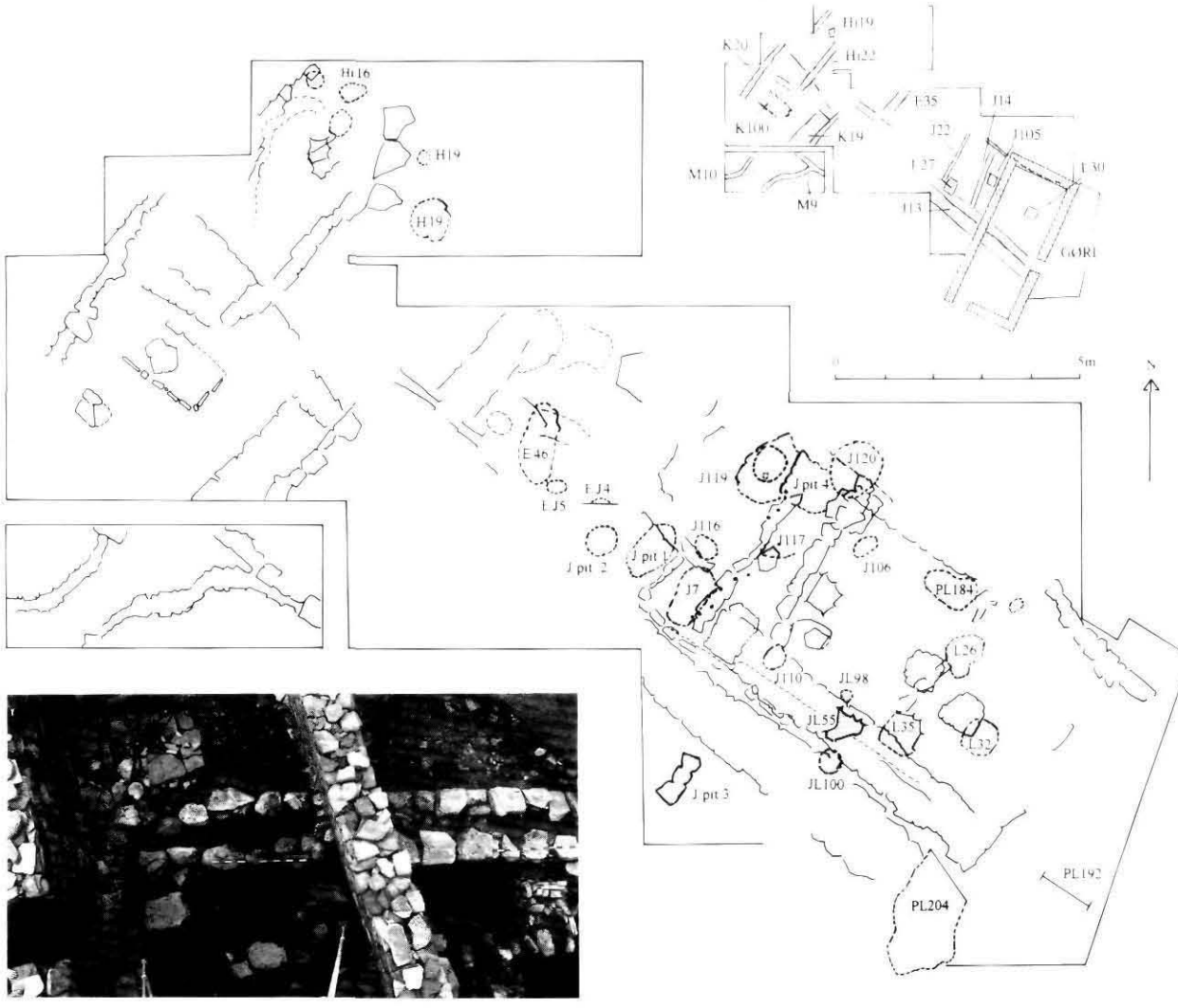
A further trench (J) was opened close to the ruined croft building, the Gørl, and K was opened up just west of E and H. This confirmed that the area round the Gørl was where there had been least destruction, including the important fact that the building of the Gørl had preserved medieval layers underneath and around its walls. Structures uncovered showed that a Norse house lay at right angles to and partly under this abandoned croft house (illus 20). A preliminary examination of the south end of the interior of the Gørl (trench L) showed that the large, well-built long wall on the south side of the Norse house (J13/ Wall 'A') continued underneath the Gørl. This wall raised expectations that we were beginning to expose a typical longhouse of late Norse date, although as yet there was no conclusive dating evidence. The Interim Report mentions the possibility of a *stofa* building (Crawford 1979).

Another important aspect of the Biggings excavation–the evidence of cooking and the size and variety of hearths– was being revealed for the first time in Trench H. This trench was a nightmare, as it consisted almost totally of the debris from the 19th-century destruction of the dwelling-houses, but it did at least contain remarkably rich evidence of a huge hearth/oven complex (Hi19) and of pits at the very lowest levels, the first hearth and pits to be encountered. Steatite baking griddles, querns and flat baking or grain-drying slabs all gave indication of the abundant use of cereal foods made from grain grown on this fertile island. Coarse hand-made pottery was also being found in abundance. Above all we were beginning to appreciate the significant preservation of organic material from fragments of textile, including the foot of a woven stocking, (SF 1657, illus 113). A wide variety of hearths and accompanying food processing, cooking and serving equipment were found.

5.2.3 THIRD SEASON 1979

This was the final season of the preliminary excavation campaign as the main funding bodies had promised support for three seasons only (see **Acknowledgements**). The main focus of the trench extensions in 1979 was the attempt to expose the whole of the Norse long-house. It confirmed the complex nature of the archaeological picture and the extreme importance of the conditions of preservation. Apart from cross wall J22, few walls were found, but the discovery of a wooden floor led to the eventual realisation that we had a wooden house on our hands. The floor was a most exciting discovery and completely unexpected in the context of Norse archaeology in Scotland. The reason for the unusual state of preservation was the peaty nature of the fill over the whole site which had been compressed into an anaerobic layer and thus preserved organic materials. Conversely, these acid conditions meant that bone and metal had not survived at all.

The best preserved section of flooring was found immediately outside the west wall of the Gørl and could be traced running right underneath the wall of the later croft house (illus 20). The width of the floor defined the width of the Norse house, which the absence of walls failed to do. Its length at this stage could not be determined. Although the condition of the wood was very poor–it had been so compressed that it had become a solid peaty mass–it was possible to record and photograph it. The discovery of the wooden floor confirmed that we had a very unusual and probably high-status building, and the use of the term *stofa* to describe it was felt thereafter to be justified. Some background research into the nature and design of Nordic wooden buildings was going to be a necessary prerequisite to further excavation!



illus 20
The Biggings: composite plan of features of Phases 1-5 with main structural elements and location of pits; inset shows excavation of structures lying beneath the walls of the Gørl; from N.

5.2.4 FOURTH SEASON 1982

The remains of the wooden building having been securely covered (with polythene stones and turves) the following three years were spent in planning and raising the funds to return to excavate further. We returned with a better-informed research strategy for interpreting wooden structures. It was not possible to raise the floor, because of the degraded nature of the wood: the intervening period had made little difference in this respect. All excavation effort was focused at the eastern edge of the site around and in the Gørl, with the intention of completing the excavation of the *stofa* and understanding the archaeological sequence there before returning to the western half of the site where conditions were so much more disturbed. Levels below the wooden floor in Trench J were excavated to natural rock. Trench L inside the Gørl was extended and excavated to 'natural' sand, and although only fragments of the wooden floor had survived in this area it was possible to confirm that it had run the whole length of the *stofa* building. Other features of wooden buildings were found such as the earthen bench along the south wall (see **8.3** below).

The absence of any other stone walls, or of foundations for them, confirmed the likelihood that the building had been completely constructed of wood, (a realisation slow to develop: the Interim Report for 1982 still expresses surprise at not finding the stone remains of the northern long wall to the house).

Hearths have already been mentioned as an important feature: those from the *stofa* in Trenches J and L were of different type from those in K and H, and the total provides a remarkable series of most types of Norse hearth. A stone-lined rectangular central hearth, a wall-hearth, a corner-hearth comparable to those found in the urban excavations in Bergen and Oslo, and–the earliest–a stone-lined hearth-pit which is not easily paralleled at all. The central hearths of the *stofa* were

located directly underneath the west wall of the Gørl, so that they could be only partially excavated in this renewed campaign. This extremely difficult situation, of having to interpret a building which was being excavated inside and around the standing walls of the Gørl, forced upon us the conclusion that it would never be possible to fully understand this complex site until the Gørl had been demolished

Pottery and soapstone formed the bulk of the finds from this season's work, but also wooden artefacts and textile fragments, none of which provided closely dateable evidence. The first radiocarbon dating estimations were therefore made from wooden fragments and from carbonised material in pits (**5.5** below). When calibrated they only provided a very wide date range which did, nonetheless, help to confirm our initial dating of the houses from the material finds assemblage.

5.2.5. FIFTH SEASON 1987

This year saw the deliberate removal of the impediment presented by the walls of the Gørl, with Mr Alec Scott's agreement. Two-thirds of the building, which lay over the Norse *stofa*, was dismantled. The remaining third, the southern gable of the Gørl, was retained as a visual reminder of the total building history at the Biggings (illus 144 below). The strips which had lain underneath the Gørl's north, east and west walls were excavated and had consequently to be fitted into the stratigraphy of trenches J, L and P. Another section of the wooden floor was uncovered. Unfortunately, the temporary bench mark for the site, which had been located on the wall plate of the NW corner of the Gørl, disappeared due to the demolition: this necessitated the fixing of another on paving R906.

During this season Dr Graeme Whittington of the Department of Geography, University of St Andrews began the implementation of a palaeoenvironmental research programme on the *stofa* site and below the site at the Loch of Biggings (**6.2** below). The circumstances of excavating in the middle of a settled crofting community, with very restricted access to an adequate water supply meant that it was not possible to sieve the excavated spoil to retrieve microscopic faunal and flora remains. However, one of the most important features of the excavation was the conditions for survival of macroscopic bioarchaeological material such as wood and textile. More textile fragments were recovered this season and a waterlogged pit in Trench J/L (JL55) produced more wood, including the exceptional find of a ropemaker's 'top' (**7.5.2**).

5.2.6 SIXTH SEASON 1990

The purpose of this final small-scale excavation was to complete the examination of the fire-pit (J105), to strip down the baulk between trenches E and J and to open an exploratory trench (S) north of the Norse house excavation in order to assess whether the byre of the Norse farm may have lain in that vicinity. Nothing of early date was found in Trench S (**5.4** below). Trench E/J confirmed the significance of this central part of the site and a remarkable pit was excavated which produced two finds of important Paffrath ware and birch bark which was used for radiocarbon dating (table 1 below) but the trench was not completed. Beverley Ballin Smith joined the excavation team as Site supervisor and continued to be involved in the post-excavation analysis of the whole site.

5.3 LAYOUT OF THE TRENCHES

Beverley Ballin Smith

In 1977 nine trenches were laid out either side of the main surfaced road across the island, seven (A, B, C, D, E, H and I) to the west of the track and two (F and G) to its east (illus 18).

In July 1978 only trenches E and H were continued, with the addition of new areas J and K which linked them and L (inside the Gørl walls) which extended the opened area. In July and August 1979 work on these four trenches (but not Trench L) continued and Trench M to the south was opened.

Concluding work on trenches J and L was carried out in July and August 1982. A new area P was opened which extended Trench J northwards.

In May 1987 the northern end of the Gørl was demolished, enabling Trench JL to be opened up in July. It lay between J and L. PL extended Trench L northwards, R extended it to the east as Trench RL.

In June 1990 a final two-week season completed the stratigraphy in Trench JL; a baulk, Trench EJ was opened in the unexcavated corner between trenches E and J and a new trench, S, was dug.

In total 467.50m^2 were excavated in approximately 100 days.

Trenches A, B, C, D, F, G, I, M and S revealed limited stratigraphy and although they covered 226.25m^2 in total,

they do not affect the archaeological record of the main area. These trenches are described first (**5.4**) below, and contribute little to the environmental or cultural background of the farmstead.

Trenches E, EJ, H, J, JL, K, L, P, PL and R encompassed a total of 241.25m² covering the core of the settlement. They are treated as a single main area divided into eastern and western sides and their excavation results are described in turn (eastern **5.5** and western **5.6** below). Location of features and small find distribution are attributed to individual trenches within the main area.

5.4 DESCRIPTION OF THE OUTLYING TRENCHES: A, B, C, D, F, G, I, M, S

Beverley Ballin Smith

TRENCH A - 1977

The first trench of the Biggings excavation was situated midway between the Gørl and the possible site of Ophus. The original trench was 10m x 4m, later extended to the south another 4m x 3m. In all, the trench covered 52m² and was aligned E/W. Above the bedrock (A10) was a loose gravel layer (A8, 9) on which was built a wall (A11a) aligned NW/SE constructed of large stones. The wall was *c* 2m long. Associated with it to the south and north was a hard packed layer of charcoal, clay, rubble and some burning (A6, 7). On top was constructed a new wall (A11b) with an adjoining area of paving (A12). The new wall was aligned NE/SW and joined the earlier wall at its east end to form possibly the corner of a structure. Its large facing stones had an infill of smaller stone, but only its foundations were seen. To its immediate east was an area of paving (A12) constructed of large flags set into the clay and gravel of the earlier stratigraphy.

Across the trench, over the remains of the wall and paving, developed a layer of sandy soil and charcoal (A4, 5) which continued to develop (A2, 3) with the addition of stone. Within this layer overlying the earliest wall, aligned NE/SW was a rough wall of single stones, *c* 3.5m long, thought on excavation to be the remains of a boundary wall. The trench was finally covered with soil and turf.

Finds from the trench included modern tile and glazed ceramics, an unglazed sherd, pieces of clay pipe, glass, fragments of animal bone, metal (probably iron) and fragments of wood and charcoal, which were not retained.

TRENCH B - 1977

This trench was opened over the supposed site of the croft of Ophus. It was aligned N/S and measured 4m x 10m (40m²). The stratigraphy as in Trench A was shallow. On top of the bedrock was a natural or semi-natural subsoil of red sandy soil (B11), which in part was quite dry (B5). On the sand two features were constructed. In the north of the trench was part of a wall (B2b), possibly the end of a building 2.5m wide, and in the south was another fragmentary wall with much stone (B11). Between and around these features were light brown sand (B3, 7, 9), dark soil with charcoal (B4, 6, 8) and a patch of peat with clay and burning (B10). These features were covered with brown sandy soil (B2), followed by topsoil and turf.

Finds included brick, modern ceramic, stone, clay pipe fragments, glass, animal bone, wood, seaweed and iron.

TRENCH C - 1977

Between trenches A and B was situated Trench C, 5m x 4m (20m²). On top of a spread of gravel were the remains of a ?boundary wall (C2) aligned NW/SE. It was largely excavated as a 5.5m x 1.0m layer of mixed stones. This lay immediately below the topsoil and turf.

Finds were few and mostly modern glazed ceramic fragments, a piece of clay pipe, glass, animal bone, iron, a metal button and stone.

TRENCH D - 1977

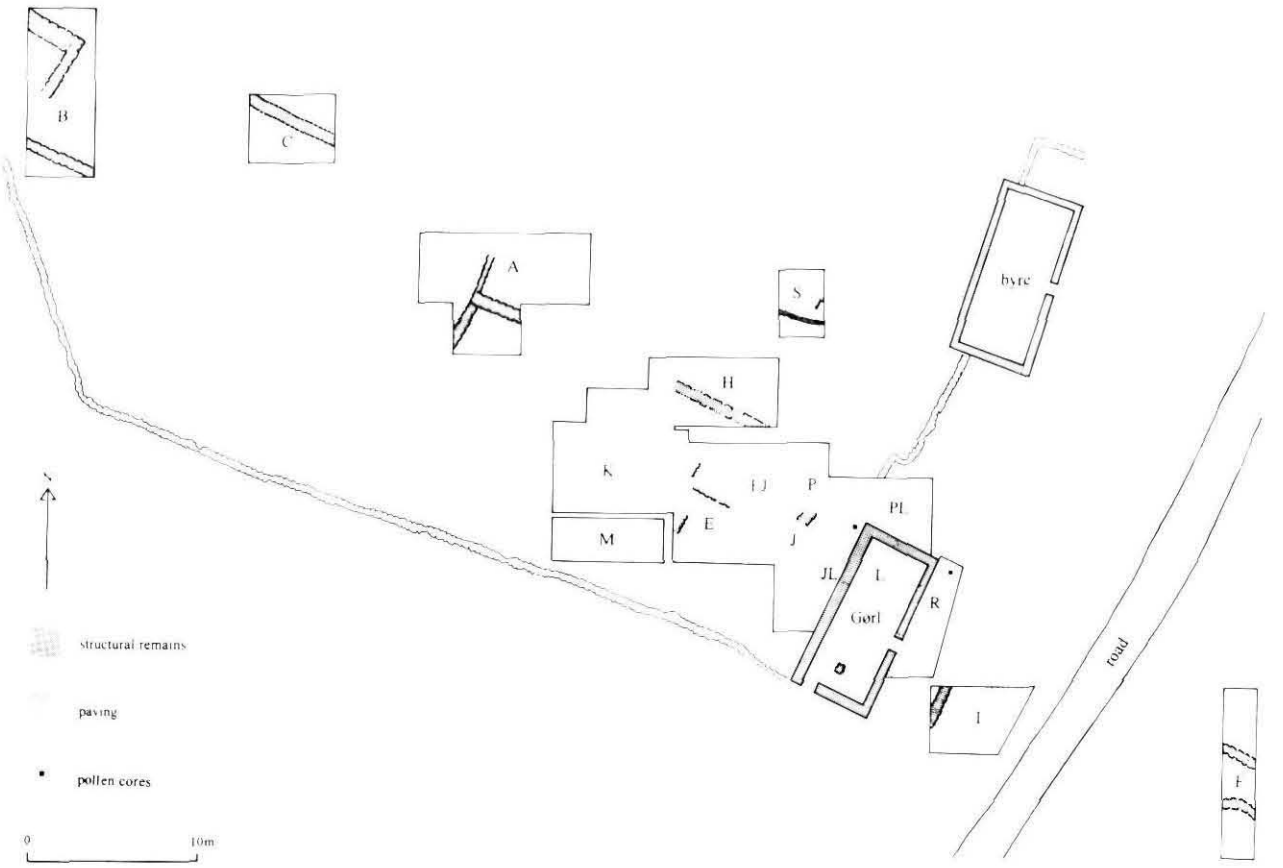
This trench was located immediately to the west of Sweerie Haa in the north of the area investigated. Its measurements were 4m x 3m (12m²). Its stratigraphy above bedrock was limited to a stoney area (D3), with an adjoining area of peat and charcoal (D2). On top were some stones, and these lay below the topsoil and turf.

Finds are not recorded from this trench.

TRENCH F - 1977

This trench lay east of the main road through the Biggings, within sight of the Gørl and close to a remembered house site known as Husiefield. It measured 2m x 10m (20m²) and was aligned N/S. Under the topsoil and turf were two stone walls, possibly part of a sheep pen. Between the walls were stones (F2,4), and to the south was a sandy soil (F3). A clay and charcoal deposit (F6) was found in the north. Below these deposits on top of the bedrock was a red sandy soil (F5).

Finds included modern ceramic, clay pipe fragments and glass.



illus 21
Recorded remains in outlying trenches.

TRENCH G - 1977

This trench lay to the south of Trench F in the yard behind the South Biggings houses, outside the main area of investigation. It was a square area of 6m x 6m (36m^2) and contained no structures. Above the bedrock (G6) was a layer of sand with some charcoal (G5). Red-brown soil (G4) lay on top, which in turn was covered by dark soil with charcoal (G3) and then mixed soil and stones (G2). Above this, just below the topsoil and turf were some tumbled stones.

Finds from the trench included modern china, glass, animal bone, wood and stone.

TRENCH I - 1977

This trench lay to the east of the Gørl, between the latter and the main road. It measured *c* 6m x 4m (20m^2). On top of natural sand in the north of the trench was a layer of sand with charcoal (I10). Above this were patches of brown clay (I6) and sandy soil (I8, 9, 11). In the SW corner was a light clay soil (I5, 7) with an upper deposit of disturbed material including stone (I3, 4). Along the north edge of the trench was a sandy loam (I12). These three areas were partly covered by a discontinuous layer of paving. Other areas were covered by red sand (I5).

In the middle of the trench was orange sand (I13), black soil (I14) and a deposit of pebbles (I2), which possibly also underlay the paving. Along the west edge of the trench was an alignment of large and small stones, 4m long, possibly a wall with a face to the east. Almost at right angles to this in the NE corner of the trench was another wall (I7) *c* 3m long and *c* 2m wide. This was built of rounded beach stones. The features were only shallow and lay immediately under the topsoil and turf.

Finds included modern ceramic, animal bone, metal and pieces of steatite.

illus 22
The drains in Trench M; scales in 0.1m intervals; from W.

TRENCH M - 1979 (illus 22)

Located in the angle formed by the join of trenches E and K, this trench technically completed the area opened up around the medieval farmstead. Trench M was aligned E/W and measured 6.5m x 2.5m (16.25m²). Its stratigraphy was fairly shallow and it contained little that was relevant to the trenches north and east of it. Above the natural or semi-natural red sand (M4) were tips of burnt ash (M8) which were not fully excavated. On top of them was a mixed hard layer of black clay, sand and stones (M5, 6).

Cut into these deposits were two drains; not necessarily contemporary; one to the east (M9) and one to the west (M10). The east drain was aligned E/W, was curved and measured *c* 4.5m in length. It was capped with large stones at its west end, but its east end was more disorganised. Beneath the capping stones the sides of the drain were only partly stone lined, at either end. It measured *c* 0.2m wide and was probably about the same in depth. An eastwards continuation of the drain was not found in the adjoining Trench E.

A little over a metre west of the east drain was the second drain (M10). This was originally revealed as a curve of large flat stones, later seen to be the disturbed capping to a drain. The drain curved from the NE towards the west, and was lined with stone in its base and along its sides. It measured 3.0m in length and 0.2-0.3m wide. A continuation of this feature into Trench K to the north was not found. Stratigraphically above the drains and filling them was a peaty layer (M7). This was capped by hard clay (M3), described as a surface which included some flat stones, possibly paving. Above the latter, but immediately below the turf and topsoil was a mixed layer of clay and gravel (M2). No other features were found in the trench.

Finds were plentiful. From the fill of the drains came brick, mortar, 17th-century continental redwares, clay pipe, animal bone, shell, wood and bark, an iron knife blade, some steatite and other stone artefacts. The same type of pottery was also found in the context (M5, 6) the drains were cut into. The topsoil contained similar finds to the drain fills.

TRENCH S - 1990

NE of Trench H, a final area was opened in the last season of excavation. The trench measured 2m x 5m (10m²). Above the bedrock (S5) revealed in the southern part of the trench was sand (S4). Cut into the bedrock were the remaining fragments of two drains, one close to the southern edge of the trench (S9) and one at the east side (S8,11). The former was aligned NW/SE and measured 1.6m long, *c* 0.3m wide and was *c* 0.2m deep. The drain had originally been lined with stones along its sides, but this was now discontinuous. Stones (S2) found under the topsoil may have also contained a capping to the drain.

The second drain or soakaway (S8,11) lay in the centre of the trench close to the east. It was approximately 1m long, orientated NNE/SSW, with sides lined with stone, one being an architectural piece (see the report on the voussoir **7.4.4** below). The feature was 0.3m wide and only *c* 0.1m deep, with small pebbles forming a basal layer within it. It may never have had a capping, and therefore may have functioned as a soakaway rather than a drain. Any continuation of the feature towards the NE was not explored. Covering the drain/soakaway was a later layer of hard packed rubble and small stones (S6) found in the centre of the trench.

In the north of the trench was a small area of rough paving (S7) which was covered by more stones in a sand matrix (S3,10). Stratigraphically above all the contexts described was a rough boundary wall (S1a), two stones wide, which lay in the centre of the trench aligned NE/SW. The wall was *c* 2.2m long and *c* 0.4m wide. It lay immediately below the topsoil and turf.

Finds were sparse but included a fragment of 17th-century North German pottery, modern ceramic, a piece of clay pipe, a coin, one fragment of steatite, a stone fishing weight and a voussoir.

5.5 STRATIGRAPHY OF THE MAIN SITE: THE EAST END (TRENCHES J, JL, L, PL, P & R)

Beverley Ballin Smith

5.5.1 PHASE 1 - EARLIEST ACTIVITY: PITS AND STONE ALIGNMENT

(illus 23)

Features representing the earliest activities on the east side of the site are seven scoops or pits. These were both shallow and deep features dug into the sandy subsoil and rhyolite bedrock (J36, JL96, 97; PL185, 191, 193, 197). They all lay under the Phase 2 building. It is not known whether these features were dug from the immediate pre-floor levels of the Phase 2 building, before the sand overlying the bedrock was disturbed and partly removed, or whether they are of a much earlier date.

DESCRIPTION OF FEATURES

PIT J110

The most southerly feature was a pit (J110) with a vertical stone slab partly projecting into the Phase 2 floor. The slab formed one side of a sub-circular feature, 0.4m deep. The pit measured *c* 0.55m x 0.45m and had a centre fill of black greasy material with an outer ring of orange-yellow ash. Stones were noted at the base of the pit, and a piece of textile (SF 1624) and two pieces of very fine dark pottery (now lost) were found in its fill.

PITS PL184, J106, J117, J116

North of J110 were four further pits which formed an uneven arc. The easternmost was an irregular vertical-sided pit (PL 184), 0.6-1.05m x 0.4-0.7m x 0.3m as seen, although it was not fully excavated. To the NW lay a smaller pit (J106). This was a rounded feature, 0.6m x 0.34m x 0.25m and was filled with black 'material' containing heather, seaweed and pine charcoal. West of J106 lay another pit (J117); initially seen as a circular feature with a black sticky fill, it had a layer of charcoal as its base. To the immediate west lay an irregularly rounded pit (J116) (illus 23a), 0.45m x 0.45m x 0.5m, with a fill consisting of charcoal and one large stone.

PITS J120 AND J119

On the north side, lay the final two features in this area. One, a pit (J120), was the largest of this group and measured *c* 1.2m x 1.0m x 0.34m as revealed. Large stones lay around its southern edge, tipped into its centre. Its north side was not recorded but it lay below the Phase 2 wall hearth (J108), and separated from it by dirty sand and silt. One metre to the west was pit (J119), which was only partly excavated. It was straight-sided and filled with heather and peat charcoal and black and grey cinders mottled with natural brown sand. Its length was 0.8m and breadth 0.6m.

J PIT No 1

Two metres to the SW of the latter was J Pit No 1 (illus 20). This was an irregular pit dug almost to bedrock, which measured *c* 1.2m x 0.7m x 0.2-0.4m. It was seen to have a charcoal edge with a parallel one of yellow clay lying *c* 0.3m to the interior. The centre fill was of black organic material (J85, 89), which contained some wood and seaweed (**6.3** below).

STONE ALIGNMENT

At the east end of the site was a NE/SW alignment of paired rhyolite stones (L42, PL205) (illus 23b). The stones were large and four pairs were found set on edge and dug into the sandy subsoil; a fifth pair may have been disturbed during later phases and were seen as two separate stones at the end of the alignment. In total, the stone alignment measured 3.0m in length and *c* 0.25m in width. Individual stones measured *c* 0.3m in length. The stones may have formed the sockets for a boundary wall composed of upright stones, of which only the foundations survived.

PHASE 1: DATING AND FINDS

This phase is difficult to date with any accuracy because of the paucity of stratigraphy and the lack of dateable finds. However, a radiocarbon date (GU-1629) (table 1) was obtained from peat charcoal in a pit (J119) at the east end of the site which produced a date of cal AD 597-820. However, the charcoal obtained from this sample dates the peat and not the actual useage of the pit.

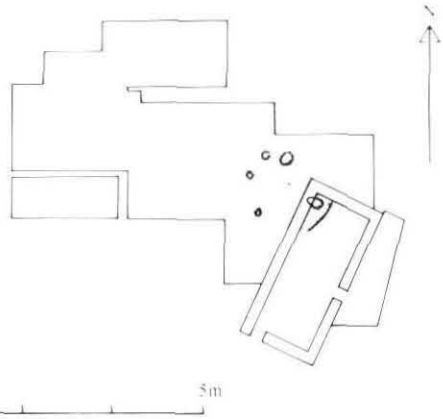
Artefacts from this end of the site also came from pits. Fragments of textile (SF 1624) came from pit J110, and the filling (PL161) of another, produced a strand of spun wool SF 1629. However, neither of these samples can themselves be independently dated, they are simply 'early', and therefore do not aid in establishing a start or end date for this phase. Pit J110 predates the earliest building (the 12th-century Phase 2 *dyngja* **5.5.2** below), and pit PL161 is also likely to be earlier. Although these pits are stratigraphically in the lowest phase of the site it is conceivable that they are not all of the same date. As they all predate the *dyngja* (**5.5.2** below) they must therefore be earlier than *c* AD 1100.

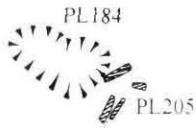
The activities of Phase 1, from the radiocarbon date, suggest a pre-Viking occupation, but there is no further evidence to confirm this. It is suggested that the dating of this phase should lie prior to AD 1100 (prior to the beginning of Phase 2).

5.5.2 PHASE 2 - THE FIRST WOODEN BUILDING, THE *DYNGJA*

(illus 24)

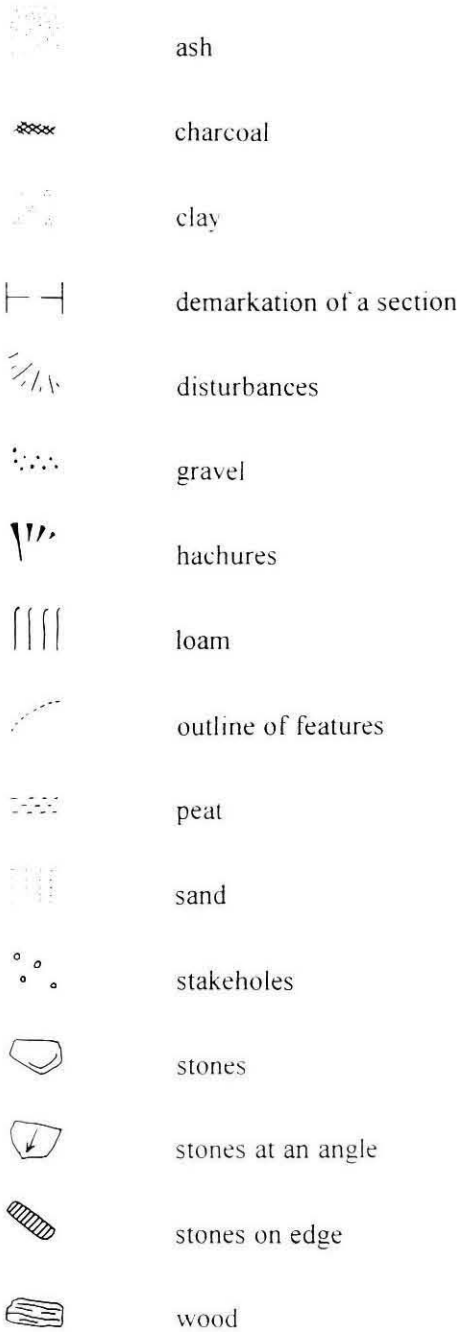
The Phase 2 building was largely destroyed by the succeeding phase and later activities which dug down to bedrock. Irrespective of this, sufficient evidence survived to suggest a substantial, sunken, well planned and presumed largely wooden building. The lack of structural postholes suggest that this building was constructed of horizontal timbers. The building was ultimately characterised as a *dyngja*, a bath-house or weaving room (see below **8.2.1**).





illus 23
Plan of Phase 1 in the east of the site: first features found on the site: pits, J106, J110, J116, J117, J119, J120 and PL184: and stone alignment, L42 and PL205. Insets top: pit J116 (with stone), with the bottom of J7, the privy, at the top of the picture; from NE; bottom: stone settings L42 and PL205; scales in 0.1m intervals; from NE.

SYMBOLS used on plans



DESCRIPTION OF FEATURES

EVIDENCE OF GROUND SURFACE PREPARATION

Initially the site was prepared by the lowering of the central part. This was achieved by pushing the sandy subsoil to the sides, to the NW and SE. Bedrock was not exposed in the central area indicating that approximately 0.3-0.4m of subsoil (J92) remained as a levelled surface to take the floor of the building. By pushing back the subsoil to the sides a bank (P2, J97, JL31-33, 94, L19) (later used as a bench in Phase 3), 0.3-0.4m high, was created running along the sides of where the proposed building was to be sited. It is assumed that these banks were raised above the surrounding ground level, but the lowering of surfaces to the north in later periods and the general rise in ground level to the south (by Phase 3 rebuilding) masked the profile of the prepared ground prior to building construction. The ends of the building showed only the lowered surface and no equivalent bank.

BUILDING CONSTRUCTION

The building was orientated NW/SE and had internal measurements of *c* 5.4m x 4.4m (the latter measurement is between the banks). It covered an area of 23.76m^2 (255.8ft^2) internally.

The lack of any stone foundations suggests that the building was entirely wooden. The formation of the banks, enabled them to take the wall timbers which were raised above the floor of the building. The lowest timber was horizontally laid as postholes were not found on or within the bank (see **8.2** and **8.3** below for further discussion of the construction of this and the Phase 3 buildings).

From the later evidence of the Phase 3 building, whose doorway was placed in the NW gable-end wall, it is suggested that the entrance may have been similarly located in this Phase 2 building. It would have been about 0.8m in width. Evidence of three, possibly four, postholes or small pits (0.12-0.24m diameter) (A, B, and J114) was found, at either side beyond the ends of the banks. There was in addition ten stakeholes, four to the immediate NE of the doorway and six to the SW (illus 24 inset). The posthole/pit (J114), 0.14m x 0.12m, towards the north end of the gable-end wall was not fully excavated but provided carbonised material for a C14 date (930± 65)(GU 1602). The stakeholes were small (20-40mm in diameter) and contained only earth-floor material. It is possible that they provide evidence for the use of an upright loom (see **8.2.1**), close to the gable wall.

The SE gable-end wall may have lain directly over the alignment of stones (L42, PL205) described in Phase 1, but there was no structural evidence for it in this phase. Only the sides and the floor deposits suggest where the SE gable-end wall was situated.

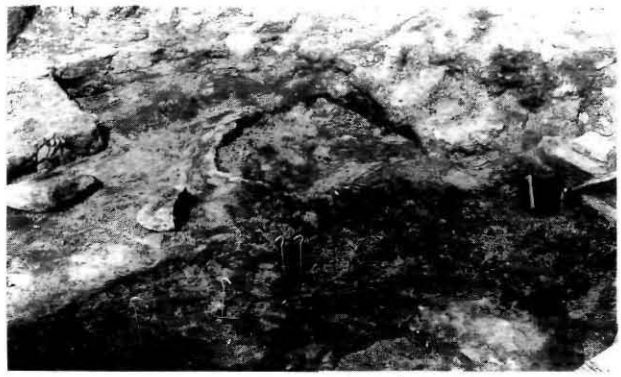
Later disturbances at, and beyond, the NW gable-end have largely destroyed evidence of further features here. Only the partial extension of the building's earthen floor beyond the line of stakeholes suggest that the Phase 2 house may originally have been longer or the gable wall replaced.

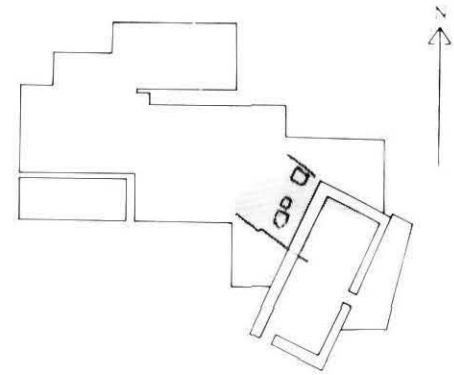
INTERNAL FEATURES

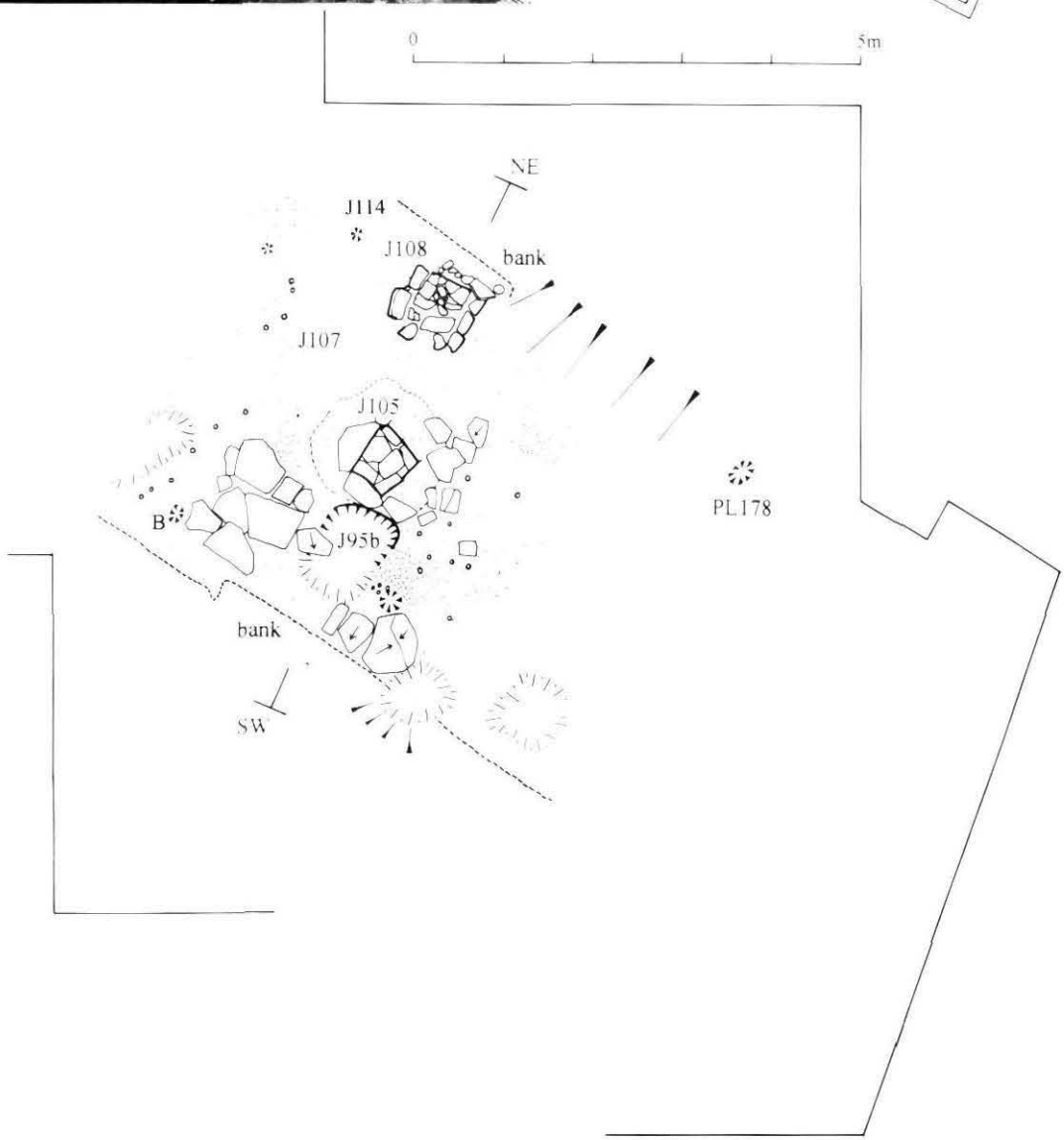
Lying almost centrally in the building was the fire-pit (J105) (illus 25 and col illus 11). This was an almost square 0.5-0.6m stone-lined box approximately 0.5m deep. It was constructed from the bedrock to the floor-level with both horizontal and vertical slabs. Initially a large sub-circular construction trench (JL85) *c* 1.4m in diameter was excavated through the remaining subsoil and into the bedrock. After the fire-pit had been built the construction trench was filled in with rubble and grey sand. Paving (J111), forming the floor and the edging to the top of the fire-pit, survived especially well to the NE and east. The paving was probably replaced during the life of the fire-pit as the stones of both were extremely cracked and reddened with heat.

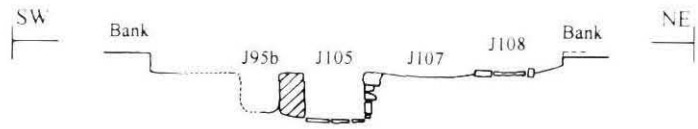
To the south of the fire-pit, and separated from it by a vertical slab, was another pit (J95b), again dug to bedrock. Although redug and reused in Phase 3, it was original to the Phase 2 building. On excavation it was found to be rectangular 1.1m x 0.8m and 0.4-0.5m deep. This feature had little structure to it, being simply dug through the subsoil. It probably functioned as a soakaway, as it did in Phase 3, and was partly covered by large paving stones (J107) and filled with organic material.

The floor of the building was of earth and large irregular paving (J107,111). The latter survived best in front of the SW gable wall. On the north side of the building, 0.2-0.4m in front of the bank (P2a), lying on subsoil and covering a Phase 1 pit (J120), was a rectangular wall hearth (J108) (illus 26). It jutted into the room from the wall-bank but was separated from it by a packing of small stones. The hearth was composed of basal slabs surrounded by a kerbing of two long stones at

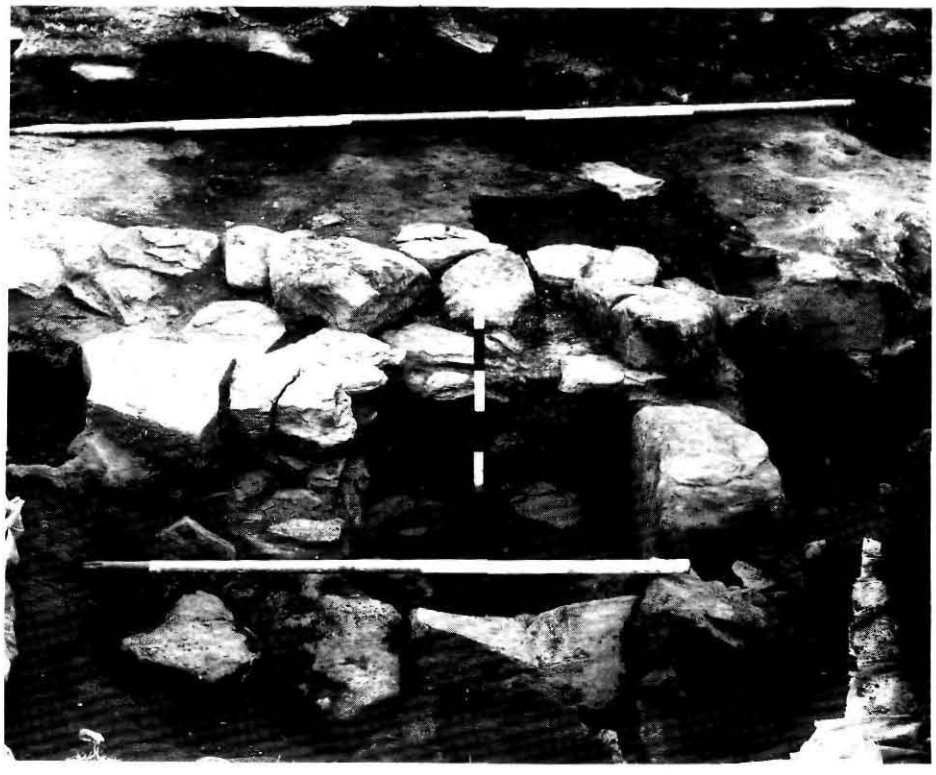








illus 24
Plan and profile of Phase 2 in the east of the site: floor of the sunken structure, the *dyngja*, with fire-pit J105, hearth J108, sump J95b, posthole PL178, and floor J107 with stakeholes. Inset shows the stakeholes (marked with metal pegs) at the west end of the Phase 2 structure; from S.



illus 25
The fire-pit J105 showing its construction; sump J95 to the right, and ashes of the floor with stakeholes at the top of the picture; scales in 0.1m and 0.5m intervals; from NW.

illus 26
Detail of wall-hearth J108; scales in 0.1m intervals; from SW.

each side. It measured 1.1m x 0.8m. Its curved front was also kerbed, as a single surviving stone indicated.

The lack of small stakeholes for wooden supports, in front of the side walls during this phase suggests that benches did not exist.

USE OF THE BUILDING

The fire-pit was filled with yellow ash and had a capping of bright red ash and charcoal (J109, 112; JL45, 79, 80). The intense burning of its slabs and surrounding paving suggests that its use was extensive (illus 25 and col illus 11). To the east of the fire-pit lay a series of ash and charcoal layers lying within a badly burnt setting of stone and clay–a hearth (J118; JL67, 105, 109). The stone of this hearth was completely burnt through as were two or three lower hearth bases. The lowest hearth of the series was not cleared of its contents before the slab of the next was placed on top and set in clay. The middle hearth was slightly smaller than the upper and lower ones which measured 0.6m x 0.8m. The hearth complex was no more than 0.5-0.14m high and was interpreted as being contemporary with the use of the fire-pit.

Ash and charcoal (JL90, 91, 93) spreads *c* 60mm deep, derived from this hearth and presumably the fire-pit, were found to the south and north, interleaving and lying on top of the subsoil. Surviving in the ashes were 14 stakeholes (JL102-107, 110-117), lying mainly to the south of the hearth and fire-pit complex. They ranged from 20-40mm diameter and from 25-120mm deep. The remains of charcoal within the stakeholes suggest that in some the stake had burnt *in situ* (JL102-105, 112, 113), and in others that the stake had been pulled out and the hole filled with ash (JL114-117), clay (JL106) or sand (JL107, 110, 110).

It would seem certain that some stakeholes (JL102-107, 112, 113) were connected to the hearth, and one (JL102) also to the fire-pit, but the southern-most group (JL110,111, 114-117), lay closer to a larger feature–a circular pit (JL108). This latter feature was 0.2-0.24m in diameter and *c* 70mm deep. This lay adjacent to the paving (J107) along the south wall and contained mostly charcoal with a thin intervening sand and clay layer. It was cut into the ashes over the floor.

illus 27
The floor of the eastern Phase 2 building with paving, the unexcavated fire-pit and wall-hearth. The diagonal wall (J22) in the centre of the picture is of Phase 3 date. Other features are from Phase 4 and Phase 5; scales in 0.1m intervals; from S.

The north hearth (J108) contained hard-packed red ash (J101) and some textile fragments SF 1623 & 1633, but although there was evidence of burning around it, there was not the spread of ash seen in the central complex.

The floor (J107,111) (illus 27) of the building was probably no more than 0.8m deep, but was mixed in composition, from a black silt north of the fire-pit, to a predominant silty-clay and ash resting directly on the subsoil. The floor accumulated through use, and in parts was hard packed. The floor deposits were largely confined to the north and west of the fire-pit, and as two lobes which extended beyond the NW gable-end wall. Disturbances due to the digging of later pits and the shallowness of the stratigraphy do not aid interpretation of the end of the floor in this area. No features survived to suggest the building continued westwards.

The east end of the building was badly disturbed and did not reveal a continuation of the occupation deposits from the central area. The complete lack of any destruction layers at the end of this phase indicate that this building was replaced and not left in an abandoned state.

PHASE 2: DATING AND SMALL FINDS

Artefacts found in the *dyngja* are largely undatable, but a steatite vessel handle (SF 51)1, is thought to be of 10th-/11th-century date. There are only two other pieces of steatite from this building both of which do not aid its dating. Fragments of fleece and textiles suggest that some textile processing and working took place here, and these are not incompatible with a date from the 12th century (see **7.6** below).

There are three radiocarbon dates (table 1):
The first (GU-1603) is from wood charcoal (the species was not identified) found on the earthen floor (J107) of the *dyngja*, which produced a date of cal AD 1017-1256.

A second date (GU-1602) is from the fill of a pit/posthole (J114) possibly associated with the construction of the building. It contained carbonised heather and peat is dated to cal AD 1008-1247.

These dates are in close agreement, but do not give a specific date for the construction of the building. A third radiocarbon date (GU-1604) is again from wood of unidentified species. It came from the internal earthen bank (J97) on the south side of the *dyngja*, and is dated to cal AD 665-894. This date is anomalous and may represent a piece of old timber used in the building.

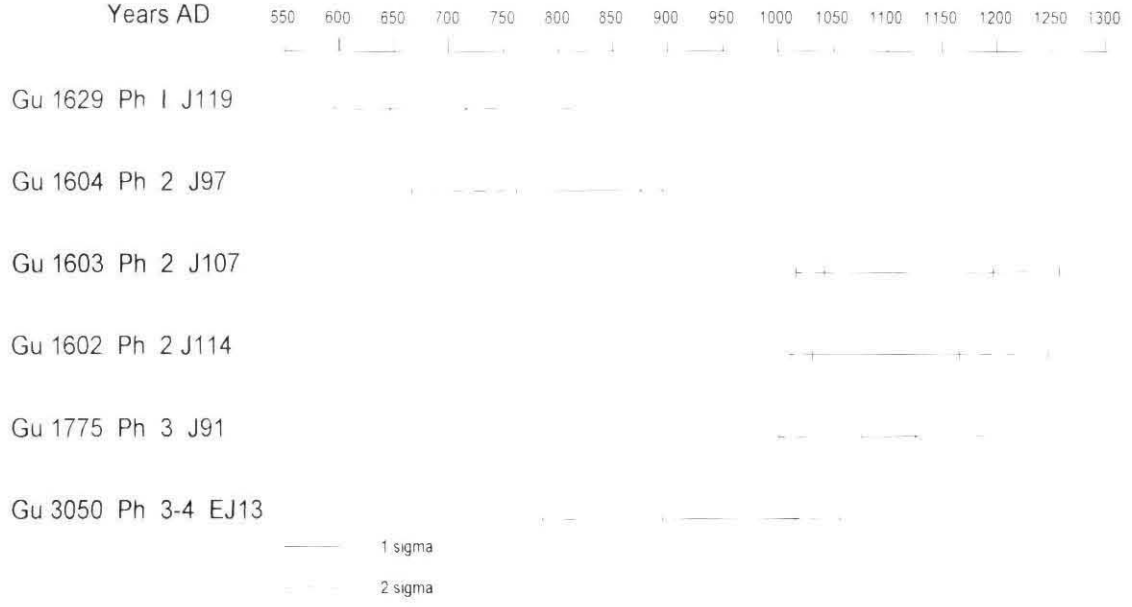


Table 1
Radiocarbon dates from the Biggings.

5.5.3 PHASE 2-3 - PIT CONSTRUCTION AND USE

Three pits (illus 21) can be ascribed to the intervening period, between the abandonment of the Phase 2 building and the construction of that of Phase 3.

DESCRIPTION OF FEATURES

The largest pit (PL192) lay at the SE corner of the excavated area and was unassociated with any structures. Although only half excavated (by sectioning) it was seen to be a large curved or sub-rectangular feature, *c* 2.6m in width. It was cut into the natural subsoil and had three different fillings. The lowest (PL196) was of yellow sand, the middle (PL95) was of burnt material and yellow sand, and the upper fill (PL194) was yellow/brown silt. It was 0.25-0.31m deep.

Approximately 0.5m east of the NE corner of the Phase 2 building was a small oval pit (PL178) filled with dark loam (PL179). It was aligned NE/SW and measured 0.34m x 0.12-0.25m. Its depth is unrecorded.

A pit (JL98), was found to disturb the interior of the building. Its overall shape and dimensions are in doubt as it was disturbed in the latter half of Phase 3 by the digging of a larger pit (JL55) on top. As far as can be ascertained, this feature was less than 0.5m in diameter and contained a lower fill of dark-brown silty sand (JL83). The middle fill (JL82) was of orange ash and sand, and the upper fill (JL81) was of silt and charcoally floor deposits.

Beyond the building to the west, a sandy soil (J54/68) was noted which probably began to accumulate during Phases 1 and 2. Its further development was terminated by Phase 3 activities.

5.5.4 PHASE 3 - THE NEW WOODEN BUILDING, THE *STOFA*

(illus 28)

Phase 3 is defined by a rebuilding of the Phase 2 wooden building. The form of the earlier building was retained but with the addition of side benches and an external protective stone wall on the SW side. The new building was 4.8m in width (between its walls) and *c* 6.4m in length. At 30.72m^2 (330.67sq ft) the building was a little larger than the Phase 2 structure. The building was ultimately defined as a *stofa* (**4.5.1** above).

DESCRIPTION OF FEATURES

REBUILDING: WALLING AND BENCHES

The new wooden building was constructed in almost the same place as the Phase 2 dwelling-house. The wooden walls of the new structure were moved outwards slightly so that the Phase 2 SW bank could function as a bench. Again the lack of postholes suggest that horizontal timbers were laid directly on the ground surface.

One reason for the replacement of the Phase 2 *dyngja* with a new building was instability of the NE side wall and bank. A northwards dip in the bedrock beneath this wall may have caused slippage both internally and externally, and necessitated the formation of a new bench (P2a) along this side.

Evidence for this is seen by the fact that the NE side wall and bench were brought inwards *c* 0.5m, thus reducing the floor width from 4.4m to 3.8m (internally between the benches). The bench front was partly constructed in coarse masonry (J122/JL34/PL125) which provided extra support not only to the bench but presumably to the stability of the NE side wall. However, there is no evidence of the wall construction along this side, due to later disturbances. In contrast, the SW side wall was pushed outwards to provide a bench some 0.5m wide.

The NW gable-end was also constructed on the same alignment but with the addition of a substantial sill foundation (J22) composed of one to two courses of laid stones. A central doorway was maintained in this wall, marked by a large sill stone 0.4m x 0.5m placed internally. The entire SE gable-end was missing, due to later building activity, but it is suggested that it was moved outwards to the SE *c* 1m, because of the extent of the timber flooring surviving from this phase.

The SW wooden wall probably extended *c* 1.3m beyond the NW gable-end, on a line of six horizontal flat sill stones (J21), to form one side of a square privy (illus 28 inset). Another side was formed by the gable-end wall, while the remaining walls rested on single sill stones (J10b). The doorway was in the NE wall close to the assumed entrance to the *stofa*. The walls of the privy were of stave-built timber construction and enclosed a large pit (J7).

One of the most prominent features of the Phase 3 building was a stone wall (J13) (illus 28), which ran parallel and external to the SW side wall. It survived 8.0m in length and *c* 1.10-1.4m in width. It continued beyond the NW gable-end wall to protect also the privy. The foundations of the wall were composed of rhyolite boulders up to 0.50m^2, laid on the ground surface level with the top of the building's internal bench and with the stone base (J21) of the privy. Its internal packing was of small stones and loose earth and its upper courses of flatter sandstone blocks.

Although disturbed at either end and partly in the middle by later activities, this substantial wall is interpreted as having extended beyond the gable-ends of the building as a protective outer wall for the inner wooden wall of the SW side of the house (see section **8.3.1**).

INTERNAL FEATURES

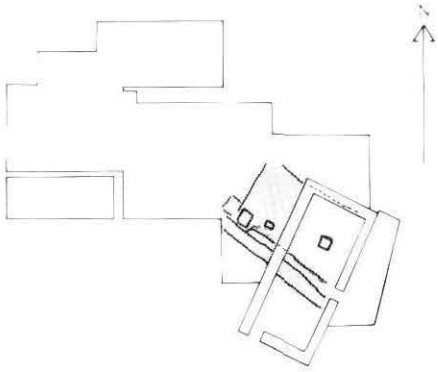
CLAY SURFACE

Initially the interior of the building was prepared by the deposition of a predominantly silty-clay surface (J45, 96, 99, 100, 102-104) which levelled the remains of the previous structure. The surface was very compact and survived 30-100mm in thickness, and abutted the benches as well as the foundation stones of the NW gable-end wall. It provided a foundation for all the internal features, and may have been used also as floor surface close to the door. Its occurrence is less certain at the east end of the building due to later disturbances, but a sandy loam (JL38, 39, 40, 44, 47, L7; PL175, 177) may be a continuation of it, as may be patches of sandy ash and charcoal (JL7, 74).

STONE SETTING

Lying close to the doorway against the SW gable-end wall and on top of the silty-clay levelling (J96,etc) was an irregular stone setting, originally possibly square. It was built of slabs stabilized by smaller stones set on edge, with two low upright stones forming its SW corner. The whole feature was raised *c* 100mm above the level of the building's wooden floor (see below). It was disturbed at its north end, as was the gable-end wall foundations (J22) by a later pit, and its relationship to the NE bench is unknown.

illus 28a
Close-up of the corner hearth J27 dug into the Phase 2 bank with the protective stone wall J13 at the top of the picture; scales in 0.1m intervals; from NE.



illus 28
Plan and profile of Phase 3 in the east of the site: wooden floor of the *stofa* J90, shown with gable wall J22 and stone feature J122, privy J7 and protective wall J13. North and south benches are shown together with central hearth, L30, corner hearth J27, and sump J95. In addition, Phase 4 pits, J Pit 1 and J Pit 4, are marked. Inset: the corner hearth, with the partly exposed wooden floor, the gable wall with the threshold stone, the privy J7 to the left, and the protective stone wall J13 in the foreground; scale in 0.1m intervals; from S.

illus 29
Wooden floor of the *stofa* partly revealed, with the corner hearth J27 half excavated; no scales; from S.

CORNER HEARTH

In the SW corner of the building, south of the doorway, a rectangular corner hearth (J27) (illus 28 inset) was built on to the clay levelling (J96). The hearth lay 0.1-0.2m east of the gable-end foundation stones and a similar distance from the SW bench. The placing of the hearth entailed the cutting away of the Phase 2 bank at this point, and suggests the hearth was built immediately before the construction of the wooden floor and bench fronts. In the space between the hearth and walls, small stones were set on edge in clay, forming a screen to protect the wooden walls of the building. In total the hearth measured *c* 1.1m x 0.8m and was built of sub-rectangular stone blocks forming its kerbed sides, with larger flatter slabs as its base and was open to the NE.

SOAKAWAY

The soakaway (J95a), which lay in the western half of the building and within 1m of the corner hearth (J27) was maintained as an internal feature. It is assumed that it was recut or partly cleared out at the beginning of Phase 3. It was partly lined just below the floor level with timber (and stone), and capped on the floor by two or three removable stones. The soakaway was square and measured 0.36m x 0.36m.

WOODEN FLOOR

The dominant feature of the building in Phase 3 was its wooden floor (J24, 26, 28, 41, 44, 50-53, 62, 67, 69, 80, 91, 121; JL36, 37, 57, 58, 61, 68, 76, 101; L22; PL168-173, 182, 183, 201, 202, 206-208, 210, 211). Evidence of it survived to indicate that, apart from the corner hearth (J27) and the stone platform (J121), the whole floor surface was initially covered in wood, and lay 0.15-0.25m below the top of the benches and the bottom of the wall foundations.

CONSTRUCTION

The floor was supported on joists laid across the width of the building. They were *c* 80-120mm wide and survived to a maximum length of 1.5m. Some of the timber showed signs of reuse, possibly from the Phase 2 structure. The joists rested directly on the silty-clay levelling (J96) at intervals of between 0.4m and 0.8m apart at the west end, and a more regular 0.6m at the east end. A total of nine joists, possibly 10, were found. The easternmost (PL173) was composed of at least three pieces of timber joined together to form a heavier piece of wood. The joists survived best at the west end of the building where the longest pieces were found, and along the NE long wall where they survived 0.4-0.6m in length.

Floor boards comprising the wooden floor lay across the joists at right-angles, aligned NW/SE. The poor preservation of the wood made the measuring of individual boards difficult, but the best preserved were at least 0.14m wide, 10-20mm thick and 1.4m long. As with the joists, the boards survived best in the SW half of the building and at the NE end (illus 29). Apart from the latter, all boards were broken over the joists with the accumulation of later material, and were found resting in the gaps between. It was noted that one or two of the boards contained round or square peg-holes and others a cleat on their undersides. This suggests that the timber, or at least some of it was already old and was reused in this building. Some tool marks were also noticed and from the surviving evidence it is likely that the boards met edge to edge. The greatest surviving concentration of boards lay between the corner hearth (J27) and the centre of the room. Here approximately 12 to 14 planks were recorded on excavation.

BENCHES

The function of benches was important to this structure. Along with the construction of the wooden floor the fronts of the benches were encased in wooden planking. There is however, no evidence of wood surviving *in situ* on top of the benches. Bench timber including pegs (JL61, PL168) was found along the NE side wall, approximately 4m in length, and a 1.4m-length (L22) on the opposite wall. A number of peg holes and surviving pegs (L44, JL61) suggest that the bench planking was held in place by upright pegs and posts hammered *c* 0.2-0.3m into the natural sand, which lay mainly behind the planking and kept it in position (illus 30).

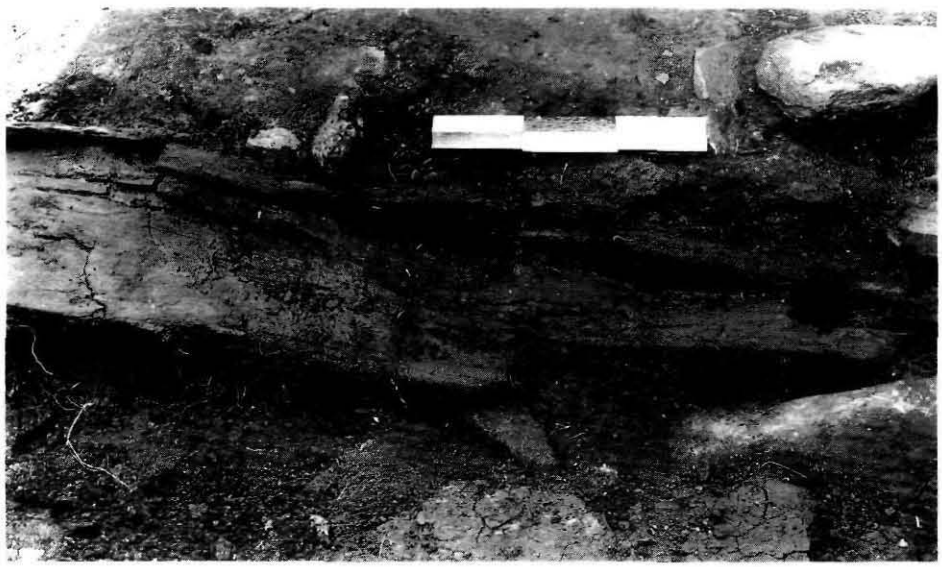
The wooden floor was mostly of pine (*Pinus sylvestris*), but with a little oak (*Quercus* sp.). The pegs found in the planking and the boards were also of Scots pine (sections **6.3** and **7.5** below).

FEATURES OF USE AND RENOVATION

Subsidence occurred over the Phase 2-3 pit (J98) which cut into the Phase 2 building. The wooden floor at this point was either replaced or overlain by five to six large flagstones (JL53). Other isolated patches of paving (PL174) at the east end of the building may have also been laid as a replacement to the wooden floor.

The centre of the building contained an extensive heap of ash (JL48) belonging to a hearth, which was depressed in the centre where it overlay the Phase 2 fire-pit. A central hearth which may have been an original feature within the Phase 3 building was replaced when burnt through. The evidence for stonework within the ash was limited to severely burnt fragments (JL51) indicating a simple, unkerbed hearth base, unlike the elaborate corner hearth (J27). Small fragments of timber survived under the ash to indicate the possibility that it post-dated the wooden floor. A replacement hearth (L30) was finally constructed to the east. It was composed of a single stone slab with a low kerb of flat stones on its SW and NW sides. It was badly cracked and burnt through, but measured *c* 0.7m x 0.7m. Ash from it lay to the SE and on the existing ash mound (JL48).

During this phase of the building, part of the wooden floor was capped with yellow clay (illus 31) which included some straw and stone (J60, 82, 86). The clay was primarily seen as an irregular semi-circular



illus 30
Collapsed wooden bench front (L22); scale in 0.1m intervals; from NE.

feature measuring 2.0m x 1.4m x 0.1m which covered the soakaway (J95a). The latter had been levelled with clay and soil (J75) before capping. The clay patch preserved the SW part of the flooring of the building, but presumably was deposited to replace it, and/or seal the soakaway. Other compact patches of yellow clay and ash (JL35, 49, 75) were found close to the southern bench front in the centre of the building.

It may have been at this time that the privy (J73) was systematically filled in. It is assumed to have continued in use due to the accumulation of yellow, possibly organic, deposits (J7) within it, but was possibly now backfilled with a layer of small pebbles, larger stones, and finally capped by a layer of gravel.

It is uncertain how much of the building was in use at this time, but the corner hearth (J27) could have been retained, although evidence of further domestic occupation was not found. It is assumed that with the filling in of the sump and privy the function of the building changed.

PHASE 3: DATING AND FINDS

In situ artefactual dating evidence from the east end of the *stofa* includes fragments of East Anglian 13th-/14th-century pottery (SF 851) and Bengerode/Solling proto-stoneware (SF 889), AD 1250-1350, located just beneath the wooden floor. From the surface of the floor were fragments of Lower Saxony pottery (SF 896) dated to AD 1250-1400. Fragments of a continental pipkin and cooking pot (SF 895) were also found on the wooden floor of the *stofa*. These sherds are thought to be of late 16th-century date (section **7.3.3**).

A radiocarbon date (GU-1775) (table 1) from a sample of the wooden floor of Scots pine (J91), produced a date of cal AD 999-1214).

illus 31
Later clay patch on the wooden floor, with the Phase 2 bank clearly visible and cut into by the corner hearth J27; scale in 0.1m intervals; from W.

5.5.5 PHASE 4 - LATER USE OF THE PHASE 3 *STOFA*

In this phase, the wooden building underwent a change of use. Activities were noted to have occurred before its destruction, principally the digging of three pits in the house interior and one externally. From the evidence of burnt deposits (see **6.3** below) covering the pits, the building's roof was still intact or partly intact at this time.

DESCRIPTION OF FEATURES

PITS (illus 21)

A small pit (JL100) was dug into the SE bench close to the wall footing and towards the west end of the building. It measured *c* 0.33m in diameter and was *c* 0.13m deep. From its single fill (JL30) of dirty silt and small stones, the pit was presumably filled in soon after its excavation.

To the north lay two larger irregular pits, both of which were partly or fully stone lined. One pit (JL55, 86) cut through the floor, bench and bench front and measured 0.86m x 0.7m x 0.25+m. Its stone lining of beach boulders with steatite and stone weights (loom weights) (JL89, 99) was possibly set in clay which kept the contents wet. Within the pit nine perforated stone weights were found, fish scales and a wooden ropemaker's top (**7.5.2**; illus 104 and col illus 21). In addition was a significant number of pine pegs and artefacts as well as pieces of wood from several different species (**6.3** and **7.5**). The pit was also filled with a mixture of silt, peat, charcoal and sand (JL29, 50, 56, 59, 60, 87, 88, 110).

It is possible that this pit had a specific function as a latrine (see below) but was later used for the disposal of rubbish, and finally covered with layers associated with the destruction of the *stofa* (JL27, 28).

The last pit (L35/38) within the building, and possibly the latest dug, lay to the immediate east of the above. Again it was an irregular pit, found to have a stone lining (L33) possibly set in clay (L34/37). It measured *c* 0.9m x 0.9m x 0.45m. Although it cut through the floor level of the building it contained very little wood. It was filled with a complex layering of charcoal, ash, sand and stones (L29), and was capped with clay (L24).

During the use of these pits, sand and small pebbles (PL135/140/190) accumulated over the wooden floor to a depth of *c* 0.22m at the east end of the building. Its 'natural' appearance may in part be explained by deliberate dumping of disturbed subsoil from elsewhere on the site. Evidence from subsequent events suggests that the roof above the SE gable-end wall may no longer have existed. At the west end of the building a thin covering of silt and peat (J87) developed over the floor remains.

A final pit (J pit 2) in this period was dug 1m west of the privy, and therefore outside the building. It was a roughly circular pit *c* 0.5m in diameter and *c* 0.20-0.25m deep, dug into the subsoil. It contained two compact peat and charcoal fills (J84,93) separated by sand (J92) and capped by small pebbles (J43). West of the building and around the latter pit, a peaty soil (J44) developed.

DESTRUCTION OF THE BUILDING

The last event to occur to the Phase 3 building was its partial destruction by fire. Burnt deposits were found at the NW end and across the centre of the building, although no burning was found at the SE.

The burning (J25, 56, 64, 66, 90; JL17-19, 20-26, 71; L20, 25, 28, 31, 36) was seen as a complex patchwork of interleaving deposits. This included compacted, mottled ash and clay, peat, black humic silt and charcoal. Included in the deposits was a quantity of wood, mostly Scots pine. This represented the remains of its roof: with its birch-bark lining and its turf covering (sections **6.3** and **7.5** below).

It is impossible to be certain whether the occurrence of wooden artefacts represent belongings stored in the roof when it was fired, or whether they lay on the abandoned floor of the building, but the former is possible.

PHASE 4: DATING AND FINDS

Dating evidence for this phase is varied. Perforated stone weights and a wooden ropemaker's top (**7.5.2**; illus 104 and col illus 21), together with a number of pine pegs and artefacts were found within pits of this period. It is during this phase that continental redwares are first noted, some from the west end of the site dated to AD 1450-1550/1600. In the large pit JL55, dug into the disused Phase 3 *stofa*, was a piece of English pottery (SF 812), of 14th-/15th-century date. The burnt roofing deposits of the *stofa* also contained a fragment of Coppengrave/ Duingen ware SF 848, of the same date. Although not at present dated, the ropemaker's top will in future add further information on the period of use of this phase.

There are no radiocarbon dates for this phase but the suggested dating is from *c* 1400 to the early 1600s.

5.5.6 PHASE 4-5 - PIT CONSTRUCTION WITHIN THE *STOFA* AREA

(illus 21)

In between the end of Phase 4 and the construction of the next building in Phase 5 was a period of activity characterised largely by the digging of pits which disturbed the remains of the Phase 3 deposits. However, it is not possible to define a constructional sequence for the pits as they were separate features. They are therefore described from west to east across the site.

DESCRIPTION OF FEATURES

PIT 4 (TRENCH J)

This feature was dug through the north end of the Phase 3 NW gable (J22), thus disturbing the NW corner of that building. It was filled with sand, tipped stones, peat (J88) and patches of charcoal (P4), and possibly capped with a small patch of clay (J30,P5). The pit measured 2.0m x 0.9-1.5m and lay *c* 0.1-0.2m deeper than the base of the gable wall. It was irregular in outline and it cut Phase 2 deposits. Its finds included several hones and objects of steatite.

DISTURBANCE AND BURNING OF PHASE 3 BUILDING

On top of Phase 4 deposits were found patches of compact yellow clay, wood, burnt stones, charcoal and peat lenses (J62, 74, 76, 81; L18, 5, 6). These contexts probably derived from the burning of the Phase 3 building, but were disturbed by trampling and the digging of pits. Finds of Norwegian bakestone fragments suggest possible disturbance of the underlying deposits.

In the centre of the area, further patches of bright yellow silt-clay and ash (JL12, 6) with peat, humic sand, charcoal (JL11,15) and wood (JL10), suggest that the disturbance of the earlier building was widespread, although none of these contexts are recorded as anything other than shallow layers.

PIT L26

A pit (L26) was dug into the east half of the Phase 3 building. Its sides were lined with yellow clay and stones (L41) and its bottom with cloth. A stone set on edge divided the pit into two unequal parts; the north portion was not fully excavated. It is suggested that the pit measured *c* 0.8 x 0.5m and was *c* 1m deep. Finds from this feature include wood, steatite and 14th-/15th-century pottery, which indicate that after use the pit was left open for a time and used for rubbish dumping. An upper fill (L40) consisted of a hard packed loam with ash, sand and stones. Finally, large stones (L39) were dumped on top and a peaty loam developed around them.

LINEAR FEATURE PL162, 163

A linear feature (PL162, 163), aligned N-S, lay *c* 0.1m beyond the end of the Phase 3 building in the NE. It was *c* 1.5m long, *c* 0.2m wide and *c* 40mm deep. It contained a dark brown sandy fill (PL164, 165) with a piece of amber and bone. The north end of this feature was cut by a shallow pit (PL166). The pit was sub-rectangular, measured 0.42m x 0.3m x 0.09m, and cut the bank material of the Phase 2 building at almost its NE corner. Its fill (PL167) was a sandy loam. This feature could possibly be the result of rain dripping from the roof of the Phase 3 building.

LINEAR SCOOP

The final feature of this intermediate phase was described as a shallow depression or linear scoop (PL181, 204). It was cut away to the north and was only sectioned. It lay SE of the Phase 3 building and contained sandy silt and ash fills (PL158, 159, 160, 188, 189, 203). Over these features developed sand with silt (PL150, 176, 180; R917), silt (PL144, 146, 151) and loam (PL142).

5.5.7 PHASE 5 - BUILDING OF A NEW STONE STRUCTURE

(illus 32)

This phase of the site is characterised by a structure which was aligned NW/SE (as were the Phase 2 and 3 buildings), but which was badly disturbed by more recent building activities, (ultimately interpreted as a dwelling-house. See below)

DESCRIPTION OF FEATURES

NEW WALLING AND PAVING

A new wall (J55, JL13,14, L45) was constructed parallel and immediately north of the Phase 3 protective stone wall (J13). This latter wall may have partly survived the destruction of the Phase 3 building and been robbed for its stone. The new wall lay on a thin layer of peat and silt (J83) which covered the previous activities. The wall was *c* 7m long and *c* 1m wide, and in the main was composed of large facing stones, of rhyolite at its east end and sandstone at its west, with a fill of smaller stones. It survived two to three courses high (illus 32 inset). Both ends of the wall were truncated: the NW end was cut away by later activities and the south end may have been refaced by three large stones (R915). The latter may represent the original SE end of the wall and its turn to the NE, but this is uncertain.

A 1.5m-length of masonry (J10b) surviving two courses high and on approximately the same alignment as the wall, may have been a NW continuation of it. However this possibility was not fully explored during the excavation. Other walls belonging to this structure were not found during excavation, primarily due to later levelling to the north and east.

Associated with the wall was an extensive area of paving (J17, 18, 19, 20, 57, 58, 59, 65, 71; JL7; L23) which measured *c* 5m x 4m, lying on, and interleaving with peat. At its east end the paving (L23) was two stones deep, with the wall (J55) (described above) resting on the lower level. It is suggested that extensive levelling preceded the laying of this paving as a number of finds, including textiles of 12th-/13th-century date, were found within the peat.

Contemporary deposits associated with the wall and paving were few. At the west end of the paving was a small deposition of bone, shell, pottery and glass. Within the wall (J55) was a burnt deposit with shell, suggesting that the wall was levelled or its original fill contained rubbish.

HEARTH

At the east end of the paving and constructed on it, was a rectangular hearth (L15) which measured 0.7m x 0.4m (illus 32). The hearth stones were badly cracked but contained yellow-brown ash (L17). Another deposit of the same type of ash was found on the paving between the hearth and the wall (L45) to the south. Deposits at the east end of the paving were subsequently truncated by clearance and levelling prior to the construction of the Phase 6 crofthouse, the Gørl.

FURTHER ACTIVITY

ADDITIONAL WALLING AND PAVING

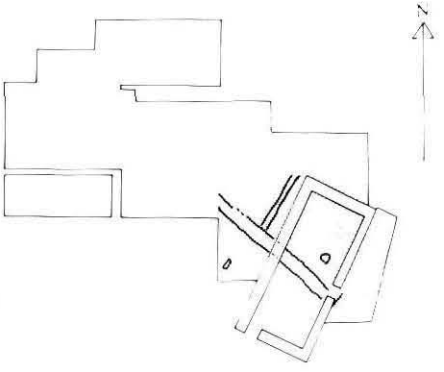
Only at the west end of the wall and paving did evidence survive of further activity. Another layer of paving (flattened sandstone beach stones) (J11) was laid on top of the old, forming a close-set surface (illus 33). At the same time a narrow wall (J14), aligned NE/SW and surviving 4m in length was constructed at the NW end of the paving. The wall was only one stone wide and when excavated was two to three courses high. Its junction with the slightly earlier wall (J55) was broken by the construction of the Phase 6 Gørl. There is, however, some evidence that this new wall (J14) abutted the earlier (J55) but also lay parallel to it for *c* 1.5m, as it turned to the SE.

DRAINS

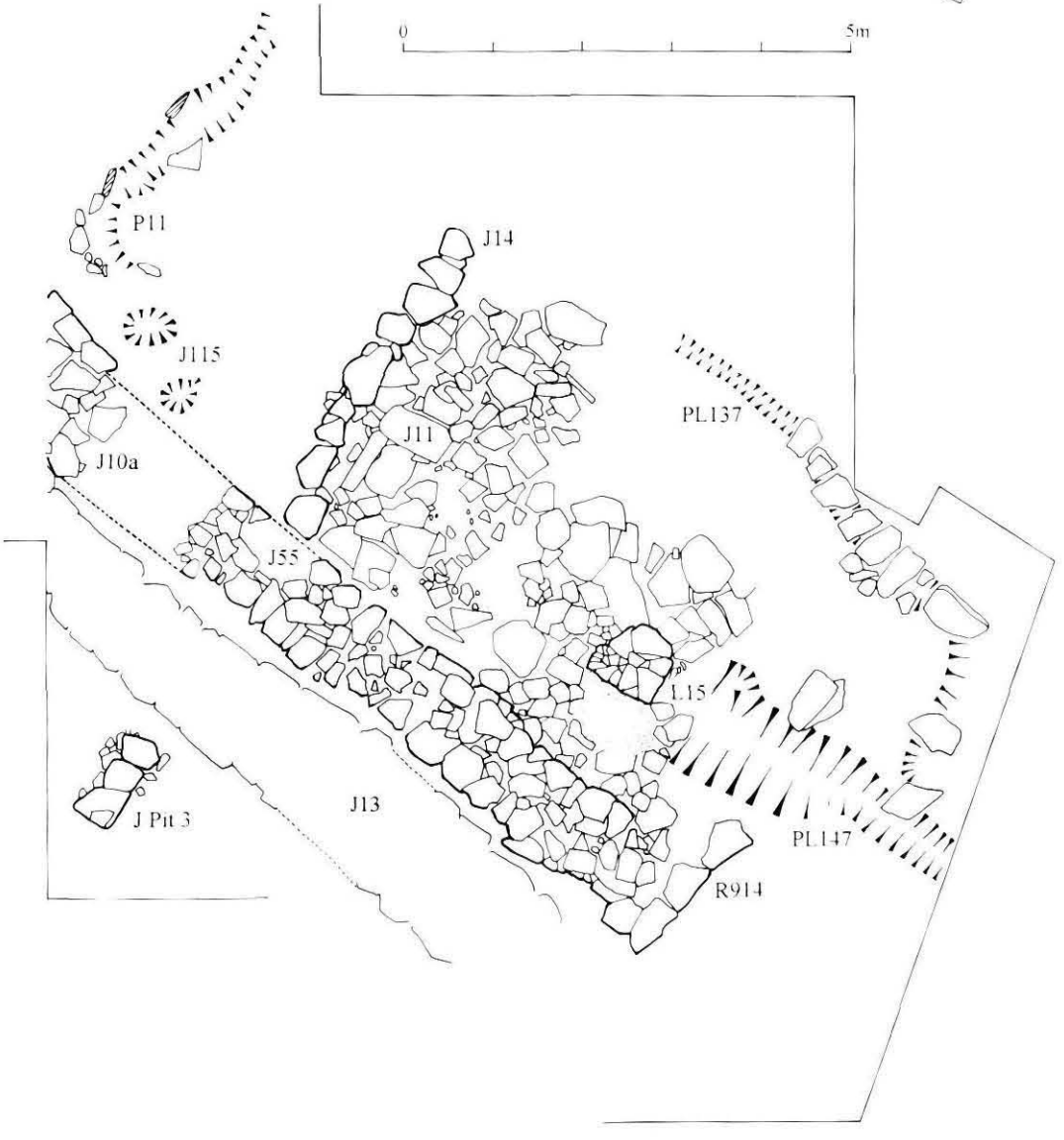
External to the walls and paving were drains to both east and west. In the west a linear feature (P11) aligned NE/SW, survived 3.5m in length, and was partly stone-lined. Its SW end may have terminated in a stone-lined pit or soakaway (J115). The drain was filled with grey clay (P12), and two stonier patches of the same material (J113) (0.6m x 0.44m and 0.42 x 0.42m), were found SE of the drain which suggests that the drain may have been deliberately filled in.

ACTIVITY AT THE EAST END OF THE SITE

Evidence of activities at the east end of the site are highly fragmented, but two areas of paving (PL143 and R916, 918) are considered to belong to this phase (illus 34). Both paved areas were cut by drains. The largest drain (PL147, 154; R910, 912) was aligned E/W, was a little more than 3m long and was 'V'-shaped (*c* 0.4m deep). At its west end it was *c* 1.3m wide and may have terminated close to the paving and hearth (L23 and L15) described above, where a rounded feature, possibly a pit (L32), filled with irregular stones (L27), was found to be contemporary with the paving, and possibly part of the drain. The drain



illus 32a
Part of wall J55 lying in front of the protective wall J13, with the Phase 3 gable wall and a capping of small pebbles to the privy; scale in 0.1m intervals; from N.



illus 32
Plan of Phase 5 in the east of the site: walls of the structure, J14, J10a, J55 and R914 are shown with the hearth L15 and paving J11. Also noted are drains PL137, PL147, P11 and pits J115 and J Pit 3.

illus 33
Paving and walls of Phase 5, lying under the Phase 6 Gørl, with some Phase 3 features visible; scale in 0.1m intervals; from N.

illus 34
Gable and paving of Phase 5, lying under the Phase 6 Gørl; scale in 0.1m intervals; from E.

width narrowed to *c* 0.5m at its east end, but its extent is unknown as it continued beyond the limits of the trench. It was partly lined and capped with large stones (R907). At the west end the fill of the feature consisted of sand (PL152, 153), silt (PL145) and stone and silt (PL155, 156). At its east end the fill was more mixed and included rubble and earth (R908, 909, 911), and peat (R913, 914).

NE of this feature was another drain (PL137, 139, 199, 200) which had vertical sides and a flat bottom. It was aligned NW/SE with a turn to the south. In total it measured *c* 7.5m long and *c* 0.25-0.3m wide. It was filled with dark silty loam (PL136, 186, 198) which varied in colour between grey (PL138) and yellow (PL187). It was capped by large boulders (PL129, 132), up to two deep, which were laid lengthwise over the feature. The capping survived a total of 3m in length in the middle section of the drain. Over this drain developed a layer of rubble (PL141), silt (PL127, 128), mixed peat, charcoal and ash (PL133, 134).

PHASE 5: DATING AND FINDS

There are no radiocarbon dates for this phase but a fragment of early 17th-century White Slip Green Glaze (SF 832) was found on this side of the site. Occurrences of English 14th-/15th-century pottery and steatite suggest the disturbance and reworking of earlier deposits.

The buildings in this phase were in use from the early/mid 1600s to the mid 1800s.

5.5.8 PHASE 6 - 19th-CENTURY FEATURES AND BUILDING OF THE CROFT-HOUSE, THE GØRL

(illus 35)

The final evidence of activity on this part of the site is shown by the levelling and partial clearance of Phase 5 features and the construction of the final dwelling-house on the site, the Gørl.

DESCRIPTION OF FEATURES

ACTIVITY PRIOR TO THE CONSTRUCTION OF THE GØRL

Mixed soil, with ash and peat (P2b, 6, 7, 8; J4, 6, 8, 9, 12, 33; JL 2-6, 8, 9; L 4, 16, 21) developed across most of the area. Only in the SE corner of the site was some substantial paving (PL 131, 157; R905, 906, 915) laid down. Some of this (R906) survived 2.75m in length, 0.75m in width and was aligned NNE/SSW. The paving was not fully excavated as it was left as an intact feature for the future consolidation of the site. The paving was partly covered by a peat loam and clay (PL122, 124; R904) which may possibly have been levelling material deposited prior to the foundations of the final dwelling-house on the site, the Gørl, being laid (PL121, 123; R903).

THE GØRL

The Gørl (R901) measured 9.5m x 5.0m externally with walls *c* 1.0m thick surviving to a height of 2.0m. The walls were of large facing stones with small stone and soil infill. The building was aligned roughly N/S (at right-angles to the alignment of the earlier structures on this part of the site), and had entrances towards its SW corner and in the centre of its east wall, 0.7m and 0.8m wide respectively. The latter entrance (R902) was paved (probably part of R906). The building contained a central hearth (L3) towards its south end, which originally was *c* 1m square and composed of large flat stones laid on a peaty-earth floor (L14). The floor was later paved (L46).

CONTEMPORARY WALLING

Only one other structure can be said to be roughly contemporary with the Gørl. This was part of a roughly built double-faced wall (J5) lying parallel to it, but *c* 2m to the NW. The wall was *c* 0.75m wide and 1.0m long, but it is quite likely that it continued another 3.5m to the SW (to abutt the remains of the Phase 3 protective wall (J13)) to cut through Phase 5 features. It only survived one to two courses high.

PHASE 6: DATING AND FINDS

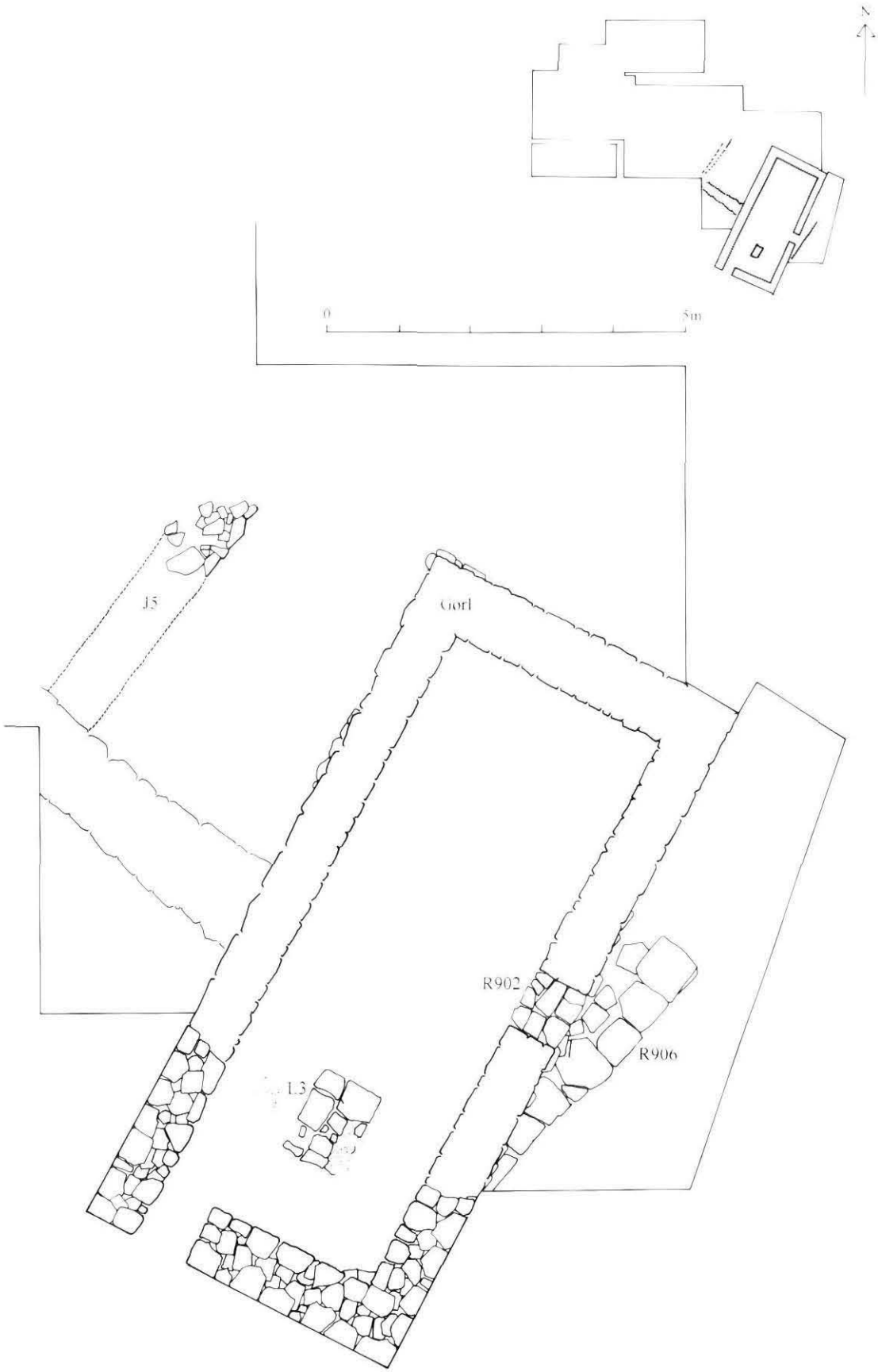
The latest dwelling-house, the Gørl, was built in the 1860s at right angles to, and over the site of, the Phase 3 *stofa*. It was abandoned in the 1930s. The northern half was taken down in 1987. Late 19th-/early 20th-century clay pipes (eg SF 868) and modern ceramics date this building, as well as the documentary evidence.

In addition, finds from earlier periods include the Lower Saxony stonewares (SF 844) of 1250-1450 date, continental redwares and the wooden lid (SF 426) dated from the 16th century onwards (if not earlier). The occurrence of these pieces suggest the continued disturbance of earlier stratigraphy to almost the present day and the destruction of immediately pre-1860 levels.

This phase is dated from the mid 1800s to *c* 1930.

5.5.9 PHASE 7 - MODERN FEATURES

The floor of the Phase 6 Gørl was covered with debris (L2, 12, 13) including mortar and stone from the abandonment and destruction of the building. The Phase 6 wall (J5) was levelled, resulting in stoney debris (J2, 78, 79) lying under the topsoil (J1,3, P1, JL61, L11, R900) which finally covered the area. This phase contains all structures and artefacts which are post-1930 in date.



illus 35
Plan of Phase 6 in the east of the site: the Gørl is shown with its external paving R906, doorway R902, hearth L3 and external wall J5.

5.6 STRATIGRAPHY OF THE WESTERN HALF OF THE MAIN SITE TRENCHES H, K, E AND EJ.

Beverley Ballin Smith

5.6.1 PHASE 2 - REMNANT STRUCTURES: A *SKÁLI* AND POSSIBLE *ELDHUS*

(illus 36)

The combined structural remains from Trenches H and E, together with their distribution of artefacts, can be interpreted as a *skáli* or hall, with the structural remains in Trench K as an accompanying *eldhus* or cookhouse.

DESCRIPTION OF FEATURES

In the northern part of the site (Trench H), cut through the natural sand into the rhyolite bedrock (H10; Hi6; 11) was a linear feature (Hi7, 15) *c* 3.0m long and 0.15-0.2m wide, lying close to the NW edge of the trench and curving at its north end to the east. It is closely associated with a fire-pit (Hi20) which lay 1.5m to the east. The linear feature (Hi7) was filled with soil and stone fragments (Hi14), and was capped with a lid of four irregular flat stones and a fragment of rotary quern. Its NE end was indistinct as a later pit (H16) cut through the feature. Its middle section, where the stone capping survived best, was partly stone lined, but its south end was indistinct. It may have functioned as a drain or flue. The feature was however badly disturbed during Phase 3-4 or 4. This structure was ultimately identified as a *skáli* or hall (**8.2.2** below).

A partial rock-cut fire-pit (Hi20) lay to the east and probably formed part of a contemporary cooking/hearth complex (illus 36 inset). The cooking pit was irregularly round in shape, measured 0.45m x 0.38m internally and was 0.2m-0.3m deep. Its sides were lined with 2-3 courses of stone which were packed with clay, and a flat stone lay in the bottom. The pit was filled with burnt peat and was covered with a mound of yellow ash (Hi19). To the north of the cooking pit, the surrounding peat had been affected by the heat and had become more earthy in texture. The ash deposits of the pit were difficult to separate stratigraphically from the immediately overlying contexts which included an oven in a mound of ash (see Phase 3), although a sporadic intervening sand layer (Hi18) was noticed.

Contexts at the east side of this area were not fully excavated down to the natural subsoil (E80; EJ6, 8, 24, 27). The earliest recorded features at the eastern edge of the area were a hearth (EJ22) with lower burnt deposits (EJ23), and ash and peat (EJ22) on and around the hearth. The latter were seen as a slight ridge to one side of the hearth which measured *c* 1.0m x 1.25m. A layer of paving (EJ20) partly overlay the hearth deposits in the east and measured 1.5m x 1.25m. None of these features were fully revealed as they extended beyond the NE corner of the trench.

In the SW (Trench K) the lowest stratigraphy noticed was red sand (K36), with small stones, which overlay the bedrock. To the west and south a dark soil (K106) developed on top.

On the sand, although not completely excavated, was a mound of ash (K156), *c* 0.2m thick. It lay between the centre and the southern edge of the trench. Its function and dating are uncertain, but it may represent the remains of a hearth contemporary with the cooking pit (Hi20) which lay *c* 5m to the NE. Towards the west edge of the ash a large pit (possibly another cooking pit) (K155) was cut, *c* 0.4m in diameter and 0.25m-0.3m deep. It was edged by stones on its west side and had a stone set into its base. It contained a little seaweed with a mixture of stone, peat and ash. The feature was later covered by irregular flat stones. It is unclear whether there were further contemporary pits or holes of the same size cut into the ash, although a small posthole 0.2m in diameter lay 0.6m towards the east and south.

A 40mm-thick layer of compact peat (K121,138) later developed across the centre of the trench, suggesting an abandonment of the earlier features.

PHASE 2: DATING AND FINDS

Steatite fragments were found in the *skáli* and a fragment of Norwegian bakestone (SF 1527) (which makes its earliest dated appearance in Oslo, Norway, just after AD 1100) although not *in situ*, came from the disturbed drain/flue (Hi14). There are in addition pieces of Lower Saxony pottery (SF 809) dated AD 1250-1400 found in the same deposits of the drain/flue (Hi14). These are, however, considered to be intrusive (see above). It is conceivable that the pits (H16/19) which disturbed the drain/flue were cut during Phase 3-4.

There is no secure dating evidence from the structure in Trench E/EJ. However, a piece of Paffrath ware (AD 1050-1200) (SF 1446), was found in the stratigraphy of the replacement building in this trench in Phase 3. The same context also produced a piece of birch bark which gave a C14 date of cal AD 785-1052 (GU-3050) (table 1). The problem with this date and the piece of Paffrath ware is that they come from an insecure context: the date may be from material deriving from Phase 1 features and this Paffrath ware from the Phase 2 *skáli* structure.

A conical lead spindle-whorl (SF 460) of possible 10th-/12th-century date was found in the uppermost contexts of the *eldhus* in Trench K.

Based on the available evidence for this phase it is suggested that the buildings were in use from as early as AD 1100 to the early/middle 1200s.

5.6.2 PHASE 3 - FURTHER CONSTRUCTION: A NEW *ELDHUS* AND *SKÁLI*

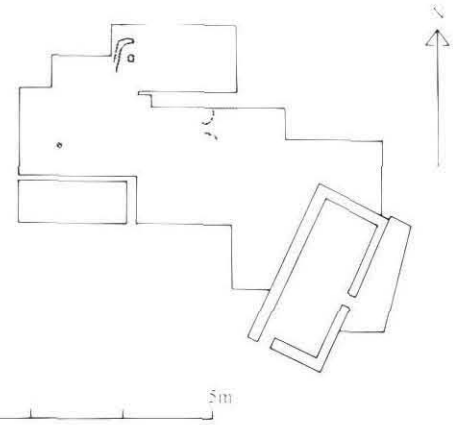
(illus 37)

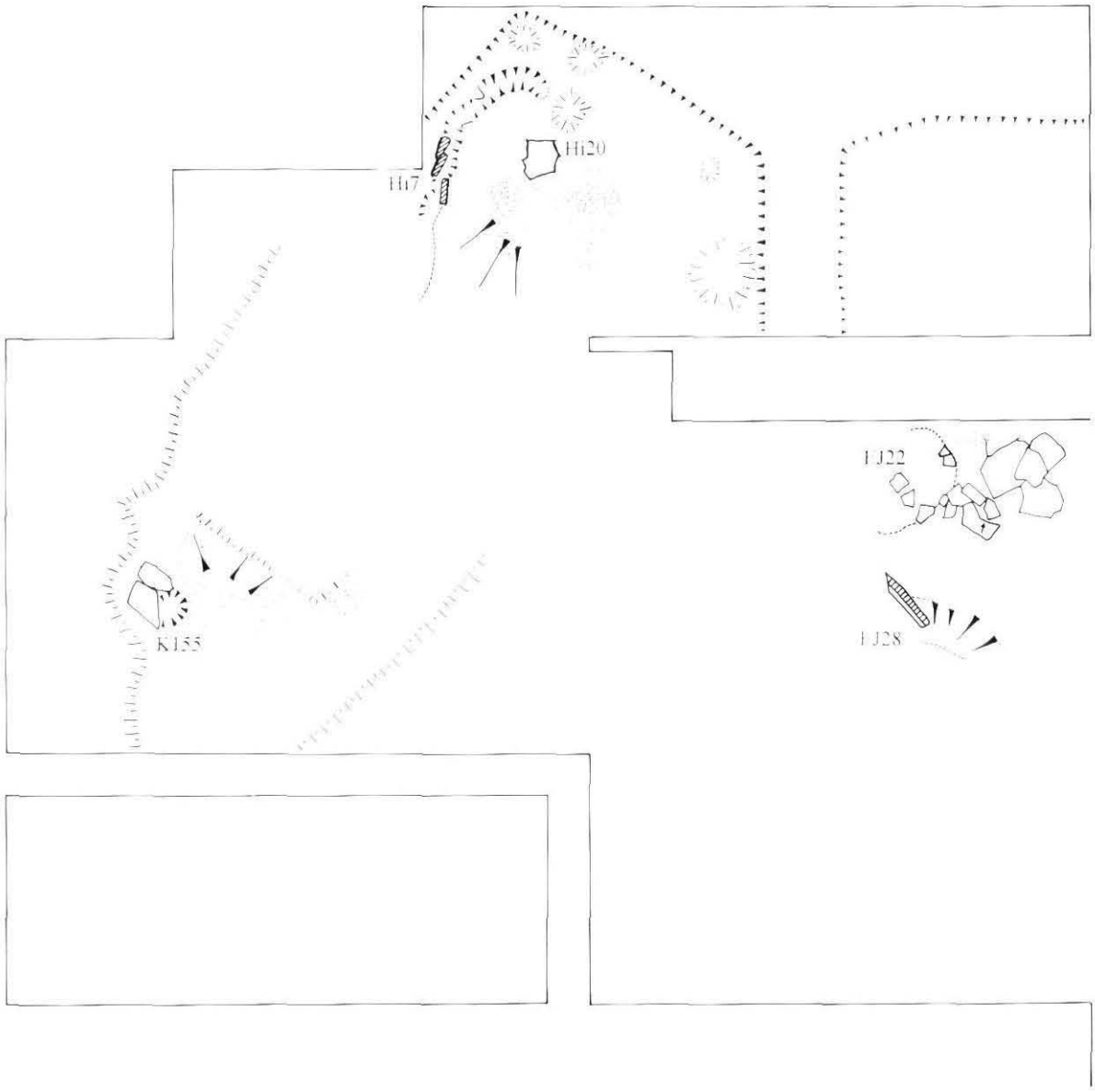
At the north end of the site the survival of the stratigraphy was limited and sporadic, but a redesigning of the Phase 2 hearth area was noted. Interpretation of the structures of this phase strengthened the suggested interpretation of an early *skáli* with accompanying *eldhus* in Phase 2.

DESCRIPTION OF FEATURES

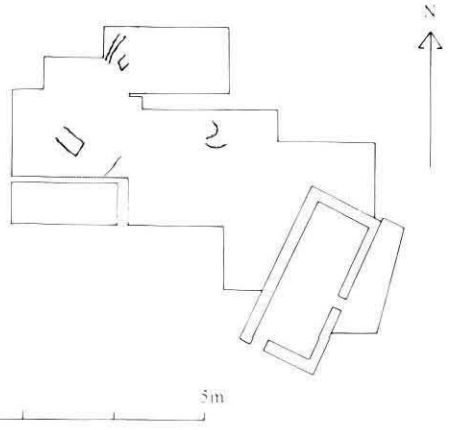
DEVELOPMENT OF THE COOKING AREA

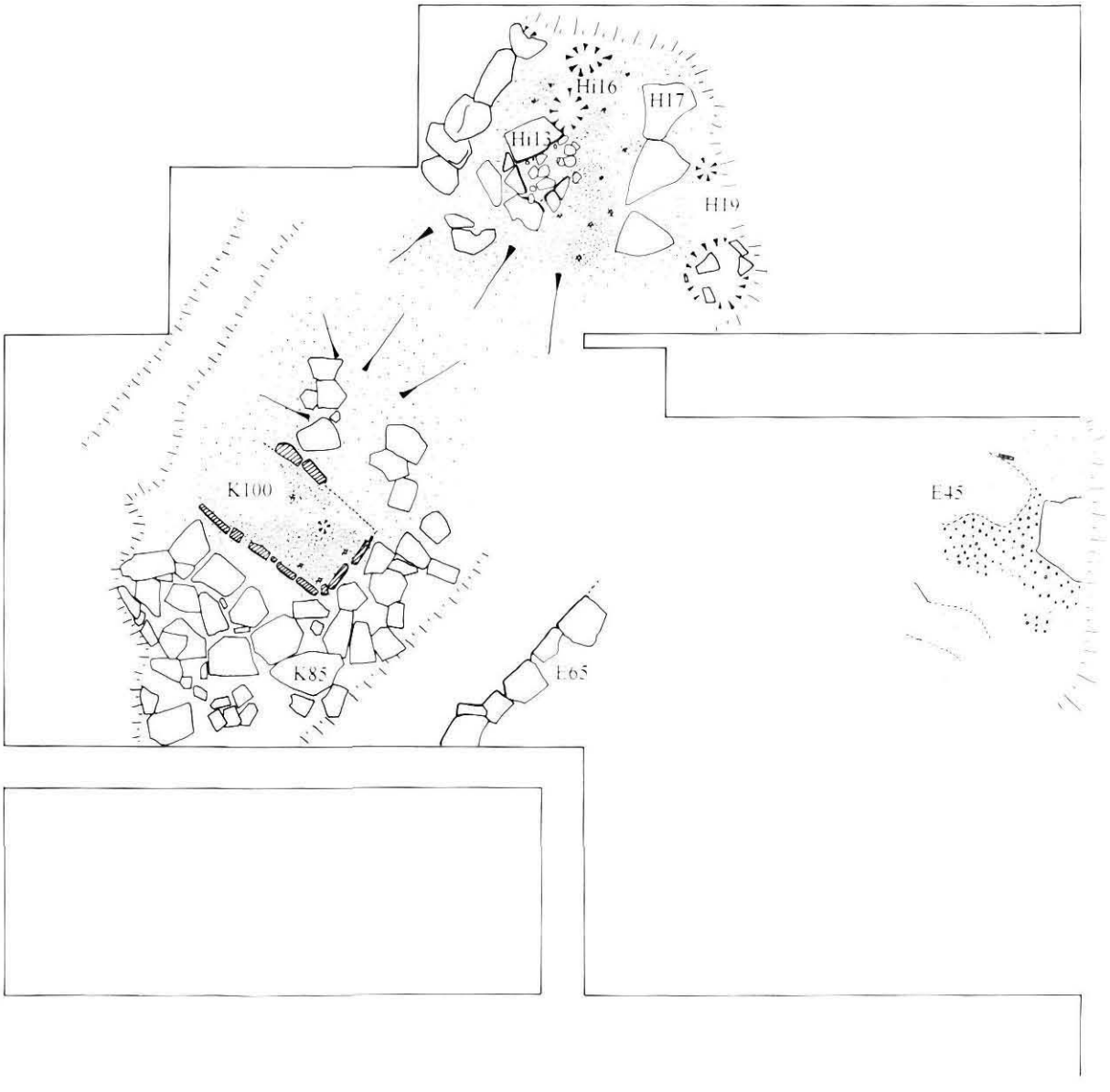
An enlargement of the Phase 2 cooking area (Hi20) now took place, and it is suggested that sand (Hi18) was used as a partial levelling layer,





illus 36
Plan of Phase 2 in the west of the site: hearths K155, Hi20 and EJ22 are shown with drain /flue Hi7 and edge of pit EJ28. Inset: the fire-pit Hi20 surrounded by the drain/flue Hi7 to the north and NW and by later pits Hi16 to the right of the picture; scales in 0.1m intervals; from SE.





illus 37
Plan of Phase 3 in the west of the site: with hearths E45 and K100, shown together with paving K85, wall fragment E65, oven Hi13, working area H17, and pits Hi16 and H19. Inset: oven Hi13 filled with stones, surrounded by burnt ashes and capping to the flue/drain Hi7; scale in 0.1m intervals.

deposited prior to the construction of a large rectangular oven (Hi13) which measured *c* 0.5m x 0.55m internally. This oven was built over and partly into the Phase 2 ash mound (Hi19). It consisted of five large, very burnt stones (one measured 0.3m x 0.5m), set in grey clay (Hi17) which was also in part burnt to a red colour, and which formed the north and west sides, and SW corner of the feature. A layer of small highly burnt stones were found in the bottom of the oven lying in a red-brown ashy silt. The oven was open to the east and SE (illus 37 inset).

An arc of three large level stone slabs (H17) lay *c* 0.85m to the east of the oven, and although cracked, may have delineated the working area in front of it. Their linear arrangement does not however suggest a separate hearth area although they could have been used as parching stones (ON *tussa*). The area surrounding the oven (Hi13) was *c* 3m in diameter and was burnt to a deep red colour (H15). The intensity of the burning affected the underlying peat and sand (H18) to the east, which lay on top of the bedrock.

The oven was filled with burnt clay and ash (Hi5, 9) which was spread over the surrounding burnt area (H15) and became mixed with yellow clay and grey peat (H15) to form a large mound *c* 0.3-0.4m high. Lumps of pure red clay were found interleaved with the ash in the immediate vicinity of the oven, as was charcoal, which also lay on top of the surrounding arc of stones (H17).

Overlying the eastern deposits of the cooking area was a layer of loose peat (H14), ash and burnt stones (H13). The arc of stones (H17) to the east of the oven may have been replaced during the life of the latter by further stone (H13). Alternatively, these mixed deposits (H13) may represent an end of the oven as a useful feature, as further pieces of broken quernstone were found on the west edge of the ash mound and a complete quernstone behind the oven. Another dump of ash, charcoal and yellow clay, lay to the south, close to Trench K, probably also derived from the oven (Hi13).

To the east a hard-packed sandy deposit of ash and charcoal (EJ19) was noticed immediately underlying the lower reddened (burnt) clayey deposits (EJ16) of a hearth (EJ15; E45, 48, 50, 52, 60, 70) which lay on top of the Phase 2 hearth. The hearth contained some burnt stone fragments, ash and clay, and a little wood (section **6.3.3**).

Lying 0.75m to the south of the hearth was another partly excavated feature which may have been a pit, gully or drain (EJ28). As revealed it was 1.0m in length, *c* 0.5m wide and clay lined in the north. Neither end was traced, although a large stone set at an angle in the feature was noticed. The whole was later covered by a layer of sandy soil (EJ18). This feature may have continued NW as deposits in the centre and east of the area in this phase and Phase 4 slumped downwards. The origin of the dip in deposits and the continuation of this feature, most likely a drain, were not pursued. It is uncertain when this feature was constructed: it is probable it originated during Phase 3, but dating evidence suggests it might have originated at the end of Phase 2.

South of the hearth and over the drain (EJ28) was a thin mixed deposit of ash and yellow-brown clay (E42, EJ17), possibly part of a floor level associated with the hearth. Between the hearth and the ash and clay was a discontinuous spread of hard-packed gravel (E49, EJ12), which seemed to interleave with some of the hearth deposits. There may have been two gravel layers with an intervening one of peaty soil. Over the hearth, ash and gravel developed a deposit of carbonised material (EJ14, 26).

Because of the difficulties in excavating at the east end of this area (deposits were limited to the corner of the trench), it is impossible to say whether there was a break between the Phase 2 stratigraphy and those considered to belong to Phase 3.

The oven to the NW (in Trench H) and the hearth to the SE (in Trench E), may have lain at either end of the same building, the *skáli* or hall (**8.3.2** below).

NEW CONSTRUCTION IN THE AREA OF THE PHASE 2 *ELDHUS*

Dark soil (K106) continued to develop in the SW part of the west end of the area, but a thin silt lens (K143) was noticed over the Phase 2 ash. The remodelling of the *skáli* to the north was mirrored to the SW where there was a contemporary construction of a new building, a replacement *eldhus* with a large hearth with kerbing (K100) and adjoining paving. A stone wall (E65), most likely belonging to this phase, was built in the SE and aligned NE/SW. It formed the SE interior face of the building in Trench K, although actual links with the latter's stratigraphy were destroyed by later disturbances. Only the wall's west face survived 2.5m in length and 0.5m wide, as excavated.

The hearth (K100) was rectangular and aligned NW/SE. Its kerbing was composed of long narrow stones (0.46 x 0.16m) set on edge, largely surviving on three sides and open to the NW, although whether this was due to design or later disturbances is unknown. The hearth measured 1.9m x 1.3m and was filled with hard ash and charcoal (K100). The deposits within the hearth were revealed as several layers 0.1-0.15m thick, interleaving with charcoal lenses and probably burnt-through hearth stones. There may also have been one stakehole towards the SE corner of the hearth. The ashes spread beyond the hearth, especially to its north, where it was seen as a large low mound *c* 1.9m x 1.5m x 0.15m. Its colour varied from bright orange to pale yellow and it also interleaved with charcoal lenses.

Partly surrounding the hearth (K100) in the SW was an area of paving (K85,119) composed of large flat stones measuring 3m x 4m. In the east the paving had slumped into the underlying peat (K121, 138) because of disturbance due to the insertion of a later feature. At least two layers of paving stones were recorded in the south and several layers in the SE, with peat lenses between. A final resurfacing may account for a single layer of fragmentary paving to the immediate north of the hearth (K100) which overlay the ash mound (illus 38).

PHASE 3: DATING AND FINDS

The eastern end of the *skáli* contained Norwegian bakestone fragments (SF 1451); pumice (SF 441), derived from an Icelandic volcanic eruption of AD 1362, which is worked into a whorl or fishing float and was found beside the hearth; (see also Paffrath ware (SF 1446) AD 1050-1200) and a dated piece of birch bark AD 780-1040, in Phase 2 above).

The *eldhus* produced *in situ* fragments of 14th-century medieval applied decorated pottery (SF 810), and many steatite vessel fragments.

In the light of the evidence it is suggested that this phase originated just before AD 1250 and lasted until a little after AD 1400.

5.6.3 PHASE 3-4 - PIT CONSTRUCTION AND ABANDONMENT OF PHASE 3 *SKÁLI*

The Phase 3 *skáli* may have been abandoned before a group of small irregular pits (H16,19, Hi16) all considered to be contemporary, were dug into the underlying stratigraphy or into bedrock.

DESCRIPTION OF FEATURES

One pit (Hi16) disturbed the NE end of the Phase 2 linear feature (Hi7); another two pits (Hi16) with dimensions of *c* 0.25m x 0.3m lay to the north. Further to the east lay three more pits (H16, 19). These were larger;

illus 38
Hearth K100 to the right of the picture, surrounded by paving K85. Wall E65 is visible above the hearth. Trench E lies towards the top of the picture and Trench H to the left. Other visible features are of Phase 4 date or later; scale in 0.1m intervals; from W.

one (H19) measured 0.8 x 0.9m and was dug 0.35m down into the bedrock. It was filled with burnt seaweed and some wood. Another pit (H16) measured 0.85m x 0.77m but survived only 0.12m deep and was filled with burnt seaweed and peat. All these features could be intrusive and could have been cut from as high as the beginning of Phase 4.

Prior to Phase 4 and the construction of a new dwelling-house on the site, there are a few other contexts which suggest abandonment of the Phase 3 buildings and levelling of the area. There was a thin layer, 20-30mm thick, of burnt seaweed (K82), which adjoined areas of peaty earth (K86, and EJ13,25) and sand (EJ7) which accumulated intermittently across large parts of the area. Some of the peaty layers (EJ13,25) contained many finds which may have been deposited at the end of Phase 3 or the beginning of Phase 4.

5.6.4 PHASE 4 - CONSTRUCTION OF A NEW DWELLING-HOUSE AND ANCILLARY BUILDING

(illus 39)

DESCRIPTION OF FEATURES

ABANDONMENT OF THE NORTH PART OF THE AREA

The north part of the area (Trench H) continued in an abandoned state. Peat, dark earth and charcoal (Hi12) developed over the Phase 3 structures, while in other areas sand (H8) began to accumulate. Some peat development (H9) lay to the east on semi-natural sand, suggesting it lay outside the earlier *skáli*. To the west a mixed horizon (H11) developed which was overlain by loose stone and peat (H12). The lack of any evidence of occupation suggest that this part of the area remained open after Phase 3 activities.

The number of artefacts found in the loose stone and peat layer (H12) suggests the direct influence of activities taking place to the south and SW, as does an overlying burnt area (H7) composed of brown soil, charcoal and stone. South of the Phase 3 oven and off the mound of ash in the north, a thin peaty layer (Hi4, 8) developed, probably throughout Phase 4.

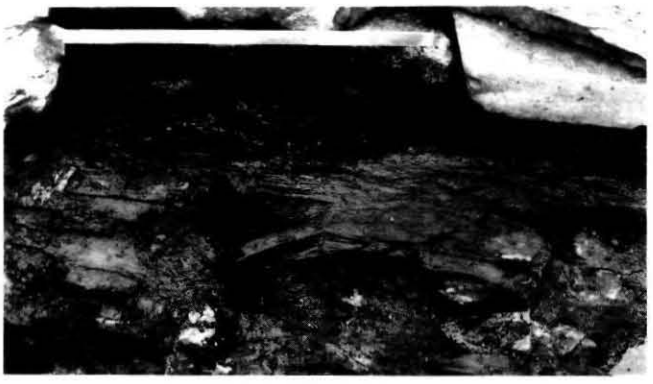
LEVELLING AND CONSTRUCTION IN THE SW AND CENTRAL PARTS OF THE AREA

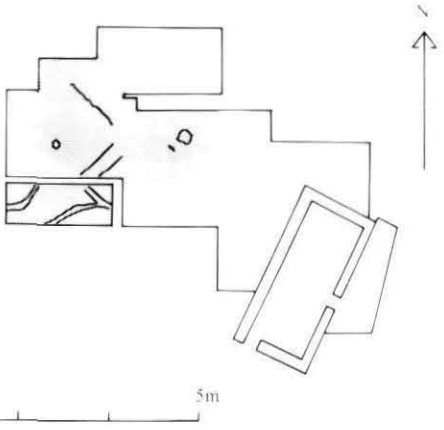
In the SW and central parts of the area, over the Phase 3-4 peat, accumulated a layer of building rubble (K84, 75, 39). The rubble included beach pebbles, fire-cracked and large flattened stones which may have resulted from the earlier structures on the site. The centre of the area of the Phase 3 cooking activities was used as a dump for debris (including many artefacts see **7.1.4**) which accumulated in a linear depression (K98) between the mounds of ash, possibly in a natural dip in the underlying bedrock and in the gap between the Phase 3 *skáli* and *eldhus*. Initially the feature was never formalised as an open drain. It contained wet peat which continued to develop throughout this phase (as (K17), see below).

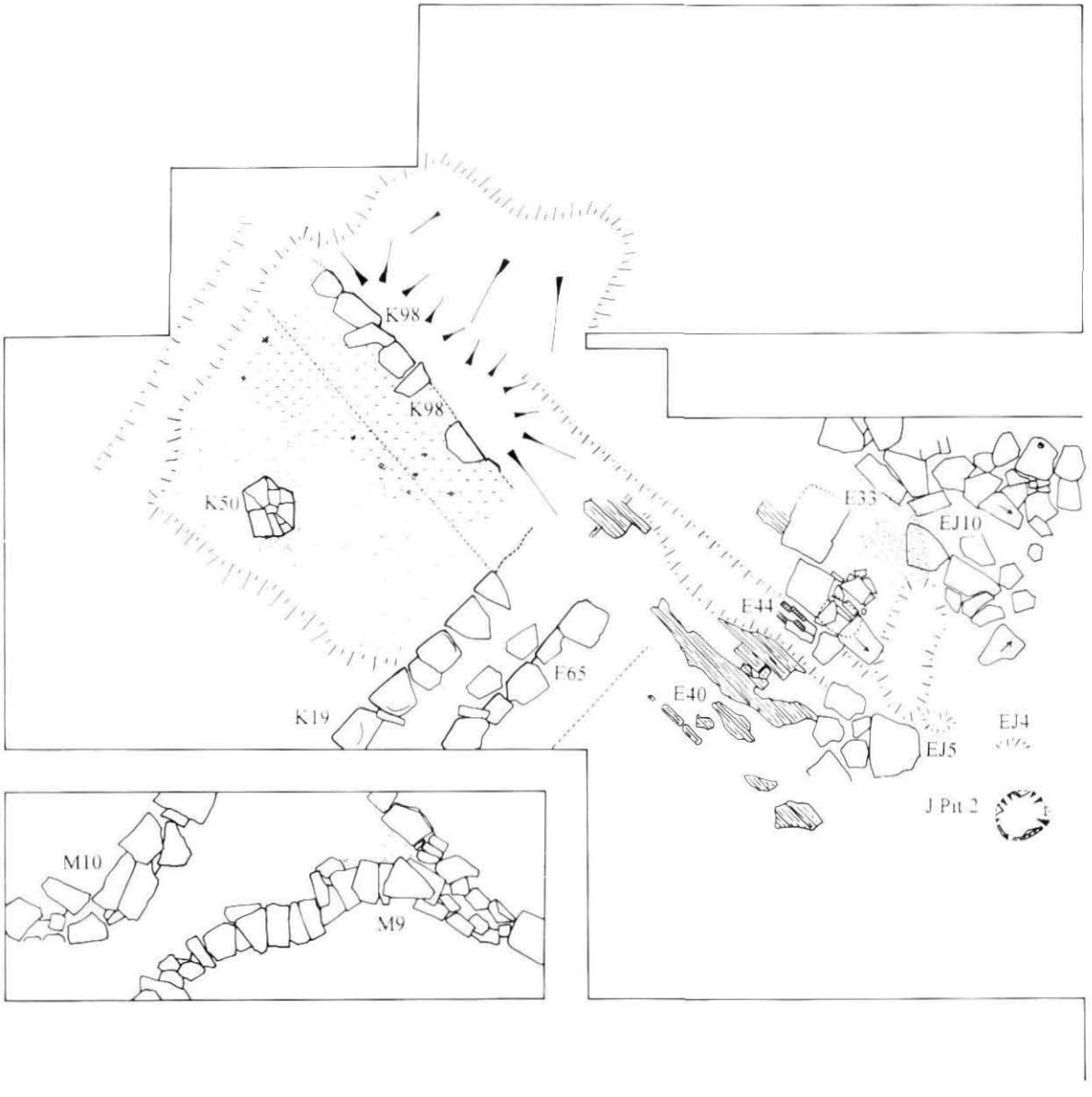
During or immediately after the levelling process two stone walls, surviving only as single faces were constructed. One wall (K98) was built on the southern edge of the open linear depression which was still in use. It was aligned NW/SE and survived in length 2-3.2m, and was a total of 3-4 courses deep. It used the spread of burnt seaweed (K82), mentioned in Phase 3-4 above, as a foundation layer. Both ends of this wall, its south face, and a portion of its centre were lost through later disturbances.

It is suggested that the east wall of the Phase 3 structure (E65) was still in existence and the original intention of the remodelling was to reuse this as the east wall of a new structure. The north wall (K98) would have joined the east wall (E65) at right-angles.

The reuse of the Phase 3 east wall as part of the new building was not however successful, possibly due to instability, and was replaced by the second new wall of this phase (K19). The new wall (K19) is the only







illus 39
Plan of Phase 4 in the west of the site: K 19, E65 and K98 are walls of the two buildings with hearths K50 and E33 with paving EJ10, stone setting E44, and dump K98. In addition are two drains M9 and M10, and pits EJ4, EJ5 and J Pit 2. Inset: fragments of wooden flooring E40; scale in 0.1m intervals; from SW.

structural feature of any phase on the site which was given proper foundations. A trench (K127) 1-1.2m wide was dug immediately west of the old wall (E65), and into it was placed a substantial new construction, *c* 1m wide, with a well built west face of large angular stones backed with rubble. It is suggested that the old wall was partly reused and buttressed by the new. The junction of the Phase 3 and Phase 4 walls at their NE end was unclear because of later disturbances. The new east wall survived at least three courses high.

The levelling layers (K75,39) described above, may have also partly resulted from the construction of the new walls. Later disturbances account for the lack of evidence for the west and south walls of this structure.

Lying centrally within the two walls, was a hearth (K50), constructed over the levelled peat and rubble. Although irregular in shape it measured 0.6m x 0.6m. It was composed of a large burnt stone, which had cracked and slumped into the underlying deposits (K75,39), but it contained burnt ash and charcoal. A clay floor (K44,33) surrounded the hearth, which later became mixed with ash and charcoal from the latter. Although the floor survived *c* 1.6m (N/S) in extent, its relationship to the walls was disturbed by later features.

The lack of any depth to the occupation debris within this building suggests that its use as a domestic structure was relatively short lived. The growth of rubbish and later peat beyond its north wall continued until the building's abandonment.

A NEW STRUCTURE IN THE EAST OF THE AREA

A new dwelling-house was constructed as a contemporary feature to the east. This new building may have used the stone walls (K19 and E65) for its western wall, thus abutting the building to the west.

In the NE corner of this area of the site was paving (EJ10). It was composed of large thin flagstones, some with chipped edges, but was very sporadic in extent. North and east of this was a second area of stone (EJ11), some tumbled, and one containing a pivot socket. It is suggested that the stone was the remains of structural feature, possibly part of the north wall of the new dwelling-house. Evidence for the southern and eastern walls of this structure was never found.

Between the central and eastern side of the area were the lowest deposits excavated in this trench, including much peat and soil (E53,63,69,74, 75,84,85). It is therefore not known whether Phase 2 and 3 features exist here. These contexts also contained some charcoal and could be interpreted as levelling layers prior to the construction of the wooden-floored dwelling-house.

Joists of a wooden floor were laid down and, when excavated, their remains sat in a fibrous peaty layer containing some textiles. This is possibly the upper layer of the previously described levelling layer, or remains of material that dropped through the gaps in the floorboards.

A wooden floor (E40, 43, 62, 71, 78, 81, 83) was constructed with the timbers aligned NW/SE as in the Phase 3 *stofa* to the east. The best preserved fragments of the wooden floor were of close-fitting timber. Some of the floor was seen to have been pegged, other fragments were burnt and other parts had decayed to a peaty consistency (illus 39 inset). It was impossible to determine whether there was more than one layer of timber. The floor survived best in the east-central part of the area. Repairs to the timber may have been made with stone as evidence of repaving in the NE was seen as well as some stones on the floor noticed.

In the NE corner a new hearth (E33, 37, 38; EJ9) was laid partly on the paving (EJ10). Although not fully revealed, it contained ash and charcoal, and was highly burnt. No hearth stones or kerbing were found, but the feature measured 1.0m x 0.6m as revealed. The hearth may have been situated in the corner of the building and protected from the wooden floor by an area of paving.

Immediately SW of the hearth were two stone features (E44). One lay 1.2m from the hearth and was composed of four small, linear stones set on edge *c* 0.4m long. The feature measured 0.2m in width and was probably a stone socket related to the hearth. Between this and the hearth was another feature (recognised during post-excavation analysis) as a cavity or box within the paving, covered with a flagstone lid. The feature was *c* 0.2m square.

The destruction of this building can be interpreted from the survival of ash and burnt peaty deposits (E31, 32, 41, 51, 68, 76, 77). They contained much wood, birch bark, artefacts and some stone, and may be considered as destroyed roofing material (section **6.3.3**) which covered much of the central-eastern area.

PHASE 4: DATING AND FINDS

Dating evidence for this phase is varied. Textiles–knitting, yarn and fibre, eg (SF 1639)–were all found in situ and in close association with each other on the floor of the new building. The knitting is post 16th century in date (section **7.6**), suggesting a 17th-century date for this activity. The building also contained steatite whorls (SF 466, SF 469), a clay-pipe bowl fragment (SF 289) (post late 16th century), and pieces of Lower Saxony pottery (SF 807) from AD 1350-1450 and Paffrath wares (SF 924) of AD 1050-1200. The latter indicate the disturbance and reworking of earlier deposits.

It is during this phase that continental redwares are first noted. Two pieces (SF 1426, 1280) dated to AD 1450-1550/1600 were found on paving associated with the hearth of the new dwelling-house at the west end, and in the construction trench of the wall (E65). In the burnt roof deposits of the building two further fragments (SF 921, 942) were found dated to *c* AD 1640. This suggests that the building was burnt down in the early middle part of the 17th century.

There are no radiocarbon dates for this phase, or this building, but it is suggested that some wood was reused from the Phase 3 *stofa*.

There is little dating evidence from this west building but a piece of a 14th-century Yorkshire jug SF 812, was found in the dump K98, as well as all the steatite lamp fragments (11) and many other pieces of steatite. Most of the finds from this building probably derived from Phase 3.

The suggested dating for this phase is from *c* 1400 to the early 1600s.

5.6.5 PHASE 4-5 - FURTHER PIT CONSTRUCTION

DESCRIPTION OF FEATURES

Within and north of the building in the centre of the area a series of contexts containing peat, rubble, ash and stone (K17x, 26) suggest that the building was demolished and the north wall (K98) lowered to ground level. The occurrence of a large number of artefacts (especially in K26) suggest that the area was left open (see Endpapers: the 1846 plan).

After the end of Phase 4, three pits were dug at the eastern edge of this area cut into sand (EJ7) which seemed to have accumulated outside the Phase 4 dwelling-house. The largest pit (E46) cut the paving and hearth within the building. It measured 1.75m x 0.75m but was not fully excavated. Its fill (E64) was of clay and charcoal, and possibly that of seaweed. Later it was capped with a patch of light yellow-brown clay (E39; EJ2, 3). A second patch of this clay was found to the NE which contained a large number of artefacts.

The other two pits were smaller. One (EJ4) was half-sectioned, but measured 0.56m in diameter and *c* 0.3m deep. It contained a fill of burnt peat and seaweed. The other pit (EJ5) measured *c* 0.2m x 0.4m x 0.15m (illus 21) and also contained burnt seaweed and peat as its fill.

5.6.6 PHASE 5 - FURTHER NEW CONSTRUCTION: A REALIGNED DWELLING-HOUSE

(illus 40)

This phase marked the beginning of a new structure on the site.

DESCRIPTION OF FEATURES

A double-faced wall (K157) aligned NE/SW, which cut through the remains of the Phase 4 features, was constructed in the centre of the area. The wall survived 2.8m long and 0.5-0.6m wide. Beyond it to the NE a possible continuation of the wall was revealed as four large blocks of stone (Hi22). The blocks lay on a foundation of stone (Hi3). On either side of the wall was levelled rubble.

Another event occurring possibly at the same time, was the construction of a drain (K20,133, Hi23) parallel to the wall, but *c* 2.0m to the west. It was constructed into the underlying sand and bedrock through earlier stratigraphy. Its southern end was lost due to later disturbances, but its north end, presumably linked with a 1.6m length of drain (Hi23) in the north of the area. This piece of drain was of similar construction and on the same alignment. In total the drain survived 8.0m long, but it may have continued to both north and south.

The drain was 0.3-0.5m wide and *c* 0.2-0.25m deep, and was probably entirely lined with irregular stones set in clay and resting on basal slabs. It was capped by large stones, plus a fragment of broken rotary quern. A greasy black silt (K34) was present in the drain and may have filled it completely. The silt was partly derived from an overlying peat deposit which developed in the north of the area.

The next event was the levelling of the southern half of the double-faced wall (K157), whose rubble (K11x) provided the foundation and building stone for a NW/SE wall (K11) which was built across the centre of the area. It formed the north wall of a building which probably used the Phase 4 east wall (K19) as its east wall. The new wall was poorly built of large flat stones forming a single face surviving up to three courses high and 1.6m in length. Its total length from its NW end to the east wall would have been 3.6m. What the exact relationship was between this wall and the drain (K20,133) is difficult to determine because of the lack of evidence. It is unclear whether the wall continued over the drain, stopped short of it, or used the drain capping as a foundation for the building's west wall.

The backing to the wall was formed of rubble, yellow clay, general rubbish and peat (K15), derived partly from levelling rubble, rubble to the north and earlier stratigraphy. The floor levels of this new building were dug down slightly into the Phase 4 deposits.

During the laying down of floors within this building, it appears that the foundations of the slightly earlier double-faced wall (K157) were used for a NE/SW partition lying centrally within the structure. The clay floors (K9, 10) on either side of the partition were different, but where the north wall of the building did not survive, the edge of the floors showed its alignment.

West of the partition was a hard-packed dirty clay floor with patches of charcoal (K9), 25mm thick. It survived only 1.6m in width from the north wall to its southern extent where it was burnt. This, plus the positioning of three or four post- or stake-holes indicate that a hearth existed to the south which had been removed by later activity. A patch of debris (K25) with shell and charcoal remained on top of the floor in the SW.

East of the partition, a series of at least three yellow clay floors (K10) were found, interleaved with thin lenses of sand, charcoal and occasional flat stones. The final surface was thin and hard, and contained a patch of wood and clay in the centre, and possibly a posthole, 0.23m in diameter, towards the SE. A doorway may have existed in the partition separating these two rooms, as three of the stones of the earlier wall (K157) remained prominent as a slightly raised threshold. The southern extent of this building is unknown.

North of the building, an area of flat stones set in sandy soil (K3,13) suggest this area was a roughly paved surface, possibly a yard, divided centrally by what remained of the early double faced wall (Hi22).

The abandonment sequence of the building is unclear, but a disturbed layer including soil, ash, charcoal and sand, forming a thin hard surface (K5) towards the SW, may be indicative of its levelling. Related to this activity was a small dump of burnt material with oyster and mussel shells (K101) deposited over the drain in the west. The central and southern half of the area, including the drain, was covered in stones and a thick layer of peat (K8). The next event on the east part of the area was the construction of a wall (E35) with associated drain (E9) and paving (E88).

The drain (E9) was constructed down into the Phase 4 floor deposits. It was aligned NW/SE and its sides were lined with stones, possibly set in clay (E22) at its east end. A patch of the same clay 0.7m x 0.4m extended beyond the limit of the surviving side stones, possibly indicating its continuation. Four capping stones (E86b) survived. The drain was *c* 0.18m wide and *c* 0.17m deep internally, and was 3.5m long. It appeared to be a narrow stone-lined channel which may have run alongside the northern wall of the building in the west. Its stones were much larger than the west drain (K20,133) and lay at right-angles to it. How far to the NW and SE the drain extended is unknown.

North of the drain and at right angles to it, possibly constructed at the same time was a wall (E35), of rubble and peat built on hard packed pale clay (E13,17). The clay was 10-50mm thick and was revealed at either side of the wall. The wall was aligned NE/SW and was 1.0-1.5m long, 1.0m wide and 0.2-0.3m high. It seems to have used the drain as its southern boundary but most likely continued to the NE. It however formed the east boundary to a 1.5m sq extent of paving (E88) composed of large stones. It was possibly the same as, or better paving than that which extended to the north beyond the dwelling-house.

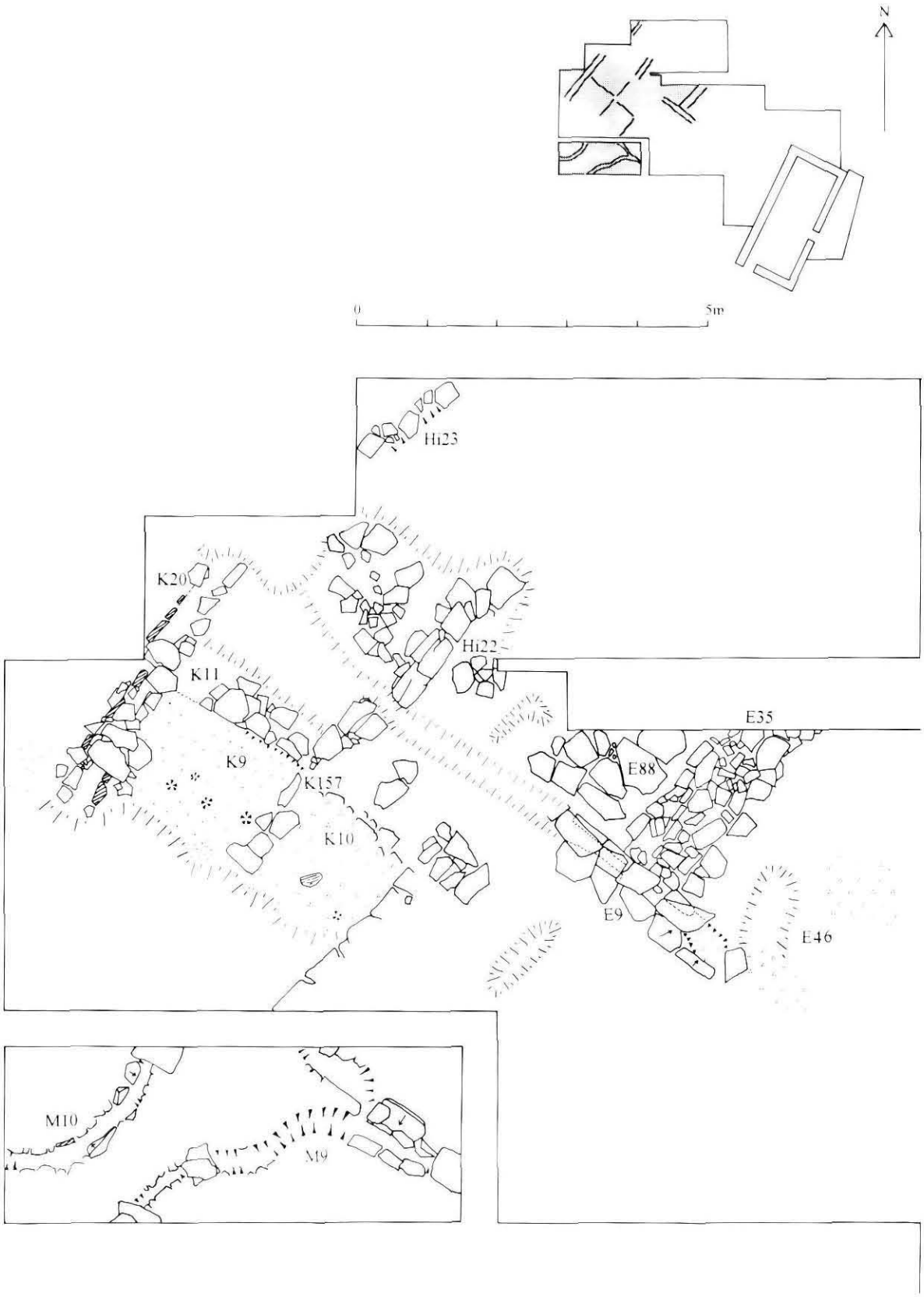
PHASE 5: DATING AND FINDS

There are no radiocarbon dates but clay pipes (SF 288, 290) of AD 1640-1670 date, window glass, Anglo-Dutch pottery (SF 801) of the ?17th century, and continental redwares of the mid-17th century were found. A piece of ?17th-century tin-glazed earthenware (SF 841) was found beneath the farmhouse floor. Occurrences of English 14th-/15th-century pottery and steatite suggest the disturbance and reworking of earlier deposits.

5.6.7 PHASE 6 - FINAL ACTIVITIES IN THE WESTERN AREA

DESCRIPTION OF FEATURES

Into the remains of the levelled Phase 5 building in the west, two shallow circular pits, *c* 0.5m in diameter, were seen as shadows at the beginning of the excavation. The occurrence of a mixed deposit in the SW of sand, peat and small stones (K14, 41, 42) later covered by sand (K6) suggests recent disturbance and deposition in this area. To the NW of the Phase 5 drain developed a thin, light-brown sandy layer (K16).



illus 40
Plan of Phase 5 in the west of the site: the west building is represented by walls K11 and floors K9 and K10, with partition walls K157, Hi22 and E35, paving E88, drains Hi23, M9, M10 and E9, and pit E46.

In the north of the area a compact patch of peaty turves (H3) was deposited over rubble (H6,7) which developed during Phase 5. Over this was a patch of yellow gravelly clay (H4) possibly belonging to a series of three small hearths (H5), some 0.25m in diameter. The latter were seen as burnt stoney areas with clay bottoms. They were constructed through the peat (H3) and into the levelled rubble (H6, 7) beneath.

The latest activities in the northern part of the area, included a mixed horizon (H/Hi2) of sandy clay, peat, soil and rubble. The rubble encompassed some flattened flagstones and a small wall or linear rubble foundation aligned SE/NW (*c* 1.0m x 0.3m x 0.2m) was recognised. This mixed horizon with stone features may have developed with the activities of the modern croft and the construction of a yard entrance at this point over the earlier stratigraphy. Modern levelling certainly resulted in the removal of earlier archaeological features from the NE and west parts of this area.

In the NE corner of the area on top of the Phase 5 wall (E35) developed peat and soil (E12, 16, 18, 19, 20, 36). To the south and SE developed sand (E7, 14, 15, 21, 23, 30, 34, 61) mixed with clay, stone and possibly mortar, with a layer of loose stone (E4) on top. East of centre, two stakeholes (E30), 10mm x 40mm and 20mm in diameter, were found beneath a stone in the sand. To the south was constructed a single-faced wall (E87), 1.25m long and 0.3m wide, with a rubble and sand backing. It was aligned SW/NE and survived four courses high.

A small feature (E89) aligned SW/NE, *c* 0.7m x 0.27m, composed of small stones set in clay, disturbed the paving (E88) in the north of the area. The final feature was a fragmentary wall (E3, 10, 86), possibly a late boundary wall built on top of the Phase 5 drain, and composed of four large stones.

PHASE 6: DATING AND FINDS

Finds include artefacts from earlier phases due to the continued disturbance of earlier stratigraphy. This phase is dated from the mid 1800s to *c* 1930.

5.6.8 PHASE 7

In the north part of the area, immediately under the turf and topsoil (H1, Hi1, K1) was a layer of soil and rubble (K2, 4, 7). To either side of the Phase 6 fragmentary wall (E3, 10, 86), and on top of the Phase 5 deposits developed mixed deposits of stones, sand, peat and soil, with some burnt patches (E2, 3, 5, 6, 8, 11, 66, 67, 73) which were then covered by turf and topsoil (EJ1; E1).

This phase includes all structures and artefacts which are post-1930 in date, as well as residual artefacts from disturbed earlier phases.

col illus 1
View of the east side of Papa Stour from the air, showing Housa Voe and Northouse, with the island of Foula on the horizon (Dennis Coutts).

col illus 2
View of the church and the Biggings from the SW, the photographic tower marking the site of the excavation. 'The corn and grass grounds are truly beautiful and open a wide field for contemplation' (CS 1793).

col illus 3
View across the Hill Dyke from the SW.

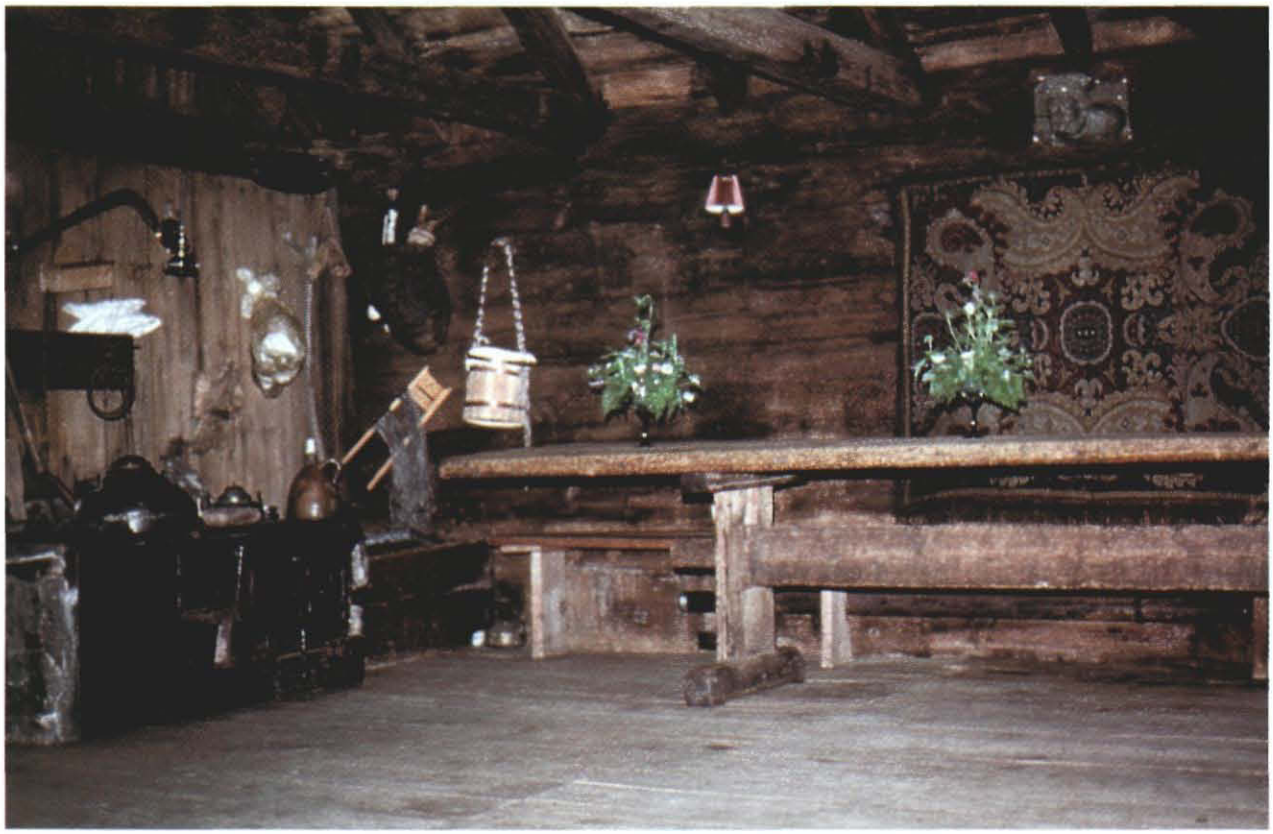
col illus 4
Turf-flaying still being practised on Papa Stour in the 1970s.

col illus 5
Ollaberry in Northmaven, the seat of Andrew Mowat.

col illus 6
The Lawthing assembly site at Tingwall, with the paved causeway in the centre and the church and manse at the top of the slope.

col illus 7
The stone circle at the head of Housa Voe, Papa Stour.

col illus 8
The *røykstova* at Kirkjubøur, Faeroes: exterior.



col illus 9
The *røykstova* at Kirkjubøur, Faeroes: interior.

col illus 10
The site at the Biggings under excavation in 1979
with the roofless Gørl in the centre.

col illus 11
The Phase 2 fire-pit (J105) partly dismantled.

col illus 12
The floor of the Phase 3 *stofa* showing its corner hearth (J27), the privy pit (half emptied) beyond and the protective wall (J13) on the left.

col illus 13
Bucket base (SF 393) *in situ* on the wooden floor of the Phase 3 *stofa*.

col illus 14
Lamps of steatite (SF 521 and SF 522) and pottery (SF 518); approx 1/2.

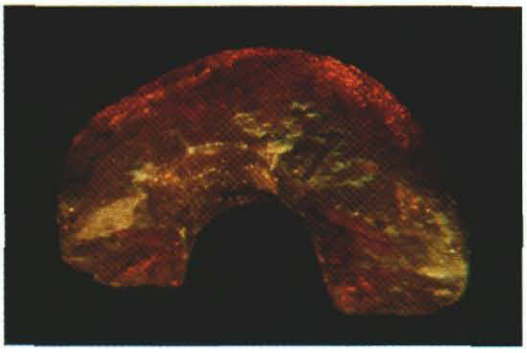
col illus 15
A selection of plain and decorated steatite whorls, both conical and round; approx 2/3.

col illus 16
A selection of plain and decorated flat steatite whorls and gaming pieces; approx 2/3.

col illus 17
A selection of whetstones; approx 2/3.

col illus 18
Fragments of a decorated shallow dish of North German/South Scandinavian slipware (SF 946b); approx 1/1.

col illus 19
A rim from a North German/South Scandinavian pipkin (SF 817); approx 1/1.



col illus 20
Fragment of an amber bead (SF 201); approx 8/1.

col illus 21
Ropemaker's 'top' (SF 1066); approx 1/1.

6

THE ENVIRONMENTAL EVIDENCE

6.1 INTRODUCTION

Beverley Ballin Smith

The information provided in this section on the environment at the Biggings comes mainly from organic samples. Many were collected randomly during the excavation, as organic material was abundant in certain parts of the site. Other samples were taken as part of general sampling procedures. It is apparent from this material that preservation was favourable towards the plant remains at the expense of the faunal. The acid conditions of the site, with the deposition and possible growth of peat, favoured the preservation of wood, wooden objects, seeds, textiles and also pollen. Conditions that caused the almost total destruction of metal objects (see chapter **7**) also largely removed animal bone and shell from the archaeological record from all but the latest phases. The picture of life at the Biggings during all phases, is therefore incomplete. The selective preservation of material has, however, provided an insight into medieval life which is normally missing from rural excavations. It is worth stating that the environmental remains from the Biggings are more comparable to the deep stratigraphy and type of preservation experienced on excavations in urban centres, than other rural sites. The Biggings provides at present a unique opportunity to embellish a little our knowledge of the environmental economy of medieval rural settlements at the western edge of the North Sea world.

6.1.1 VEGETATION AND HUMAN AGENCY

Pollen analysis of deposits from within and besides the buildings (sections **6.2** and **6.3**), has provided much of the evidence for the local vegetation surrounding the settlement. There was either a distinct lack of tree and shrub pollen or its presence was extremely sparse, indicating that then, as now, the island was almost treeless. The pollen record revealed a picture of coastal dune grassland with peat or maritime heath in the vicinity of the Biggings. This picture altered little, and the present-day landscape may not have been unfamiliar to the Norse settlers of Papa Stour, being largely a product of the prehistoric inhabitants of the island, prevailing climatic conditions and perpetuation of farming practices.

Organic samples from within the structures (section **6.3**) provided more detail of human utilisation of the landscape: pollen from crops and arable weed seeds showed that cultivation took place in close proximity to the Biggings and that wetland habitats may also have been exploited. Although grassland was maintained, suggesting that grazing was an important aspect of the island's economy, there was also evidence of arable cultivation. Traces of charcoal in one of the pollen samples indicate that burning took place, not only to improve the grassland, but possibly also to clear it for arable use. However, the most likely source of the charcoal was probably domestic, from fires or from the burning down of wooden buildings.

The implication from the pollen analyses is of a landscape of pastoral grazing with some arable fields, the threat of heather encroachment, some wet areas, and with little significant change over time.

6.1.2 THE EXPLOITATION OF THE LOCAL FLORA.

The local environment, although limited in the number of plant species (**1.5** above), was exploited to the full. There is evidence (see section **6.3**) that what local trees there were, whether native to Papa Stour or to the adjacent mainland, were used. A single hazel nut survived in the archaeological record as well as small isolated fragments

of hazel, birch and juniper wood. In addition, the possible inclusion of willow from Phase 4 may suggest it was also a local resource. By the end of Phase 3 (*c* AD 1400), hazel and birch were no longer used and disappeared from the stratigraphic record.

A more abundant and permanent resource was the local low-growing vegetation of grasses, rushes and heaths which provided bedding, litter and possibly fuel. Food species are discussed below under crops, but a by-product, straw, was in use during the second and third phases of the settlement. It was probably strewn on the floor of buildings at the east end of the site, and may indicate that during Phase 3 especially, the floor of the *stofa* had become and continued to be damp. Discarded straw found in the dump at the west side of the site at the beginning of Phase 4, suggests its ubiquitous use during Phase 3 (the 13th and 14th centuries).

Flote grass, rushes and other fibrous plants were also found among the samples at the site. They may have been used as bedding for cattle, suggesting that animal litter was stored close to the domestic buildings; for primitive wicks for lamps and for some form of textile (see section **7.6**). Collection of bog mosses may also indicate their use for antibiotic and absorbent needs. In addition to grass and rushes, heathy and grassy turf was also used. Collection of this material would have meant cutting and digging of the sod, and drying it. Being relatively heavy even in a dry state, the turf would have required transporting to the settlement on a cart or in 'kishies' (panniers made of straw) (see Fenton 1978, 230-1). Turf was primarily used as roofing material, where it formed an insulating and absorbent outer skin to a timber roof lined with birch bark. The site provided ample evidence of its use where it was often found in a burnt condition covering collapsed roofing timbers. Another, but uncertain, use might have been as wall-core packing. Turf was also possibly burnt on the domestic hearths and used for slower burning when a fire was kept alive overnight, for example in the fire-pits.

Another and very important resource was seaweed which was used from Phase 1 at the Biggings and predominantly stored in pits. Its gathering and specific use suggests it had a highly specialised function in the production of ashes or salts (**6.3.7** below). Much of the vegetable matter collected for use at the site was probably dug, gathered or cut on a seasonal basis. The evidence is not detailed enough to provide more information on this aspect of the economy of the site, but plant resources were important and their impermanent nature suggests that their collection was part of the daily or seasonal cycle of work at the steading.

6.1.3 THE CULTIVATION OF CROPS

Evidence for crops has come from pollen and macro-samples associated with the structures but the range of species found is restricted to cereals. Cereal plants grown at the Biggings included both naked and hulled six-row barley with wild oats present as a weed species in cereal fields. A fuller discussion of these species is to be found in section **6.3**. The straw discussed above may derive from the cultivation of oats as no barley straw was found.

The paucity of crop species is interesting. Cereal pollen was not found beneath the buildings (section **6.2**), and that found on the floors may have been a result of introduction on straw, other litter, or as a survival on turf. The macro-samples indicate food processing took place within the buildings, as is also evident from carbonised food remains on coarseware sherds (see section **7.3.1**). Missing from the collection is evidence of other vegetable foodstuffs. The paucity of firmly identified material from Norse and early medieval sites suggest that vegetables may not have been a common dietary component until their introduction in the late 17th century (Fenton 1978, 421, and pers comm Camilla Dickson). The surviving samples hint at a restricted and monotonous diet which would have included meat and fish, discussed further below.

6.1.4 THE USE OF NON-LOCAL WOOD RESOURCES

Some of the best preserved and most widespread evidence of organic material has come from non-local wood. Imported wood was largely used for building construction from Phase 2 to Phase 4 (ie 11th to 15th centuries), and for the manufacture of small domestic objects such as spoons and barrels. The amount of Scots pine and oak timber, the size of the pieces used, as well as the historical evidence, suggest that the origin of the wood was Scandinavia, more specifically southern or eastern Norway. The timber was largely debarked and branches were removed, suggesting its preparation prior to use, and probably prior to importation. Although some of the flooring in the Phase 3 *stofa* showed evidence of alteration and reuse, it is thought that this took place at the site. In association with the pine and oak was a significant quantity of birch bark, most likely from the

same origin, used in narrow sheets to provide a waterproof covering to timber roofs beneath a turf sod, and for fishing floats and lighting.

Other non-local wood included beech and ash (with possibly juniper and hazel), which could have had a Scandinavian origin. In addition are two small fragments of exotic species: cork oak and balsa wood. The western Mediterranean origin of the former suggests that it might have arrived at Papa Stour as a trade item. The total lack of evidence for marine-boring molluscs infiltrating the timber indicates that very little of the wood found at the site can be classified as driftwood. The occurrence of balsa wood (from the Caribbean/tropical America) at the site (**6.3.3**) remains a mystery.

Evidence for woodworking techniques is discussed in sections **6.3** and **7.5**. However, it is suggested that on a treeless island woodworking may not have been an occupational skill found among the inhabitants of the Biggings. Much of the pine flooring found in Phase 3 showed that it had been radially split, and prepared before being brought to the site, revealing that the timber may have been exported in a semi-finished state. The manufacture of some of the smaller wooden objects such as spoons and coopered vessels also required a high woodworking skill suggesting their importation, probably with other goods, from England and the continent. Fragments of a bark vessel also show a concept of resource use and sophistication of woodworking skills which would have been foreign to the inhabitants on Papa Stour but which was more akin to Scandinavian and North European woodworking techniques. Few woodworking tools were found at the site, one made of iron with a horn handle, and a wooden wedge, from phases 3 and 4 suggest that some carpentry took place, and indeed, smaller everyday wooden objects may have been manufactured from pieces of used and discarded timber.

The importation of wood resources (as well as other imported goods) to the Biggings indicates a monetary wealth and economy not previously realised on a rural excavation of the early and high middle ages in Scotland. This, and the status of the settlement, is discussed further in chapters **3** and **4** and in the final discussion chapter **9**.

6.1.5 THE EVIDENCE FOR EXPLOITATION OF FAUNAL RESOURCES

The presence of animals at the Biggings is shown through the by-products of wool and horn which survived in the archaeological record rather than skeletal material which did not. However, although the evidence is largely of domesticates, some was collected of other wild species. In comparison with the relative wealth of plant remains, the number of samples of faunal species found at the site is very limited. There was also a vertical distribution of material, with the earlier phases containing little faunal material and the later phases the most. This was largely due to factors of preservation and disturbance encountered during the excavation.

Domestic species represented by remains of horn, textile, wool and hair include sheep, goat and cattle. More precise knowledge of the variety and size of these domestic animals is not available although sheep may have been a primitive Iron Age type or a primitive type crossed with a more variable fleeced sheep from Europe. The evidence of a rare bone fragment supports the historical evidence (**3.3.1**) that pig was also present on the site, and that sheep/goat and pig younger than three years were kept. These species, including cattle, were also butchered at the site.

Evidence of wild species includes the fur of stoat, rare bones of birds, a few fish scales and the occasional marine molluscs. It is to be expected that bird and fish resources played an important part in the food chain of the island economy, and are vastly under-represented in the archaeological record. Marine molluscs could also have played an important part in providing seasonal nourishment, and bait for sea fishing but only evidence of three species survived -the Iceland whelk, Horse mussel and periwinkle. The presence of stoat fur on the site is interesting as the species was introduced into Shetland in the early 17th century (Berry & Johnston 1980, 129), and may represent a local capture.

Present in some of the organic samples were insect remains (section **6.5** below). A more structured sampling procedure would have provided more information on living conditions at the Biggings, but nevertheless from the samples studied a picture of decaying structures with turf roofs is seen in Phase 4 indicated by the presence of weevils. Other species provide information that hay was stored at the site and peat was also present.

6.1.6 DISCUSSION

Significant changes seen at the site are few. What is presented from the information is a continuation of mixed farming practices with a limited range of crops from as early as Phase 2 (the 11th century) to the end of

Phase 6 (the 1930s). There is no evidence for changes in types of cereal grown in the Northern Isles from the late Iron Age to the recent past (Camilla Dickson pers comm). Admittedly changes will have taken place in improving animal breeding stock but the limited nature of the evidence prohibits further study of this. Changes will have taken place in the utilisation of other resources such as turf and seaweed, but the pattern is vague, and their presence seems to be continuous over 900 or more years.

One of the most important developments at the Biggings was the importation of Scandinavian wood during phases 2 and 3, showing the necessity of long distance trade and the need for resources which were not present on the island or on the neighbouring Shetland mainland. The supply and demand for Scandinavian timber, with accompanying imported goods (see section **7.1**) may have continued for approximately 500 years, and the continental contact is an important one when considering the status and nature of the habitation at the Biggings, and the fact that it was politically Norwegian until 1469.

The wealth revealed in the imported structures contrasts with the paucity of evidence for food and a varied diet. The local environmental economy appears to have been restricted to the resources available on and around the island. Missing from the archaeological picture is evidence of a more varied lifestyle, where from the late 15th century onwards a wider range of foodstuffs, drink and tobacco would have been available from Hanseatic traders plying their trade across the North Sea. Trade would not have been all one way and we know from the historical record (see chapter **3** above), that, in return for some additional necessities and luxuries of life, the inhabitants of the Biggings may have supplied dried fish and fish oil, skins of domestic and wild animals, meat, tallow and dairy products, knitted and woven goods, and possibly feathers (Fenton 1978, 3). Of these, textiles were recovered in quantity but only one bird bone and a few fish scales survived the conditions of the site to appear in the organic record.

6.2 SOIL POLLEN STUDIES AT THE BIGGINGS

Graeme Whittington & Kevin J Edwards

Soil pollen profiles are difficult to interpret (Dimbleby 1985, Havinga 1985), but they do reflect, albeit inadequately, the past flora and environment of their sites. Selected results from a palynological study of minerogenic deposits associated with the archaeological excavations of the Biggings (Crawford 1985; 1991) are presented here. A full methodological and botanical examination of four pollen-analysed profiles from the site will be published elsewhere. In this contribution, based on data from two profiles, three key questions are ultimately addressed: what chronology is indicated? what was the nature of the environment when the Norse arrived? and what environmental or agricultural changes occurred while the Norse were resident?

6.2.1 SAMPLING SITES AND STRATEGY

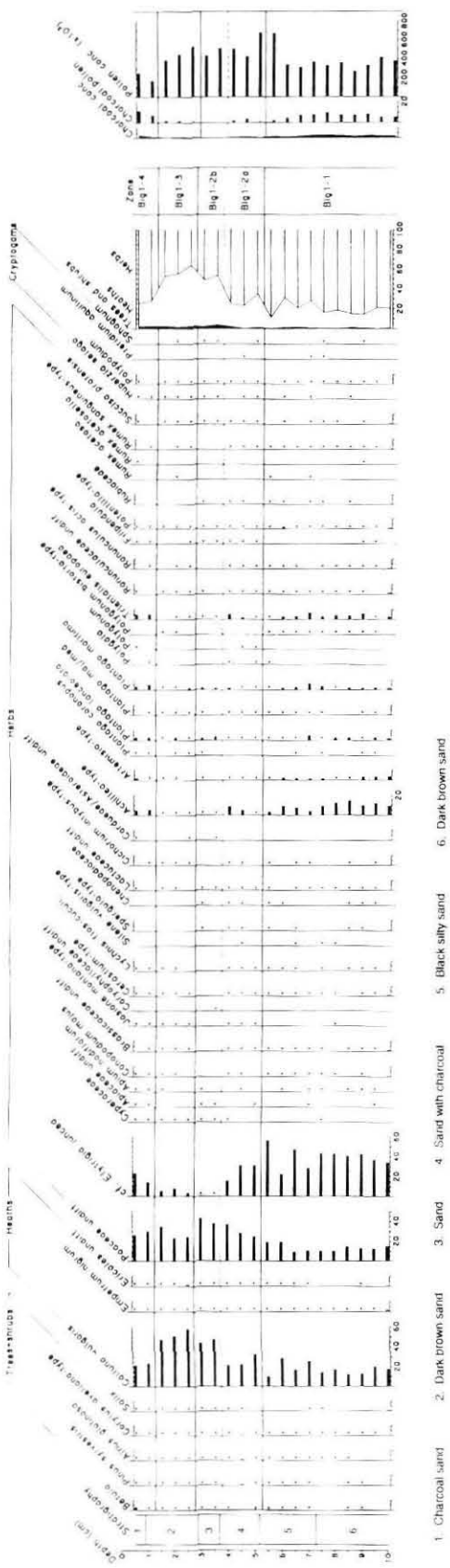
Sample monoliths were obtained from organic sand contexts associated with the Biggings excavation area. Monolith Biggings (Big) 1 came from beneath the wooden floor of the Phase 3 dwelling-house (illus 28) and monolith Biggings (Big) 3 came from the organic sand deposit which post-dated the wooden floor (Phase 4-5). The two monoliths were located about 0.8m apart. Marshland pollen sites, Biggings Field and Loch of Biggings (Whittington & Edwards 1993) are located about 350m to the SE.

LABORATORY METHODS AND THE PRESENTATION OF RESULTS

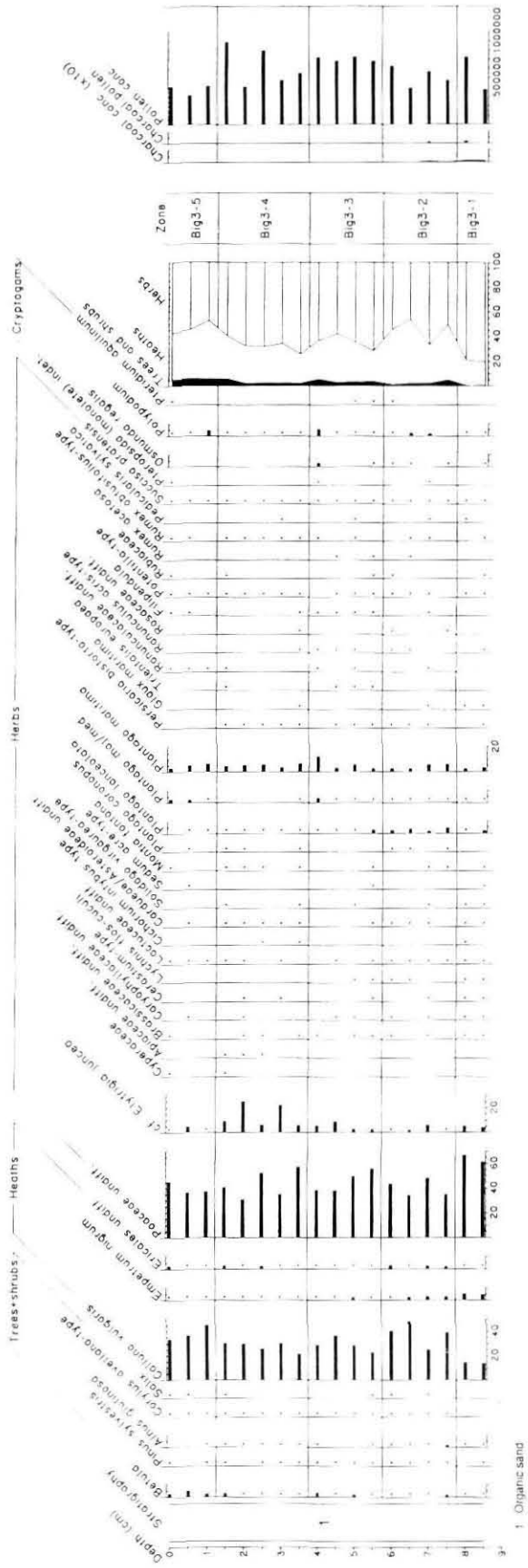
The minerogenic samples were calcareous and the preparation for palynological analysis included HCl, HF, NaOH and acetolysis techniques (Faegri & Iversen 1989). Contiguous sub-samples of 50mm thickness were prepared volumetrically by the displacement method (Bonny 1972). Tablets of *Lycopodium clavatum* were used to allow estimation of palynomorph concentration (Stockmarr 1971). Preparations were mounted unstained in silicone oil of 12,500 cSt viscosity.

Pollen type nomenclature follows the principles described in Bennett *et al* (1994) and the catalogue of Bennett (1994). Identifications of difficult taxa are discussed in Whittington & Edwards (1993). Vascular plant nomenclature follows Stace (1991).

Percentage pollen and spore data were calculated on the basis of a total land pollen (TLP) sum of at least 500 grains. Microscopic charcoal was assessed by measurement in units of 20 x 20 mm and subsequently converted to units of $cm^2\ cm^{-3}$, and to charcoal to pollen ratios (a device which can overcome problems related to variations in deposit accumulation rates). Pollen, spore and charcoal diagrams, produced with the aid of the computer programs TILIA and TILIA*GRAPH (Grimm 1991), are presented (illus 41a and b). The application of the computer program CONISS (Grimm 1987) to the data assisted in the delimitation of the local pollen assemblage zones (prefixed by the designations Big 1- and Big 3-) depicted in the diagrams.



Illus 41a
Percentage pollen and spore diagram from monolith Biggings (Big) 1 (selected taxa).



Illus 41b
Percentage Pollen and spore diagram from monolith Biggings (Big) 3 (selected taxa).

6.2.2 RESULTS AND INTERPRETATION

The soil pollen profiles from the Biggings sites are dominated by undifferentiated grasses (Poaceae undiff.), cf. *Elytrigia juncea* (sand couch) and heather (*Calluna vulgaris*) assemblages. *Achillea*-type, possibly yarrow (*Achillea millefolium*) and chickweed wintergreen (*Trientalis europaea*) are well represented at Biggings 1, with sea plantain (*Plantago maritima*) frequent in Biggings 3. Tree pollen is present in small amounts, birch (*Betula*) reaches 6% at Biggings 3 and much of it probably derived from long-distance sources (cf. Tyldesley 1973; Birnie 1984), although scrubby woodland exists in present-day Shetland (Spence 1979; Scott & Palmer 1978), and would appear to have been more extensive formerly (Jóhansen 1975, 1985; Keith-Lucas 1986; Bennett *et al* 1992; Edwards & Moss 1993; see also Pollen Analysis in section **6.3** below).

BIGGINGS 1

from beneath the Phase 3 wooden floor (JL35 - JL43)

ZONE BIGGINGS 1-1

Zone Biggings 1-1 is dominated by cf. *Elytrigia juncea* (sand couch), other Poaceae, heather (*Calluna vulgaris*) and *Achillea*-type. Mugwort (*Artemisia*-type), ribwort plantain (*Plantago lanceolata*), sea plantain (*P. maritima*) and chickweed wintergreen (*Trientalis*) are also well represented and charcoal to pollen ratios are high. The spectra would seem to indicate coastal dune grassland and either peatland or maritime heath. It is not possible to say whether grazing was definitely occurring. The persistent charcoal concentrations (with relatively high charcoal to pollen ratios) may reflect a human presence.

ZONE BIGGINGS 1-2

Zone Biggings 1-2 features an increase in heather (*Calluna*) pollen, a rise in Poaceae and falls in cf. *Elytrigia juncea* (sand couch) and yarrow (*Achillea*-type) as well as charcoal to pollen ratios (although the stratigraphy contains macroscopic charcoal in subzone 2a). This suggests some extension of heath at the expense of grassland habitats, and intentional burning may have been involved to improve browse.

ZONE BIGGINGS 1-3

Zone Biggings 1-3 has a maximum for heather (*Calluna*), a rise in cf. *Elytrigia juncea* (sand couch) and a reduction in undifferentiated grasses (Poaceae undiff.). The zone seems to indicate the continued spread of heather.

ZONE BIGGINGS 1-4

Zone Biggings 1-4 witnesses a return to the pattern observed in Biggings 1-1 with increased values of cf. *Elytrigia juncea* (sand couch) and *Achillea*-type, sea plantain (*Plantago maritima*) and charcoal. This suggests the renewed extension of dune grassland, perhaps due to a new incursion of sand to the site from the coastal zone, and a possible human presence. The uppermost spectrum coincides with a charcoal band deriving from the burnt floor.

BIGGINGS 3

from within/beside a Phase 4-5 drain (PL 151)

ZONE BIGGINGS 3-1

Basal pollen assemblage Zone Biggings 3-1 is dominated by the pollen of Poaceae, and heather (*Calluna*), crowberry (*Empetrum nigrum*) and cf. *Elytrigia juncea* (sand couch) are well in evidence. Both dune grassland and maritime heath would appear to have been locally present. The charcoal content is low here and throughout the rest of the profile.

ZONE BIGGINGS 3-2

Zone Biggings 3-2 has a sharp rise in heather (*Calluna*) and a decrease in undifferentiated grasses (Poaceae undiff.), with both taxa becoming co-dominant. Heath and grassland are indicated.

ZONE BIGGINGS 3-3

Zone Biggings 3-3 has a return to dominance of Poaceae as heather (*Calluna*) and crowberry (*Empetrum*) are reduced. The pollen of cf. *Elytrigia juncea* (sand couch) and sea plantain (*Plantago maritima*) expand slightly and dune grassland seems to have expanded at the expense of heathland.

ZONE BIGGINGS 3-4

Poaceae and cf. *Elytrigia juncea* (sand couch) are more prominent in Zone Biggings 3-4 with some fall in heather (*Calluna*). This may represent the extension of grassland.

ZONE BIGGINGS 3-5

A change toward heathland co-dominance may be indicated by the expansion in heather (*Calluna*) and the reduction of cf. *Elytrigia juncea* (sea couch) in Zone Biggings 3-5.

6.2.3 DISCUSSION AND CONCLUSIONS

The pollen zones seem to demarcate a number of convincing floristic changes in the microfossil assemblages and some pollen-stratigraphic integrity at least may be assumed. There is no marked decrease or increase in palynomorph concentration with depth; there is not an unusually high level of homogeneity of palynomorph concentrations throughout the profile; nor is there apparent over-representation of resistant spores –all tell-tale features of distorted fossil assemblages (cf Dimbleby 1985). On the other hand, the dating of environmental events within soil pollen profiles is fraught with difficulties.

In anticipation of assistance from environmental studies at the Biggings, three key questions were posed in the introduction and these are explored below.

WHAT CHRONOLOGY IS INDICATED?

The dating of the phenomena evident in the pollen diagrams is very difficult, and unlike conventional long pollen profiles from lake or peat deposits, soil profiles seldom provide strong clues as to chronology. For the Biggings, more assistance comes from radiocarbon dates and archaeology. An organic deposit below the floor of the Phase 3 dwelling-house has been C^{14} dated to 1300±80BP (I-15,699; cal AD 660-790 at the one sigma level [Stuiver and Pearson 1993, calibrated with the program CALIB 3.0.3 of Stuiver and Reimer 1993]), and this provides a *terminus ante quem* for most of the deposits of Biggings 1. A radiocarbon date for the wood of the floor produced a possibly Early Norse date (defined as pre-AD 1100 (Bigelow 1985)) of 960±55 BP (GU-1775; cal AD 980-1210 at the two sigma level).

It is possible that the events recorded in the sub-floor monolith occurred as far back as prehistoric times, and many pre-Norse monuments are known from Papa Stour, including probable Neolithic field systems and homesteads, and burnt mounds of later antiquity (RCAHMS 1946).

The variability in the pollen assemblages of Biggings 1 might indicate that relatively long timescales may be involved (Dimbleby 1985), rather than short-term ones of the order of *c* 10mm in four years (Kelso 1994). The deposit is, however, only 0.1m thick, which is not dissimilar to the 0.085m depth of Biggings 3. Both radiocarbon dates from the site provide *termini post quem* for the deposits of profile Biggings 3. It might be thought unlikely that the apparent pre-Norse profile of Biggings 1 would cover a very much greater timespan, even allowing for compaction of the site, a more varied stratigraphy, and whatever trimming may have occurred in association with construction of the Norse house.

WHAT WAS THE NATURE OF THE ENVIRONMENT WHEN THE NORSE ARRIVED?

The deposits in monolith Biggings 1 either pre-date the Phase 3 dwelling or were laid down as foundation material for house construction. There is no evidence for the latter, although it would seem reasonable to suppose that some surface levelling involving the skimming or augmenting of a pre-existing surface would have occurred. The simplest, but necessarily cautious inference, would be that the pollen in the deposits is largely of pre-Norse date. This may be supported by the radiocarbon date of cal AD 660-790 obtained from an organic deposit below the floor of the Phase 3 dwelling.

The pre-floor pollen assemblages are dominated by cf. *Elytrigia juncea* (sand couch), and it is conceivable that the Zone Biggings 1-1 sand at least was essentially part of a lyme-grass covered sand dune system; yarrow and other grasses may have formed more substantial grass swards of dry pasture, while heather and chickweed wintergreen may indicate nearby heathy pastures. The change to heather and grass domination in the pollen assemblages (Zones Big 1-2 and Big 1-3) suggests the extension of heath or heathy pasture, prior to the return of cf. *Elytrigia juncea* (sand couch), Lady's mantle (*Alchemilla*-type) and chickweed wintergreen (*Trientalis europaea*) in Zone Biggings 1-4. The pollen and spore assemblages appear to indicate the interplay between the two habitat types of maritime heath and grassland observed at the nearby marshland sites of Loch of Biggings and Biggings Field (Whittington & Edwards 1993). The lack of sedges (Cyperaceae) in the soil profiles does not suggest that they originated as organic sands brought to the sampling site from the marshy area as part of a plaggen (humanly-created soil) system (cf. Groenman-van Waateringe & Robinson 1987; Dodgshon 1988). Irrespective of this, the sampling site and its vicinity appears to have been dry and not boggy.

The lack of tree and shrub pollen is a clear indication that there was no local woodland to exploit and any building timber and firewood (if preferred to peat), apart from driftwood, would have had to be imported. The open landscape was not devoid of resources, of course, and apart from pasture on grassland and heath, there was a considerable floristic diversity (65 identifiable pollen taxa) which was presumably seen as exploitable (eg for foodstuffs, dyes, roofing, bedding and binding materials). Many of the herbaceous taxa would be characteristic weed elements in mainland agricultural contexts, but in Shetland they can also be constituents of many natural or semi-natural habitats, eg carrot family (Apiaceae), cabbage family (Brassicaceae), pink family (Caryophyllaceae), fat-hen family (Chenopodiaceae), mugwort (*Artemisia*-type), cf. dandelion group (Lactuceae), cf. aster group (Cardueae/Asteroideae), ribwort plantain (*Plantago lanceolata*), greater or hoary plantain (*P. major/media*), buttercup family (Ranunculaceae), common sorrel (*Rumex acetosa*), sheep's sorrel (*R. acetosella*) and spurrey (*Spergula*-type).

The quantities of microscopic charcoal are not great and the possibility of frequent local burning to improve grazing quality should not be over-emphasised, although there is the stratigraphic evidence for burning in subzone Biggings 1-2a. Most of the microscopic charcoal may have derived from domestic activities or from non-local browse-creation activities.

WHAT ENVIRONMENTAL OR AGRICULTURAL CHANGES OCCURRED WHILE THE NORSE WERE RESIDENT?

A later date is assumed for the pollen assemblages of profile Biggings 3 compared to Biggings 1. The major

difference from profile Biggings 1 is the relative lack of lyme-grass and yarrow pollen, perhaps signifying that former dune grassland sites had stabilized. This may have been a natural occurrence or a result or by-product of land management.

Unfortunately, and in spite of the rich suites of herbaceous pollen (floristic diversity is maintained with 69 identifiable taxa), there are no strong, unequivocal indications of cultural activity. This is not surprising for an island without a local woodland element, and an environment which would favour grazing. There are many taxa which would be consistent with, but not restricted to, areas of anthropogenic activity, as was discussed above. Cereal-type pollen is absent and even taxa characteristic of pasture such as ribwort plantain (*Plantago lanceolata*) and the buttercup family (Ranunculaceae) are not abundant. The existence of the Biggings buildings, however, clearly suggests that local agriculture was taking place.

Economically, the pollen assemblages might best be interpreted as indicating the existence of a poor pastoral landscape. It is even possible that the sands in which the pollen is preserved may be a wind-blown deposit resulting from erosion consequent upon natural or managed grazing activities. The lack of either macroscopic or microscopic charcoal in profile Biggings 3 may reflect the fact that muir burning was not an activity of great antiquity in the vicinity of the Biggings.

6.3 THE PLANT REMAINS

Camilla Dickson

This botanical report is concerned with the plant remains from the complex of buildings of Norse type. The most important and best preserved building was the Phase 3 *stofa*, centre of the royal farm on Papa Stour in the late Norse period.

Some 225 of the samples submitted for analysis contained identifiable plant remains. Both burnt and unburnt remains, mainly of wood and peat, were identified. Notes on the identifications are included in the archive. Contexts containing only conifer wood (undifferentiated) or peat are not commented upon but are included in the plant catalogue. The wood includes some conserved artefacts (section **7.5**). The four pollen analyses presented here are from two occupation levels in the main dwelling-house and from buildings H and K (section **6.2**).

6.3.1 PLANT REMAINS FROM THE TRENCHES

METHODOLOGY

Samples from occupation levels were split along bedding planes where present to examine, and extract where possible, fragile epidermal fragments. Small samples were disaggregated in water and sieved for the extraction of other plant remains; dilute sodium hydroxide was used for rare dry samples. Seeds and wood sections have been retained for the site archive. All disseminules are given as seeds in the following account; their exact nature is stated in the plant catalogue. All the wood has probably been worked but most of the damp wood shows degradation due to still active microbial activity; measurements are given for the wood in the catalogue. 'Fragments' are pieces of wood measuring only a few millimetres. Notes on some of the identifications are also available in the archive report. The nomenclature of the flowering plants follows Clapham *et al* (1987); that of the mosses follows Smith (1978). The key to the frequency of remains as listed in the text is as given in the key to the plant catalogue: rare, 1-3; occasional, 4-10, frequent; 11-50; abundant, over 50.

TRENCH E

The state of preservation in parts of Trench E was such that much of the conifer wood had probably disintegrated leaving only the conifer spike knots preserved due to their high resin content. Birch bark seems particularly resistant to decay; the bark consists of irregularly shaped pieces, the largest measures 135 x 46mm; no cut edges were observed.

PHASE 3: THE NORSE BUILDING AND OCCUPATION

(Contexts E49 and E70)

From the hearth area E70, burnt pine was noted. Gravel from E49 contained a spike knot of Scots pine wood.

PHASE 4

(Contexts E37, E40, E43, E44, E47, E68, E71, E74, E77 and E78)

In levelling beneath the wood floor in E74, a damaged spoon SF 405 (illus 100, below) and a fragment of wood, both of Scots pine, were recovered. From immediately beneath the wooden floor in E47, a peg cut from larger wood and a spike knot, both probably of pine, were identified.

Ash from a hearth E37, produced a broken piece of worked pine-wood and the largest piece of birch bark from the site, it measures 135mm x 46mm. In E43 the wood floor, a conifer spike knot was found. Related samples from E40 consist of pieces of wood and a peg cut from larger wood, all tentatively identified as Scots pine, and occasional pieces of birch bark. These, together with animal fibres, suggest that this may have been an occupation layer. No identifiable plant remains were recovered from the layers just above these horizons.

Occasional pieces of birch bark and a spike knot of Scots pine were found in E71, also part of the wood floor. The wood floor, especially samples from E78, is of particular interest as it contains the best preserved pieces of wooden flooring at the site. The wood is of Scots pine, has been cut tangentially and measures 250mm x 205mm x 20mm with part of the original squared end and part of one side intact, both cut at right angles to the parallel sides. A piece of worn wood, tentatively identified as Scots pine, measures 100mm x 25mm x 10mm, a peg of naturally tapered roundwood and a degraded spike knot, both of conifer wood and occasional pieces of birch bark to 60mm x 40mm all came from E78.

Additional small finds numbers SF 130, 132, 133, 135, 139 and 221, which are without context, are all probably from the same floor (EJ40, EJ78, EJ71 and EJ83).

From peat E68, another piece of birch bark was noted. From a burnt patch, E77, Scots pine charcoal was recorded. The plant remains from these contexts from near the top of the sequence suggest abandoned occupation with possibly a collapsed birch-bark-lined roof.

PHASE 6

(Contexts E12, E21, E36 and E66)

From peat and soil E12, occasional dry unconserved pieces of oak wood measure 2mm in thickness. A partly unrolled piece of birch bark, 42mm long, was found in sand E21.

E36 peat, contained 3mm-thick fragments of oak wood and rare unburnt peat.

PHASE 7

(Context E66)

E66, mixed soil and stones, was notable for one of the rarely preserved molluscan operculae together with occasional pieces of worked Scots pine wood, a conifer peg of roundwood and frequent birch bark.

TRENCH EJ

PHASE 2

(Context EJ21)

EJ21, peat and ash over the hearth, produced occasional wood of cf. Scots pine.

PHASE 3

(Contexts EJ14 and EJ26)

EJ14, burnt deposits, contained abundant seaweed and rare fragments of burnt peat. EJ26, of the same deposits, contained five pieces of unidentified shaped bark, each with round countersunk perforations of 1.3-1.5mm diameter (illus 103 below), this exceptionally skilled workmanship is more fully described with the other wooden artefacts (see section **7.5**). Occasional fragments of seaweed and burnt peat were also noted.

PHASE 3-4: PEAT BELOW THE WOODEN FLOOR

(Contexts EJ13 and EJ25)

From peat EJ13, birch bark was radiocarbon dated to cal AD 780-1040,. A burnt seed of each of barley (*Hordeum*) and knotgrass (*Polygonum aviculare* agg.) were identified. Occasional pieces of wood, probably of Scots pine, to 60mm long and 15mm thick with two parallel sides and a third side at right angles, could represent pieces of floor board. Burnt fragments of spruce and pine were also noted. Seaweed fragments were frequent and burnt peat was also present.

Rare weed seeds, occasional seaweed and peat fragments are recorded from EJ25.

PHASE 4

(Context EJ9)

Abundant seaweed fragments were recovered from the hearth and ashes EJ9, which was the main hearth of this dwelling-house. The contents of EJ9 are listed in table 2 and the possible uses for burnt seaweed are later discussed.

TRENCH H

PHASE 2-3: EARLIEST OCCUPATION

(Contexts H16 and H19)

Pit H16 (0.85m x 0.77m) contained occasional fragments of knotted wrack (*Ascophyllum nodosum*) and abundant pieces of heather-cottongrass (*Calluna-Eriophorum*) peat. Another pit, H19, produced abundant burnt seaweed of *Fucus* type and fragments of Scots pine charcoal. The burnt seaweed contents of the pits are considered in the discussion.

Another pit, also H16 in the south baulk contained abundant seaweed fragments (SF 167).

PHASE 3: COOKING AREA

(Contexts H13, H14, H15 and H17)

A sequence of burning levels and ovens were sampled; these are described from the lowest upwards. A working area (H17) around the oven produced occasional burnt peat fragments; above this, in burnt deposits (H15) burnt peat was frequently recorded. From loose peat (H14) over the burning, sandy soil contained occasional lumps of burnt peat and a fragment of burnt pine wood. Pieces of fire/ash slag, some globular, to 25mm diameter were also found. From around burnt stones H13, a piece each of spruce wood and cf. Scots pine wood were identified together with rare birch bark.

This area then includes evidence for an occupation, for peat and seaweed burning in rock-cut pits and for extensive peat burning around the main oven.

PHASE 4

(Contexts H7, H9 and H12)

Context H12, an occupation layer, provided a large sample, 1.3kg, for the study of insect remains (see section **6.5**). Rare seeds of arable weeds and rushes and a heather leaf were found in a 100cc sample and occasional leaves of a bog moss, *Sphagnum palustre*, were recorded from a 1cc pollen sample. The presence of *S. palustre* is of interest as it grows in a wide range of wet habitats and may have been collected for its absorbent properties. Occasional pieces of decayed Scots pine wood and birch-bark fragments with partly burnt fragments of oak wood and burnt seaweed were also noted. Animal fibres, including a woven fragment, were frequent and occasional feather fragments, only 2mm long, were noted. Although no cereal grains were preserved, 5% cereal pollen was recorded from a pollen analysis tabulated and discussed later in this report. From an overlying burnt area, (H7), conifer bark was recorded. A sample from a similar level to H12, context H9, produced occasional birch bark, one piece measures 115mm x 90mm, with peat and animal fibres.

PHASE 4-5

(Context H8)

From sand, H8, Scots pine wood was tentatively identified.

PHASE 7

This sample, SF 1, from a layer to the east and north of the hearth contains poorly preserved plant material and numerous seeds have been reduced to unidentified embryos. Plants of various habitats were represented: bugloss (*Anchusa arvensis*), a plant of sandy soil in Shetland, hemp-nettle (*Galeopsis* sp.), cf. spike-rush (cf. *Eleocharis palustris*) and nettle (*Urtica dioica*), the only record from the site. Occasional heather (*Calluna*) stems and lesser clubmoss (*Selaginella*), rare tormentil (*Potentilla erecta*) seeds, moss (*Rhytidiadelphus triquetrus*) and bog mosses (*Sphagnum* spp.) could all originate from turf from damper habitats. Rare evidence for *Salix* sp. from a willow shrub or tree is given by a bud scale. Occasional burnt peat, decayed wood and charcoal together with animal fibres all suggest an occupation layer.

TRENCH J

PHASE 1: EARLIEST OCCUPATION

(Contexts J89, J106, J110 and J116)

The plant contents of shallow, mainly unlined pits, dug into sand are listed from west to east (see table 2). The remarkable feature of pits J89, and J116, is their high proportion of burnt seaweed. All seaweed from the site appears to be burnt and of fucoid type consisting mainly of thallus fragments with occasional conceptacles (from fertile fronds) and air bladders. Some larger pieces were identified as knotted wrack (*Ascophyllum nodosum*), flat wrack (*Fucus spiralis*) and cf. *Pelvetia*, all taxa commonly found on sheltered shores. Their possible uses, and those of seaweeds from later pits are discussed later in this report. Peat, both burnt and unburnt, was occasional or frequent in J89, J106 and J110.

The two other pit samples J106 and J110, contained only rare seaweed fragments but there were frequent pieces of burnt and unburnt peat; peat in J110 measured up to 70mm x 50mm x 20mm. Peat charcoal was described by Fenton (1978, p 237) who discusses the production of peat charcoal formerly made in Shetland in broad, shallow pits. When completely ignited the peats were covered with turf and earth and cooled ready for use by smiths. It is possible that a similar process is represented by these pit fills. Wood of Scots pine was recorded from J89 and J116.

The pit fills from J89 and J110 contained remains of plants of damp habitats namely seeds of rushes (*Juncus* spp.) and megaspores of lesser clubmoss (*Selaginella selaginoides*). J110 also produced leafy shoots of heather (*Calluna*), seeds of bell heather (*Erica cinerea*) and crowberry (*Empetrum nigrum*), all suggesting a heathy habitat. These remains probably represent the remains of heathy turf and sods from damp areas which were used to cover the burning contents to prevent further combustion until needed for some industrial process.

PHASE 2: EARLIEST STRUCTURE (*DYNGJA*)

(Contexts JL84, J107, J108 and J114)

JL84 was the cut and fill of the fire-pit (J105) and J114 was perhaps a post-hole. Both features contained a high proportion of burnt seaweed

	Trench	J	J	J	J	J	J	EJ
	Context	106	116	110	114	89	84	9
	Phase	1	1	1	2	2-3	4	4
Ascophyllum nodosum	thallus		***					
Calluna vulgaris	leafy shoot			++				
Cf Calluna vulgaris	wood	**						*
Empetrum nigrum	fruitstone			*				
Erica cinerea	seed			+				
Fucoid alga	thallus	*	****	*	***	****	****	****
Fucus spiralis	thallus					*		
Gramineae	caryopsis			*				
Juncus bufonius	seed			+++		+		
Juncus sp	seed					+		
Montia fontana	seed					+		
Cf Pelvetia	thallus					*		
Pinus sylvestris	wood	*				**		
Poa annua	caryopsis		*					
Potentilla erecta	achene			*				
Quercus	wood						**	
Sagina procumbens	seed			++				
Selaginella selaginoides	megaspore			++		+++	++++	
Peat, Calluna-Eriophorum		***	*	***	+++	**	****	

Key:

+ rare	+++ frequent	* burnt	
++ occasional	++++ abundant		

Table 2
Plant remains from pits at the Biggings

(see Phase 1 contexts). Peat, was also present in J114, both burnt and unburnt, and was abundant in JL84. A 30mm-thick sample from J114 consisted of a layer of peat separated from a layer of seaweed by 10mm-deep layer of sand. Megaspores of lesser clubmoss (*Selaginella selaginoides*) were also abundant in JL84. J108, a hearth, produced a tentative identification for pine wood in the form of a spike knot. From above the hearth, J107, a floor level, fragments of a hazel (*Corylus avellana*) nut were found.

Unburnt animal fibres were abundant in JL84; similar fibres were found in many contexts. All were stained a reddish colour, presumably from the peat, and are reported on by Penelope Walton Rogers (see section **7.6**).

PHASE 3: SUMP

(Contexts J94, J95)

A large partially wood- and stone-lined pit filled with yellow peat ash and thought to have been used as a sump, was sampled. J94 and J95 produced rare burnt and unburnt remains of wild or cultivated oat (*Avena* sp.), rare burnt arable weed seeds of spurrey (*Spergula arvensis*) and chickweed (*Stellaria media*) together with wood fragments of birch (*Betula*) and Scots pine (*Pinus sylvestris*). Burnt heather-cottongrass (*Calluna-Eriophorum*) peat fragments were more frequent in the lowest of three samples. These probably result from burning peat and perhaps a wood as fuel with the addition of cereal debris. Occasional unburnt leaves of *Calluna*, frequent seeds of *Juncus* spp. and megaspores of *Selaginella* together with rare remains of *Empetrum* and *Vaccinium* sp. (blaeberry, whortleberry) suggest the use of turf perhaps to cover the peat fire and keep it alight overnight. Only rare fragments of seaweed thallus were noted.

PHASE 3: THE *STOFA* AND ITS OCCUPATION

(Contexts J42, J67 and J91)

The occupation deposit associated with the wooden floor (context J91) contained a broken artefact of Scots pine and associated pieces of worked oak and pine wood together with peat, hair and feather fragments. The wooden joists and flooring were too poorly preserved to sample. To judge from probable wood flooring found in trench JL (JL37) from this period, the floor was of Scots pine wood.

Seaweed was only found in quantity at the west end in J67, a layer of sand, which with other deposits covered one of the seaweed filled pits (J89) of the pre-house deposits.

A piece of cork, the bark of cork oak (*Quercus suber* L.), was a surprising find from the burnt floor level J42 (illus 42). It measures 75mm x 67mm x 19mm, maximum dimensions; the margin is irregular and the only indication of use is a 4mm diameter hole piercing the base diagonally. The cork oak is a native of the western Mediterranean and Portugal; its presence at such an early period in the north of Scotland must be attributed to trade. This appears to be the first archaeological occurrence in Scotland. It was imported into England from the 14th century onwards as customs records from east coast ports show (Gras 1918).

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illus 42
A piece of cork oak (*Quercus suber* L.) SF74.

PHASE 4: LATER USE OF THE STOFA AND ITS DESTRUCTION

(Contexts J56 and J64)

Probable Scots pine fragments were found in the burnt deposits of J56. It also produced a pine spoon and an oak spatula from J64. These and the other wooden artefacts are described below (see section **7.5**). Worked fragments of oak and of spruce (*Picea*), and fragments of unburnt peat, all from J64 were also recovered.

PHASE 4-5

(Context J74 and J81)

This context yielded a pine spoon, possibly derived from the destruction of the house.

At the east side of the trench J81 produced occasional pieces of birch bark up to 62mm x 40mm. The bark may have been used as an impervious layer of roofing under turf or wood as traditionally used in Scandinavia and discussed in a later section.

PHASE 5: POST-MEDIEVAL

(Contexts J14, J15, J17, J57 and J71)

The beginning of this period is marked by an earthen and flagged floor. The only associated plant remains were a few fragments of oak wood cut along the radii, each about 3mm thick from J17. Similar fragments were found slightly higher in the sequence in J15. J14 produced occasional pieces of Scots pine wood; these are 15 to 20mm thick and cut tangentially, the longest is 125mm. One edge, perhaps the end of a board, is squared, the adjacent edge was cut at an angle of 45°. It was probably incorporated into the wall.

Contexts from the use of the building produced probable stave fragments tentatively identified as Scots pine in context J71. From the same context were occasional pieces of birch bark.

A peg of conifer wood from paving J57 was recovered.

TRENCH JL

PHASE 2: POSTHOLE

(Context JL108)

The fill of a post-hole in the Phase 2 floor consisted of sparse remains, mainly of seeds. Burnt remains of the following plants were found; Six-rowed hulled barley (*Hordeum vulgare var. vulgare*), spurrey (*Spergula arvensis*), chickweed (*Stellaria media*) and dock or sorrel (*Rumex* sp). There were also seeds of common spike-rush (*Eleocharis palustris*) and lesser spearwort (*Ranunculus flammula*), plants of damp or wet places which could have grown in a poorly drained part of the cornfield. These remains could result from sieving cereal grains to remove weeds or from the use of weedy straw for kindling or flooring. It has been shown that straw and other chaff usually burns to ash leaving the more resistant seeds.

Unburnt remains include wild or cultivated oat (*Avena*), heath-grass (*Danthonia decumbens*), a leaf of crowberry (*Empetrum*), seed of bell heather (*Erica cinerea*) and grass (Gramineae), heath rush (*Juncus squarrosus*) and lesser clubmoss (*Selaginella*). The heath plants could have arrived in heathy turf which in the past had a number of uses as is later discussed.

PHASE 3: WOODEN FLOOR AND BENCH

(Contexts JL37, J51 and JL61)

Wood from the same level as the floor, JL61, is of particular interest as it represents the remains of a wooden bench (*moldbenk*, see section **8.3.1**). It is of oak (*Quercus*), dry but not conserved, and now measures 415mm x 48mm x 25mm, all maximum dimensions. Occasional fragments of seaweed were found in adherent soil. A tapered wooden peg from the bench front, broken at both ends, is now 250mm long, maximum breadth 45mm and is tentatively identified as Scots pine (*Pinus sylvestris*). Also associated with the wood floor is JL37 with rare burnt oat (*Avena*) grains and other remains including bugloss (*Anchusa arvensis*) and fragments of Scots pine wood. Seaweed fragments were frequent as were animal fibres.

Samples, JL51, from the area around the central hearth (L30) produced frequent wood remains. A fragment each of birch (*Betula*), hazel (*Corylus*), which is triangular in section and measures 35mm x 8mm, and cf. juniper (cf. *Juniperus*) were identified. Several pieces of Scots pine (*Pinus sylvestris*) wood, including a worked piece and a fragment of oak (*Quercus*) were recovered. A folded piece of birch bark, 94mm long, measures about 40mm across the ends which have been pressed together. The wood was possibly intended as fuel as partly burnt peat was also noted. Abundant animal fibres, some spun, were recovered. A molluscan operculum was identified (this and other remains of marine origin are described in the Mollusc Report **6.6**).

PHASE 4: LATER USE OF THE *STOFA* AND ITS DESTRUCTION

(Contexts JL50, JL55 PL50 and JL71)

The wooden floor or roof may be represented by decayed wood from the later burnt deposits, JL71, tentatively identified as Scots pine. The larger of two pieces measures 50mm x 25mm x 15mm, there are no cut faces. Occasional fragments of seaweed were also noted. JL71 also produced decayed cf. Pinus wood and occasional seaweed fragments. These seem to be the sparse remains of the flooring and occupation.

A large pit, JL55, was cut into the sand during this period of use. Two pegs and a large piece of irregularly shaped wood, 230mm x 145mm x 105mm maximum sizes were tentatively identified as Scots pine. At the bottom of the pit, an incomplete object of birch wood (illus 104), identified as a small ropemaker's top, is of a design still in use in the 1960s in Shetland for rope-making (Fenton 1978, 264, fig 113; see **7.5.2**). The object is 87mm long and 57mm in diameter, it is round in section with three roughly cut deep notches cut longitudinally and roughly equidistant. These were cut to take three strands of rope. A wooden peg projects 5mm from the top; it is crudely shaped from mature oak wood, measures 11mm x 15mm at the top and is tapered to roughly fit into a cavity 20mm deep. A strange addition is a small wedge of balsa wood (*Ochroma lagopus* Sw.) inserted into the top of one of the notches.

Balsa wood is native to tropical America, the West Indies and the Caribbean Islands and the question as to whether the balsa could have arrived by natural means in the Gulf Stream and North Atlantic Drift or was a later introduction is discussed in another section. Whatever its age, it must represent a reuse of the rope top as the very soft balsa wood is positioned where pressure from one of the rope strands would immediately obliterate it. It is unfortunate that conservation of the wood has rendered it unsuitable for radiocarbon dating. If it belongs to modern times balsa wood would have been available as floats for lifelines and in life preservers.

Fill JL50, from the same pit contained frequent oat (*Avena*) grains, rare seeds of scurvy grass (*Cochlearia* sp.), a mainly coastal plant, forget-me-not (*Myosotis* sp.) and yellow rattle (*Rhinanthus* sp.). Two pieces of radially split oak wood have maximum dimensions of 115mm x 62mm x 6mm and 50mm x 30mm x 10mm.

From ?PL50 (probably a separate sample of pit fill JL50) all the sparse poorly preserved remains are unburnt. They consist of oats, barley, spurrey, mayweed (*Tripleurospermum* sp.), and rat-tailed plantain (*Plantago major*) with frequent embryos of Caryophyllaceae type, probably of cornfield weeds. Heather leaves, rush and tormentil seeds, bog mosses and the mosses *Hypnum cupressiforme* and *Climacium dendroides*, the latter usually a waterside moss, together with sand and gravel which could have derived from turf from mineral soil, suggest that turf from damp habitats may be represented. The grain and weeds together with occasional burnt peat and animal fibres with rare feather fragments all confirm that this is an occupation deposit.

PHASE 5: POST-MEDIEVAL

(Context JL5)

From a deposit beneath the Gorl wall, JL5, occasional pieces of birch bark to 40mm x 20mm, wood of cf. Scots pine and a fragment of oak wood, also tentatively identified, could represent fallen roofing. The possible form of the roofing is commented on in another section.

TRENCH K

No radiocarbon dating is available for this trench which revealed another building to the west of the main dwelling-house. Birch bark has been preserved whilst other less durable plant material was probably destroyed as was suggested for Trench E; the bark remains are usually small, up to 45mm x 40mm.

PHASE 2: EARLIEST OCCUPATION

(Contexts K120 [K121] and K155)

K155, postholes, produced only occasional seaweed fragments. From K120 [K121], a peaty sandy sample over the post holes, produced frequent seaweed fragments.

PHASE 4

(Contexts K17, K72 [K44], K99 [K98] and K127)

K99 [K98] is the most species-rich layer to have been recorded from the site. All the following remains are unburnt. Occasional oat (*Avena*) grains were found with arable weed seeds of parsley piert (*Aphanes microcarpa*), Annual dead-nettles (*Lamium sect. Lamiopsis*), forget-me-not (*Myosotis arvensis*), knotgrass (*Polygonum aviculare* agg.), spiny sow-thistle (*Sonchus asper*), spurrey (*Spergula arvensis*), chickweed (*Stellaria media*) and scentless mayweed (*Tripleurospermum inodorum*). Sea mayweed (*T. maritima*), also recorded, grows in agricultural habitats in Shetland (Scott & Palmer 1987, 282) especially where land is cultivated near to the sea shore. Also identified are remains of plants representing several different habitats which are also known from fields of black oat (*Avena strigosa*) in Shetland, these are commented on in a later section. They include toad rush (*Juncus bufonius*), meadow buttercup (*Ranunculus acris*), creeping buttercup (*R. repens*) and northern dock (*Rumex longifolius*). Plants of wet places, perhaps growing in winter-wet cornfield margins, are common spike-rush (*Eleocharis palustris*), flote-grass (*Glyceria fluitans*) and lesser spearwort (*Ranunculus flammula*).

This assemblage is similar in habitat diversity, though richer in species, to that from P10 where tentatively identified oat straw was also preserved and was interpreted as straw with cornfield weeds and other vegetation used as floor covering. Heathland plants are represented by heather (*Calluna*), bell heather (*Erica cinerea*) and tormentil (*Potentilla erecta*). Mosses which can grow in grassland and heathy places are *Plagiomnium* sp., *Plagiothecium* sp. and bog mosses together with *Rhytidiadelphus triquetrus* on better soils. As has been noted from other trenches, heathland plants and mosses may have been introduced with turf. A pollen analysis from this context is later discussed. Scots pine wood, occasional seaweed fragments and burnt peat are also present. Occasional animal fibres, feather fragments and even the broken end of a finger nail all indicate an occupation layer.

Rare pieces of wood and a spike knot of Scots pine were found in K127, a wall cut.

The only botanical evidence from the middle layers of the trench was a single barley grain from peat K17.

Two birch-bark rolls measuring 45mm x 21mm and 36 x 18mm were identified from K72 [K44], a clay floor.

PHASE 4-5

(Contexts K24 [K26])

From K24 [K26], mixed stones and peat, were rare pieces of oak wood ranged from 2-4mm thick.

PHASE 5

(Contexts K8, K10 and K34)

From the upper layers of a floor, K10 produced occasional fragments of birch bark and two conifer spike knots. Birch bark from the overlying peat K8, includes a curled strip 40 x 11mm, together with a burnt fragment of Scots pine and abundant seaweed fragments. Occasional pieces of birch bark was also recovered from peat K34.

PHASES 6 AND 7

(Contexts K7 and K14)

From stones and paving K14, spruce and oak wood fragments were noted. K7, a mixed layer, just beneath earth and topsoil, contained occasional pieces of birch bark. The particular interest of trench K is that there is evidence of occupation throughout the trench (K99, K44, K25/101 and K5) and burnt seaweed from three contexts in the lower part (K155, K120, K82) and K8 near the top of the sequence although it is not certain from the complex stratigraphy if the occupation and seaweed processing took place at the same time. Birch bark was mainly found in the upper layers and, as has been noted for other trenches, may have been part of the roofing.

TRENCH L

PHASE 3: *STOFA*

(Context L30)

A hearth context, L30, produced rare pieces of birch bark to 40mm x 35mm.

PHASE 4

(Context L29)

In a stone-lined pit, L29, a peg of cf. Scots pine wood was found.

PHASE 4-5

(Contexts L41 and JL10)

From above a cloth-lined pit, L41, occasional worked wood of cf. Scots pine was identified; the largest is 87mm x 37mm x 7mm. JL10 produced fragments of Scots pine planking and a piece of oak wood measuring 92mm x 85mm x 5mm. The shorter side has a straight 10mm wide margin which has been recessed one side to 2-4mm thick.

PHASE 5: LATER OCCUPATION

(Context L32)

From pit L32 several pieces of degraded Scots pine wood, probably all worked, have a maximum size of 205mm x 56mm x 8-13mm.

PHASE 6: LATER USE OR ABANDONMENT

(Contexts L4, L14, L16)

From context L14, below the floor of the Gorl, was recovered one of the most interesting of the artefacts. a box-lid of oak wood engraved with a cross (illus 101 and discussion in **7.5**). There was also a spike knot (see comments on the woodworking) of cf. conifer wood and a fragment of oak wood. Two contexts, L4 and L16, of mixed soil and peat, contained rare pieces of birch bark, the largest measures 45mm x 25mm.

TRENCH M

CONTEXT M7

The only plant material received is from M7; it consisted of two pieces of oak wood, one is 3mm thick, the other is part of a broken artefact with maximum dimensions of 110mm x 90mm x 2-7mm thick. Fragments of three birch- bark rolls from post-medieval drain fills measure 10-25mm in length.

TRENCH P

PHASE 2: FLOOR

(Context P10)

This sample from the floor level in the Phase 2 building showed a layered structure with fine sand between organic layers consisting mainly of degraded monocotyledon epidermis. The only remaining cells seen are very degraded stomata and crescentic silica cells which, on size and shape, have been tentatively identified as the remains of oat straw. Sixty flattened empty oat grains and nine barley grains were identified on their testa characters (Dickson 1987). It is probable that cornfield weeds are represented by occasional embryos of Caryophyllaceae and Compositae and perhaps by seeds of yellow rattle (*Rhinanthus* sp.). Frequent seeds of common spike-rush (*Eleocharis palustris*) and occasional seeds of flote-grass (*Glyceria fluitans*) represent plants usually found in aquatic habitats but which can grow in damp areas especially if periodically flooded. Toad rush (*Juncus bufonius*), represented by frequent seeds, is a plant of moist, open habitats. It seems probable that cereal straw and other vegetation, perhaps from a poorly drained area of the cornfield, was strewn on the floor. A pollen analysis from this context is tabulated and discussed below.

PHASE 4-5: PIT

(Context P4)

A pit-fill in sandy soil, P4, consisted of abundant seaweed fragments.

The only record of naked six-row barley (*Hordeum vulgare* var. *nudum*) comes from SF 1358 from Trench P. This late record for naked barley is commented on in the section on cereals.

TRENCH PL (+RL)

No samples were received from beneath the wooden floor.

PHASE 4-5

(Context PL159)

From silt and ash PL159 a piece of a beech (*Fagus*) wood artefact with three straight-cut edges, originally part of a thin square or oblong piece measures 80mm x 77mm x 7mm. Rare fragments of cereal straw, tentatively identified as barley, were found in the same context.

PHASE 5: POST MEDIEVAL

(Contexts PL133, PL134 and PL152)

From PL152, a sandy drain fill, pollen of both oat type and of arable weeds could have derived from the use of straw mixed with cornfield weeds. Rare barley grains and weed seeds, all unburnt were also recovered. Unburnt leaves of moss (*Rhytidiadelphus triquetrus*) and (bog mosses) *Sphagnum* spp., seeds of tormentil (*Potentilla erecta*), violet or wild pansy (*Viola* sp.) and lesser clubmoss (*Selaginella*) could have derived from damp turf. These remains together with fragments of Scots pine charcoal, burnt peat and animal fibres are all indicative of occupation.

From PL133, a mixed soil, a small piece of possibly carved cf. Scots pine wood with a thin layer of an adherent substance, measures 42mm x 20mm x 13mm. Part of an artefact of oak wood was also found. In addition rare unburnt remains of heather, heath rush, lesser clubmoss and bog moss with seaweed and animal fibres, all suggest an occupation deposit. A piece of charred Scots pine wood was identified from a burnt deposit, PL134.

PHASE 6: THE GØRL

Part of a radially cut board of oak wood from the Gørl (Trench RL) is the largest piece of wood found at the site and measures 1.130m x 60-140mm x 14-30mm. It is considerably degraded and was probably 30mm thick. One straight edge appears to have been rounded and is preserved for 470mm of its length. There are three transverse axe or adze marks, each 40mm long and *c* 1mm deep; the only tool marks preserved on wood from the Biggings.

6.3.2 POLLEN ANALYSIS

THE SAMPLES

Four samples were analysed from occupation layers:

SF 96 P10 main dwelling-house, wooden floor levels - Phase 2

SF 77 K99 building K to west, associated with a dump - Phase 4

SF 129 H12 peat to NW- Phase 4

SF 185 PL152 drain fill - Phase 5

In rural sites in Scotland it is unusual to find pollen preserved in occupation levels as plant remains from such sources are usually carbonised. These four samples were taken from contexts with larger plant remains and other occupation debris. Their contents, excluding wood, are summarised below and given in full in the archive catalogue.

RESULTS

Abbreviations:
* burnt; r rare; oc occasional; fq frequent; ab abundant.

P10 *Barley grain (oc), oats (ab),cf. oat straw (ab), corn- field weed seeds and embryos (fq), wetland seeds including flote-grass (ab), heather (oc), *peat, animal fibres.

K99 Oats (fq), cornfield weed seeds (ab), wetland seeds including flote-grass (oc), animal fibres, feather fragments (r).

H12 Cornfield weed seeds (r), wetland seeds (r), *peat, animal fibres, feather fragments (r), insect remains (ab).

PL152 *Barley (r), *cornfield weed seeds (r), heather(r), *peat, animal fibres.

Some of the pollen will be very local, adhering to cereal grains, straw and cornfield weeds brought into the dwelling-house. Heathy turf and peat may also contribute pollen. Another source of pollen will be plants growing around the dwelling-house and from surrounding areas. To a lesser extent the regional pollen rain will be recorded and long distance transport will be responsible for the rare pine (*Pinus*), oak (*Quercus*) and beech (*Fagus*) pollen grains.

The total tree pollen is very sparse and does not exceed 4% in any sample. The Shetland Islands were only sparsely wooded in the Post-glacial period and the birch (*Betula*)/hazel (*Corylus*)/willow (*Salix*) scrub was largely cleared by Neolithic people (Jóhansen 1975; Keith-Lucas 1987; Bennett *et al* 1992). Grazing has largely prevented the re-establishment of trees ever since.

High grass pollen values, especially those of cereal size are particularly notable. The criteria used for heather (*Calluna*) values are surprisingly high especially as so little heather as twigs or leaves have been found in the farm steading. This suggests that the pollen derives from heathland which must have formed a significant part of the island's vegetation. Crowberry (*Empetrum nigrum*) contributes 25% of the pollen of PL152 (Phase 4). It is possible that heathy turf has become incorporated in the pollen sample; this could also be the origin of the 5% cinquefoil/ tormentil (*Potentilla*) pollen, seeds of tormentil (*P. erecta*) were also present.

There are high proportions of arable weed pollen in P10 (Phase 2) and K99 (Phase 4). Mayweed type (*Tripleurospermum* type) and spurrey (*Spergula arvensis*) pollen are confirmed by numerous seeds of these genera in K99. There are also high pollen values for mugwort (*Artemisia*), a plant with delicate seeds not often found fossil.

There is little to indicate plants which might have grown in waste ground around the farm steading except perhaps great plantain (*Plantago major*) the most likely species of plantain, and knotgrass (*Polygonum aviculare*).

Plants of grazed grassland are ribwort (*Plantago lanceolata*), white clover (*Trifolium repens*), moonwort (*Botrychium*) and adder's tongue (*Ophioglossum*). Whittington and Edwards' (1993) pollen analyses from two cores taken in the vicinity of the Biggings show both rich grassland and maritime heath floras.

CONCLUSIONS

These analyses are valuable for the information they give on the general vegetation around the steading. They confirm the general treelessness of the island and show that heathland and grassy pasture were present. The pollen confirms the presence of cornfield weeds in contexts such as P10 (Phase 2) where many of the plant remains were too degraded to identify.

6.3.3 WOOD

ORIGIN OF THE WOOD AND BARK

The natural scrub woodland had been largely removed by the time of the Norse settlement as has been indicated by the pollen analyses. Wood from other archaeological sites in the Northern Isles and other sparsely wooded Scottish islands has frequently proved to be largely of spruce (*Picea*) driftwood (JH Dickson 1992). The study of ocean currents suggests that it came from North America (Graham 1952). At the Biggings, however much of the wood from all periods is of Scots pine (*Pinus sylvestris*), probably not native to Shetland and very probably imported from Norway. Very little spruce wood, which could have been imported from Norway or arrived as driftwood, was found at the site.

IDENTIFIED WOOD

Oak (*Quercus*) is recorded from 21 contexts covering all periods. Oak is not thought to be native to Orkney and Shetland and is very unlikely to have arrived as driftwood. Oak grows in southern Norway and its wood was presumably imported with that of Scots pine.

Beech (*Fagus*) is not a native Scottish tree and part of an artefact, which was recorded from PL159, Phase 4-5, must have been imported. Beech is somewhat warmth-demanding and its present day distribution is limited in Norway to the south-east with an isolated locality near Bergen. Beech is widespread in southern Sweden and throughout north-west Europe.

Ash (*Fraxinus*) was tentatively identified from a Phase 3 context (JL51); ash is not native to the Northern Isles but is widely distributed on better soils on the Scottish mainland and in southern Scandinavia.

The other trees and shrubs represented are all native to the Shetland Isles although now rarely present except on small islands free from grazing and on cliffs and rocky places inaccessible to sheep. Juniper (*Juniperus*) is now rare and local in its distribution and at the present time is represented by the dwarf subspecies (*J. communis* ssp. *nana*) (Scott & Palmer 1987). Juniper was tentatively identified as roundwood from a single Phase 3 context (JL51). Hazel (*Corylus*) wood consists of a small worked piece also from Phase 3 (JL51). Birch (*Betula*) was recorded as wood fragments from only two contexts (JL51, Phase 3 and JL55, Phase 4). Birch must have been an uncommon tree in Shetland by the time of the Norse colonisation as only three place names of Norse origin commemorate the birch (*ibid*).

Willow (*Salix*) wood is tentatively identified from one context (K98, Phase 4) although rare bud scales from two other contexts (PL133, Phase 5 and K99, Phase 4) testify to its local presence. It is of interest that no bark was found adhering to any of the wood and only one piece of conifer roundwood was found. It seems probable that both oak and Scots pine were imported as debarked logs with branches stripped off. This was also the case at Tuquoy, Orkney where well preserved wood from a Norse pit, used for the dumping of byre manure and wood debris (Owen 1988), was identified by Crone (forthcoming). Most of the Tuquoy wood was of Scots pine with a little oak and ash, all presumed to have been imported. A quantity of willow branches, twigs and twine and a little birch wood were of local origin but no birch bark was found. Three of six pieces of spruce wood and three pieces of pine at Tuquoy were notable for the presence of the large boreholes of a marine bivalve mollusc.

Birch bark was scattered over the site at the Biggings and found in more than 20 contexts covering four periods. The silvery bark resembles that of *Betula pendula* (silver birch), not known as native from Orkney or Shetland and a rare tree in northern Scotland but common in southern Norway. Large pieces of bark were recovered from context E37, Phase 4. One piece showed the trunks or branches to have been up to 180mm in diameter. It seems likely that birch bark also was imported from Scandinavia.

Cork oak (*Quercus suber* L.) (illus 42 above) was represented by its corky bark from a Phase 3 context (J42 the wooden floor). It is a native of the western Mediterranean and Portugal and so must have arrived as a result of trade.

A tiny wedge in a birch artefact from trench JL (JL55, Phase 3) is of balsa wood (*Ochroma lagopus* Sw.) (illus 104), a native of tropical America including the West Indies and the Caribbean. The wood is extremely light and floats well. It is possible that it arrived via the North Atlantic Drift as driftwood. Tropical sea-beans have been recorded from Orkney and Shetland (Gunn & Dennis 1976). There is also the possibility, as discussed in the section on Trench JL, that the wood is a modern import although, from its associated artefacts, this seems unlikely.

COMMENTS ON THE USE OF WOOD

Primary conversion of wood was, in ancient wood-working, by radial splitting (Crone & Barber 1981). Most of the wood used at the Biggings had been split in this manner. It is probable that axes were used since very few saws have been found at Viking sites.

SCOTS PINE (*Pinus sylvestris*)
The main exceptions to radial splitting are the pieces of pine flooring. To judge from the few surviving pieces of boards, these have been split

tangentially although parts show radial surfaces. This suggests that they were split in parallel strips to give the maximum number of boards or planks from the trunk, as illustrated by Crone and Barber (1981). Known as flat, plain, or rift sawn, the wood cut in this way is subject to 10% shrinkage. The pieces of flooring range from 10 to 20mm in thickness, the thinner pieces are probably due to greater wear. The many other pieces of Scots pine wood, may include flooring, these with other wood of irregular shape, frequently degraded by microfaunal activity, have been listed in the archive plant catalogue.

OAK (*Quercus*)
Much of the radially split oak wood is of thin pieces, 2-7mm thick. These pieces usually incorporate one or more of the compound rays, the thick rays which form the most resistant part of the wood. These rays are about 1.5- 2mm apart and so a piece only 3mm thick may have two or three rays. It is notable that, with the exception of the engraved box lid (context L14, Phase 6), there are no cut margins on the oak wood. The wood may represent offcuts or trimmings of finely made objects as is suggested by Crone (forthcoming) for the oak pieces from the Norse pit at Tuquoy, Orkney.

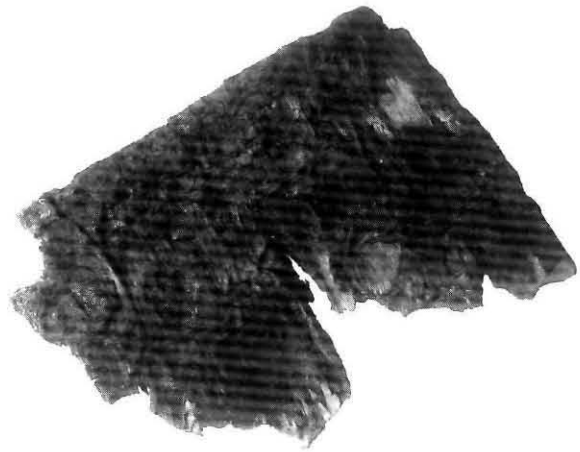
PEGS AND ROUNDWOOD
Only three of the small peg-like pieces (none is over 112mm long) are of roundwood and only one of them, of conifer wood, is definitely unshaped; no wattle was seen. As previously noted, this suggests that branches had been removed before pine and oak wood were brought to the site. The other peg-like pieces have been cut from larger wood as can be seen from the annual rings in the transverse faces.

CONIFER SPIKE KNOTS (illus 43)
Spike knots, which result from branches dying and becoming incorporated in the expanding trunk, could be mistaken for cone shaped artefacts or, when broken off, for cylindrical pegs. Thirteen knots were found and all proved to be of conifer wood, some were further identified as Scots pine. They are highly resistant to decay due to their high resin content (Jane 1970, 78) and this probably accounts for their survival, although the wood in which they were presumably incorporated has decayed away.

400

illus 43
Conifer spike knot SF 400.

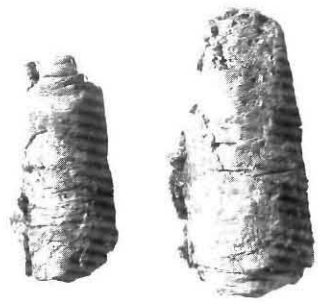
BIRCH (*Betula*) BARK
Birch bark was frequently recovered as single to occasional fragments. The largest measure 135mm x 46mm and 115 x 90mm; only one piece from E78 (Phase 4) measuring 110mm x 80mm has cut edges (illus 44), these are of two adjacent sides cut approximately at right angles. Birch bark was traditionally used in Scandinavia as rectangular overlapping pieces forming a waterproof layer under a turf roof. It was used at Birka, the Swedish trading centre, to write on because of a shortage of parchment. It was probably used here for roofing although no readily recognisable roofing was recovered from the Biggings; if this is so it is the first recorded use of birch-bark roofing material in Scotland. The usual traditional roofing in Shetland was of turf thatched with oat straw; a less satisfactory method since the straw had to be frequently replenished.



134

illus 44
Birch bark SF 134.

Birch-bark rolls were found in three contexts; only two rolls appear to be intact, those from K72 (Phase 4) measure 45mm x 21mm and 36mm x 18mm diameter and are tightly rolled (illus 45). SF 135 Trench E (unstratified) has the beginning of a roll with the end folded over 7mm. From K8 (Phase 5) a curled strip 180mm x 11mm may represent an unrolled fragment. Birch-bark rolls have been used for torches since Mesolithic times; due to the high pitch content they burn with a clear flame (Taylor 1981), but none of these show signs of burning. Another possible use is as floats for fishing nets. Rolled birch bark was found in Anglo-Scandinavian York (Hall *et al* 1983, 179)



122

illus 45
Birch-bark rolls SF 122.

6.3.4 CEREALS

It is unfortunate that oats, which were only identified as flattened empty grains, are not distinguishable on grain characters, so the presence of wild oats cannot be ruled out. The oat traditionally grown in Shetland was the bristle or black oat, (*Avena strigosa* Shreb.), introduced there during the Iron Age (eg Dickson forthcoming). Barley grains were found either as occasional flattened empty grains or as rare burnt grain. Both naked and hulled six-row barley (*Hordeum vulgare* var. *nudum* and var. *vulgare*) were recognised. In most of Britain the naked variety was largely replaced by the hulled type during the Iron Age. In Orkney however it survived through to the Pictish period (Dickson 1994). It may be assumed that the Viking farmers brought seed corn with them and may even have reintroduced the naked variety of barley. Hulled six-row barley and black oat were the traditional cereals grown until the 18th century when common oat (*Avena sativa*) was introduced to Shetland. By the beginning of this century both had been largely replaced by the common or white oat (Scott & Palmer 1987).

6.3.5 WEEDS OF ARABLE AND WASTE GROUND

Cornfield weeds found in and around buildings in archaeological excavations are usually carbonised and relate to crop processing. Weed seeds, chaff and small cereal grains discarded after sieving were frequently assigned to the fire and their burnt remains are found, especially in hearth deposits.

At the Biggings most grain and arable weed seeds were unburnt and associated with other occupation debris and not with hearths. This suggests a different reason for their presence other than crop processing. A sample from the main dwelling-house, context P10, (Phase 2) consisted of layers of plant tissue interspersed with thin layers of fine sand. After soaking for three days in water it proved possible to separate layers of plant epidermis, each less than 0.5mm in thickness, the layered material measured some 25mm thick. Rare fragments of highly degraded epidermal tissue were tentatively identified as oat straw.

Numerous poorly preserved seeds were recovered after digesting a 100ml sample in very dilute sodium hydroxide for an hour or so. Oat (*Avena*) and common spike-rush (*Eleocharis palustris*) were particularly abundant with barley (*Hordeum*), flote-grass (*Glyceria fluitans*) and frequent embryos, probably of cornfield weeds, also present. As already stated in the section on pollen analysis, this was interpreted as weedy straw with an admixture of vegetation from wetland habitats. Float-grass is particularly palatable to cattle; could this represent fodder for stalled animals? There is, however no evidence of dung or its associated insects in this or any other sample but clear evidence for human occupation from another part of the room. A more likely interpretation is that straw and other vegetation was used as litter on the floor. The small quantity of sand could have been trampled in and the layered appearance may represent fresh layers added from time to time. The floor must have remained very damp for the plant material to have been preserved. A clay floor (Phase 3) was laid on top of context P10, perhaps to combat the damp, and this impenetrable layer helped preserve the straw flooring. A similar assemblage, richer in seeds of arable weeds but lacking straw which had presumably decayed away, was recovered from building K, context 99 (Phase 4). The list of arable weeds (table 3) is mainly derived from these two samples. All of the weeds still grow in Shetland and are particularly found on light sandy soils. The analysis of pollen within these layers proved valuable in indicating the similar arable weed floras within these two samples and in adding mugwort (*Artemisia*) to the cornfield weed assemblage. The locally damp conditions have therefore preserved an unusually full record in pollen and seeds of the crops and cornfield weeds.

In Shetland plants of grassland and wet places are also found in cornfields at the present time (Scott & Palmer 1987, 13). Cornfields may adjoin swampy areas and plants from diverse areas may encroach into cornfields. An example of this has been recorded by Hinton (1991) who lists a variety of wild plant seeds and other plant fragments from samples of bristle oat (*Avena strigosa*) harvested from three such cornfields. We cannot be certain, therefore, which plants of grassy and wet places were reaped with the straw and which originate from grassy turf as discussed below.

6.3.6 PLANTS OF GRASSLAND, HEATHS AND MIRES

Plants of mainly grassy heaths and damp grassland were recorded in small quantity from nine contexts in the main dwelling-house, two contexts in Trench H and one in a Trench K building. The remains are mainly unburnt. Two

of the contexts are from pits and one from the sump in Trench J and they are discussed in that section. It was concluded that heathy and grassy turf may have been used to stop the combustion process of peat and seaweed until required to be used for industrial purposes. The remaining contexts are from occupation levels and the presumed turf may therefore have had different uses.

Of the heathland plants, heather (*Calluna*) was found, always in small amount, in nine contexts. Tormentil (*Potentilla erecta*), often found in heathy pastures on Shetland, was recorded from six contexts. Heath-grass (*Danthonia decumbens*), which has more durable seeds than most non-aquatic grasses, was found in one context.

Damp ground plants include lesser clubmoss (*Selaginella*), which grows in mossy usually damp pasture on Shetland and was recognised from ten contexts, and toad rush (*Juncus bufonius* s.l.) which grows in a number of disturbed damp ground habitats and was present in six contexts. A single seed of annual meadow-grass (*Poa annua*) was identified.

Mosses such as *Hypnum cupressiforme* (one context) and *Rhytidiadelphus triquetrus* (three contexts) could have grown in either heathy or damp grassy places. Seeds of grasses were surprisingly sparse; poorly preserved seeds were recorded from only two contexts in addition to the two identified species. Seeds of most non-aquatic grass species, however, are very delicate and do not preserve well. Another possible explanation is that intensive grazing can prevent grasses flowering although we have no direct evidence that this was so.

The presence of bog mosses especially *Sphagnum palustre* suggests very swampy ground, hardly suitable for cutting turves. Bog mosses were found in six contexts but were absent from Trench J (pits and sump). Their presence solely in occupation levels suggests that they were deliberately collected for their absorbent and antiseptic qualities.

If we assume that most of these plant remains could have originated from turves, two questions arise; what happened to the rest of the turves and how did turf remains become incorporated in the occupation debris? Grassy turves are, of course, largely held together by the roots of grasses and as these decayed away the remaining mineral part would become mixed with the general debris. Sand was, in fact recorded from all contexts and gravel of 10-20mm diameter was noted from JL50 (?PL50), JL108, PL133, and J110 (Phases 1 to 5). These contexts were all however dug down to the underlying natural sand.

The presumed turves could have derived from several uses. Turf may have been a component of the fill of the protective wall (J13) of the Phase 3 *stofa*. In Viking houses in Iceland a raised platform on either side of the hearth was built of stones and turf (Fenton 1978, 191). Fenton also suggests that "it is probably what was meant by the broad benches on which people lay around the central fire of a Shetland house about 1614-18".

Another possibility is that turf may have been used as roofing over a waterproof layer of birch bark. Until recently houses in the Faeroe Islands (which were settled by Norse farmers) "were thatched with grass turf which was laid on a foundation of birch-bark" (Jóhansen 1985, 22). If such roofing had collapsed into the occupation levels, pieces of birch bark would surely be found there and in fact such bark was found in several contexts. Living turf, which can still be seen on old roofs of outhouses in Shetland and Orkney, would originally have contained a variety of plants but these tend to disappear leaving a thatch vegetation composed almost entirely of grass as noted by Jóhansen (*ibid*). It will be appreciated that if old grassy turf roofs collapsed and the delicate grass seeds and vegetative parts decayed away, there would be very little evidence apart from the mineral soil, some of the durable birch bark pieces and perhaps rotted roof supports to interpret the former roofing. After centuries of weathering, exacerbated by the robbing of upper levels for building materials, interpretation of the presumed turves and other remains must be treated with caution.

6.3.7 SEAWEED

Burnt seaweed was found in shallow pits, 20-30cm deep, dug into clean sand. They date from at least two phases; Phase 1 pre-house from Trench J (illus 46) and from a wooden floor in Phase 4 (EJ9) (table 2) and from Phase 4-5, post-dating the wooden floor in Trench J, context P4. The most likely explanation for the presence of the seaweed is that it was burnt for its ashes. Plant ashes were in great demand in medieval Europe for detergents and for making lye, soap and glass (Singer *et al* 1956). Wood ashes were usually used for their potassium carbonate with a little sodium carbonate content. Local wood was probably in short supply and so seaweed was used producing a larger proportion of sodium salt (*ibid*). Water percolated through the burnt seaweed yielded a lye, used for cleansing and scouring. Fleeces were cleaned with the lye and its use was an essential prerequisite for dyeing wool. If lime from burnt limestone was added to the water and ashes a caustic solution would be produced

which was boiled or stirred with oil or fat to make soap. This soap could be used for fulling (cleansing and thickening) the cloth. Although we have no clear evidence that these industrial processes were carried out at the Biggings, the presence of woven and knitted cloth, suggests that wool cleaning processes must have been undertaken. Although stale urine was formerly frequently used for scouring wool in Scotland it could not form the basis for soap making.

Seaweed was also burnt for its salts for glassmaking in the Northern Isles during the 18th and 19th centuries as a replacement for barilla. The seaweed was burnt in deeper stone-lined pits, to avoid contamination; one of these pits is illustrated by Fenton (1978, 65).

Similar unlined pits to those at the Biggings, with burnt Fucoid seaweed including *Fucus vesiculosus* (Donaldson 1986), were recorded from the island of Birsay, Orkney. Hunter (1986, 152) states that "all post-date the destruction of the final Norse buildings on their respective sites" but he indicates that from the excavated evidence there is a suggestion that "some may belong to the end of the Norse period proper". If we assume that these pits were for ash production we may expect to find other medieval examples. In north-west England shallow depressions have been found at the top of or set into hillsides. These have been interpreted as potash pits and are in areas where the woollen industry goes back to the 12th and 13th centuries (Higham 1989). Wood would have been burnt but by the 16th century it was being replaced by bracken fired in stone-lined pits (Davies-Shiel 1974).

1356

illus 46
Seaweed (*Ascophyllum nodosum*) thallus and air bladders, from J116, a Phase 1 pit.

6.3.8 DISCUSSION

The environmental evidence from plant remains covering the long Norse period in Scotland has hitherto been mainly from burnt plant remains. The vegetational record from these largely unburnt floor deposits includes seeds, wood and pollen which, together with mostly burnt material from pits and hearths gives more information on the spatial use of plant resources than is possible from middens or solely burnt deposits from inside buildings. The plants represented come from a range of habitats, listed with the plants (see table 3), and indicate the resources available on this fertile island.

The exceptionally long time span, from pre-12th century to–in part of the site–the 19th century, has resulted in a complex and much compressed stratigraphy. The *stofa* was rebuilt more than once and the other buildings discussed here (represented by Trenches H and K), at least once. Abandonment and destruction layers were followed by rebuilding and new floors. The uses were not always domestic and the site of the *stofa* was at one point used for agricultural purposes. These different phases are fully discussed in chapter **5**.

The phasing is as follows:

Phase 1 = Norse - pre-12th century;

Phase 2 = Late Norse - 11th to the early 13th century;

Phase 3 = Medieval - early/middle 13th to the beginning of the 15th century;

Phase 4 = late Medieval - beginning of the 15th century to the early 17th century;

Phase 5 = post-Medieval - 17th to early-mid 19th century;

Phase 6 = modern - mid 19th century to the 1930s;

Phase 7 = recent - post 1930s to the present day.

The study of the seaweed burning and subsequent storage in pits, probably for lye making, is described in the archaeological section. Peat seems to have been used to help burn the seaweed and heathy turf with sods from damp areas employed to damp down and prevent total combustion of the seaweed ashes. Seaweed processing

TREES AND SHRUBS	
Native	
Betula (Birch)	wood
Corylus (Hazel)	nut, wood
Cf *Juniperus* (cf Juniper)	wood
Salix (Willow)	bud scale, wood
Imported	
Betula pendula (Silver Birch)	bark
Fagus (Beech)	wood
Cf *Fraxinus* (cf Ash)	wood
Pinus sylvestris (Scots Pine)	wood
Quercus suber (Cork Oak)	bark
Quercus (Oak)	wood
Imported or driftwood	
Ochroma lagopus (Balsa)5	wood
Picea (Spruce)	wood
CEREALS	
Avena sp. or spp. (Wild/Cultivated Oat)	grain
Cf *Avena* sp. or spp. (cf Wild/Cultivated Oat)	straw
Hordeum vulgare var. nudum Naked Six-row Barley)	grain
H. vulgare var. vulgare (Hulled Six-row Barley)	grain
ARABLE AND WASTE GROUND	
Anchusa arvensis (Bugloss)	nutlet
Aphanes microcarpa (Slender Parsley-piert)	achene
Galeopsis sp. (Hemp-nettle)	nutlet
Lamium Section Lamiopsis (Annual Dead-nettles)	nutlet
Montia fontana ssp. fontana (Blinks)	seed
Myosotis arvensis (Field Forget-me-not)	nutlet
Plantago major (Great Plantain)	seed
Polygonum aviculare agg. (Knotgrass)	nutlet
Poa annua (Annual Meadow-grass)	caryopsis
Rumex cf *longifolius* (cf Northern Dock)	nutlet
Sagina procumbens (Procumbent Pearlwort)	seed
Sonchus asper (Spiny Sow-thistle)	cypsela
Spergula arvensis (Spurrey)	seed
Stellaria media (Chickweed)	seed
Tripleurospermum inodorum (Scentless Mayweed)	cypsela
T. maritima (Sea Mayweed)	cypsela
Urtica dioica (Stinging Nettle)	nutlet
GRASSLAND, HEATHS AND MIRES	
Calluna vulgaris (heather)	leaf, wood
Climacium dendroides (Moss)	leaf
Danthonia decumbens (Heath grass)	caryopsis
Empetrum nigrum (Crowbetry)	fruit-stone
Erica cinerea (Bell Heather)	seed
Eriophorum vaginatum (Hare's-tail)	spindle
Hypnum cupressiforme (Moss)	leaf
Juncus articulatus type (Jointed Rush type)	seed
J. bufonius sl. (Toad Rush)	seed
J. conglomeratus or *effusus* (Compact or Soft Rush)	
J. squarrosus (Heath Rush)	seed
Potentilla erecta (Tormentil)	ahene
Ranunculus acris (Meadow Buttercup)	achene
R. lammula (Lesser Spearwort)	achene
R. repens (Creeping Buttercup)	achene
Rhytidiadelphus triquetrus (Moss)	leaf
Selaginella selaginoides (Lesser Clubmoss)	megaspore
Sphagnum palustre (Bog Moss)	leaf
Sphagnum sp. or spp. (Bog Moss)	leaf
Vaccinium sp. (Blaeberry or Whortleberry)	seed
MARSH AND WATERSIDE	
Eleocharis palustris s.s (Common Spike-rush)	nutlet
Glyceria fluitans (Flote-grass)	caryopsis
MISCELLANEOUS	
Atriplex sp. (Orache)	seed
Cf *Cardamine* sp. (cf Bitter-cresses)	seed
Carex spp. (Sedges)	nutlet
Caryophyllaceae (Chickweed family)	embryo
Cochlearia sp. (Scurvy-grass)	seed
Compositae (Daisy family)	embryo
Cruciferae (Cabbage family)	seed
Gramineae (Grasses)	caryopsis
Plagiomnium sp. (Moss)	leafy stem
Plagiothesium sp. (Moss)	leafy stem
Polygonaceae (Dock family)	embryo
Racomitrium sp. (Moss)	leafy stem
Rhinanthus sp. (Yellow-rattle)	seed
Rumex sp. (Dock)	nutlet
Viola sp. (Pansy or Violet)	seed
INTERTIDAL BROWN ALGAE	
Ascophyllum nodosum (Knotted Wrack)	bladder, conceptacle, thallus
Fucoid alga	bladder, conceptacle, thallus
Fucus spiralis (Flat Wrack)	conceptacle, thallus
Cf *Pelvetia* sp.	thallus

Table 3
Macroscopic plant remains from the Biggings.

continued through Phases 1 to 3, associated with the *stofa* and Phases 2, 4 and 5 in Trench K.

A lump of wood tar from Phase 4 Trench E, identified and reported on by Andrew Crawshaw in section **6.3.9**, indicates another industrial process either locally or, as seems more probable in this largely treeless island, imported.

The earliest occurrence of Scots pine (*Pinus sylvestris*) wood is of a few burnt fragments from Phase 1. Pine was also recorded from Phases 3 and 4 of the dwelling-house and from Trench H, Phases 2-3 to 4, and Trench K, Phases 4 and 5. Oak (*Quercus*) was used from Phases 3 to 6 in Trenches J/JL/L, in Trench H, Phase 4, and Trench K, Phases 4-5 and 6. Birch bark (*Betula pendula*), thought to represent roofing, occurred from Phases 3 to 6 in Trench J/JL/L and Phase 4 to 7 in Trench K, and Phase 4 in Trench H.

Unfortunately, apart from the pine joists and flooring of Phase 3 and the wooden artefacts described in section **7.5**, the uses of the pine are largely unknown. It seems probable that roofing supports would be of pine. Spruce (*Picea*) driftwood was used as building timber in the Neolithic period in Shetland and has been recorded from most archaeological sites near the sea in Orkney and Shetland and several Hebridean islands (Dickson, J H 1992). Its use was due to the lack of suitable straight native timber. Very little spruce wood was found at the Biggings; it seems that imported prepared timber was used instead.

Oak was used for small artefacts and probably used for a seating bench in Phase 3 of the *stofa*, but most oak wood appears to be of small offcuts. We have no other evidence that it was used structurally.

Birch bark, like the oak, was found from the time the prestigious pine floor was laid. The import of pine and oak wood with birch bark, all probably from Norway, seems to have continued for approximately 400 years. Pine flooring and birch bark roofing have not previously been recorded from Norse dwellings in Scotland. The finds of cork (Phase 3) and a beech artefact (Phase 4-5) suggest import or trade. All these are indications of wealth and the high status nature of the site in the Norse period are discussed in chapter **9**.

The local cultivation of oats (*Avena*) and barley (*Hordeum*) is indicated by layers of straw and other vegetation associated with a Phase 2 floor beneath the wooden floor of the *stofa*. This is of considerable interest as the straw consisted of a succession of layers, probably partly in response to increasing wetness. Only continuing damp and sealing by later floors has preserved this unburnt vegetation. A similar layer is suggested by frequent oat grains with seeds and pollen of cornfield weeds from Phase 4 of Trench K; this too has been interpreted as floor covering. An occupation layer from Phase 4 of Trench H has a similar pollen flora of cereals and cornfield weeds; it is possible that these have a similar origin. Such probable floor coverings are rarely recovered from early buildings in Scotland.

Surprisingly, only three grains of burnt oats were found; although cultivated oat grain cannot be distinguished from those of wild oats (*Avena fatua*) the abundance of unburnt grain from the straw sample is convincing evidence that oats were being grown as a crop from Phase 2 onwards. Occasional burnt barley grains occur in the same sample and rare grains from other phases. Three grains of hulled six-row barley (*Hordeum vulgare* var. *vulgare*) date from Phase 2 and three grains of naked six-row barley (*Hordeum vulgare* var. *nudum*) from Phase 4-5. As already stated hulled six-row barley and black oat (*Avena strigosa*) were the cereals traditionally grown in Scotland.

There is no evidence for flax (*Linum usitatissumum*), associated with most Norse sites, being grown at the Biggings although an undated pollen diagram (Whittington & Edwards, 1993) shows its past cultivation on Papa Stour less than 1km from the farm buildings.

Rare fragments of a hazel nut (*Corylus avellana*) from Phase 2 is of interest as hazel is now a very rare shrub on Shetland known from only two localities (Scott & Palmer, 1987). Other evidence for exploiting local resources are the rare finds of birch (*Betula*), hazel and cf. *Juniper* (cf. *Juniperus*) wood from a hearth in Phase 3 and the use of peat preserved in many samples. This and the pollen analyses all suggest that there were very few trees growing on the island by the time of the occupation.

Bog mosses (*Sphagnum* spp.) seem to have been collected for their absorbent properties, notably from an occupation layer, Phase 4 from Trench H. The collection of both heathy turf and sods from damp grassland is indicated by seeds from Phases 1 to 3. Turf seems to have been used to control seaweed burning and perhaps on top of birch bark for roofing. Turf seating was also formerly used in the Northern Isles (Fenton, 1978).

These observations are based on what must represent only a tiny part of the perishable plant material used on the site over many centuries. It seems clear that imports and trade played a large part in the economy. The evidence from the plant material is for continuity with no indication of change throughout the long centuries of occupation.

6.3.9 WOOD TAR/PITCH AND POSSIBLE BITUMINOUS SUBSTANCES

preliminary notes by Camilla A Dickson and identification by AJG Crawshaw and Paul Wilthew

Dr AJ Crawshaw of York University identified three lumps of wood tar or pitch from E78, a wood floor in the Phase 4 dwelling-house in Trench E, using infrared spectroscopy, as reported elsewhere in this monograph. From E40, also associated with the same floor, a layer of a shiny black substance was collected. A similar substance, about 10 mm in thickness and breaking with a conchoidal fracture was found in PL152 a drain fill in Phase 5; and in J95 a sump within the Phase 3 *stofa*. A sample from PL152 was sent to Paul Wilthew, of the National Museums of Scotland as possible lye. He reported that it could be a coal or bituminous substance.

Wood tars and pitches have been used from natural deposits since early times. These are found in many parts of the world including Britain. Such substances are used for waterproofing in buildings and ships. As heat is needed to produce a fluid substance, the thin layers from the three contexts may have been spilt during heating or have come from a burning roof that had been waterproofed with the substance.

THE SAMPLES

SAMPLE SF 78 FROM CONTEXT E77

AJG Crawshaw, York Archaeological Trust.

Three black lumps from the same sample, SF 78 from Trench E, context 77, Phase 4, about 400-700mgs each.

METHOD AND RESULTS
18mgs was broken off the smallest lump, which gave a shiny fracture. This suggested it was possibly coal tar. Almost all of it was soluble in chloroform leaving a ?fibrous residue of less than 1mg. A film of the sample was evaporated on to a NaCl plate for infra-red spectroscopy (Perkin-Elmer 257). The infra-red spectrum suggested the sample was that of a wood product. Thin Layer Chromatography on PE Sil G, with eluant 3:2 Ch_2Cl_2/n-Hexane, was also compatible with a wood product, but not a coal-derived wood product.

CONCLUSION
This is a wood-derived product. Wood products appear to have been the most usual tars and pitches in Northern Europe until the Industrial Revolution.

SAMPLE SF 182 FROM CONTEXT PL152

Paul Wilthew, Head of Analytical Research,
Royal Museum of Scotland.

SF 182 from the Biggings, Papa Stour was submitted for analysis by Camilla Dickson, School of Biological Sciences, Glasgow University. It was suggested that the sample might be a lye soap made from seaweed ashes. The sample was from context PL152 from sand associated with a Phase 5 drain. Elementary analysis and examination using low power optical microscopy was carried out. Analysis of organic components was not attempted because the sample had been stored in a plastic bag which would be likely to seriously affect any results obtained.

METHOD
The sample was analysed qualitatively by both energy dispersive x-ray fluorescence (XRF) and scanning electron microscope based energy dispersive microanalysis (SEM-EDX). No sample preparation was carried out prior to XRF analysis. For SEM-EDX, a sub-sample was taken, mounted directly on an aluminium stub using a carbon-based electrically conducting adhesive tape and coated with carbon. Surface contamination of unknown composition was present and will have affected the results obtained. This should be taken into account when interpreting the results. The sample was also examined under a low power optical microscope at x10 magnification. Further details of the analytical methods are given in the appendix.

RESULTS
(Copies of XRF and SEM-EDX spectra are available in the site archive)

Iron was the principle element detected by XRF with traces of calcium, titanium, copper, lead, bromine, strontium and iodine also detectable. The high background and large Compton scatter peaks relative to the Rayleigh scatter peak indicate a low mean atomic number material. Aluminium, phosphorus, sulphur, calcium, iron and traces of potassium and silicon were detected by SEM-EDX.

These results do not appear to support the hypothesis that the sample is a lye produced from seaweed ashes. Alkali levels were low: sodium was not detected and only a trace of potassium was found. Calcium was detected but also only at a low level. The analytical results and the appearance of the sample under a low power optical microscope suggest a hydrocarbon based material, perhaps a coal or a bituminous substance.

CONCLUSIONS
The results do not support the hypothesis that the sample examined is a lye derived from seaweed ash. They suggest that the sample is hydrocarbon based and may be a coal or a bituminous substance.

ANALYTICAL METHODS

XRF METHOD
An Oxford Instruments ED2000 system using ED2000SW Version 1.31 software was used to carry out the analysis. The analysed area was irradiated with a primary x-ray beam produced by a silver target x-ray tube run at 46KV and 1000mA using "Old XRF conditions" fixed conditions. No primary beam filter was used. The primary beam was collimated to give an elliptical irradiated area about 1.5 x 1mm. Secondary x-rays were detected using a silicon (lithium) solid state detector. The path between the sample and detector is through air which normally limits the range of detectable elements to those of atomic number 20 or above.

SEM-EDX METHOD
A Link Systems AN10000 system attached to a amscan Series □ scanning electron microscope was used to carry out the analysis. The microscope was operated at an accelerating voltage of 20KV with the object at the optimum working distance of 30mm giving a take-off angle to the silicon (lithium) detector of 30 degrees, assuming that the surface being analysed was horizontal. The detector was used with the beryllium window in place.

6.4 ANIMAL BONE FROM THE BIGGINGS

Catherine Smith

Thirty-seven fragments of animal bone were recovered from Phases 3 to 7, unfortunately all in a very poor state of preservation. It was thus not possible to take any anatomical measurements. The numbers of fragments identified from different species are shown in table 4.

6.4.1 DETAILS OF PIECES

AGE OF ANIMALS AT DEATH

A sheep/goat mandible SF 1606 (Phase 3-4), was assessed at Payne's (1973) stage E, that is, aged from two to three years in modern terms, on the basis of tooth eruption and wear pattern. A rather disintegrated pig mandible SF 239 (Phase 5), bore an erupted, unworn third molar. Payne and Bull (1982, 70) suggest using eruption dates for modern late maturing pigs as a comparison. This would suggest the age of death of the animal to have been 20 months or over. Other systems for ageing mandibular teeth based on close scrutiny of the tooth wear pattern, such as Grant (1982), were not thought to be applicable to these specimens due to their very poor state of preservation.

EVIDENCE OF BUTCHERY

A cattle atlas vertebra SF 1600 (Phase 5), bore small knife cuts near the cranial end, possibly indicating where the head of the animal had been severed from the carcass. A sheep/goat tibia from the same context may have been chopped across the shaft in a medio-lateral direction, although due to the rather eroded condition of the fragment it was not possible to be more definite. No other bones showed evidence of having been butchered. The distal epiphysis from a pig metapodial SF 1601 (Phase 5), showed the characteristic signs of having been gnawed by a rodent.

SPECIES	BONES	TEETH
Cattle	2	-
Sheep/goat	5	3
Pig	3	-
+Fish	1	-
*Large ungulate	1	-
**Small ungulate	7	-
Indeterminate mammal	14	-
Indeterminate bird	1	-
Total	34	3

+ Three possible fish scales were also found
* The large ungulate fragment was probably from cattle
** The small ungulate fragments were more likely to have come from sheep or goat

Table 4
Numbers of animal bone fragments from the Biggings identified from different species

6.4.2 DISTRIBUTION OF ANIMAL BONE

Most of the animal bone came from Phase 5 and all of it was in poor condition. The earliest fragments came from within the Phase 3 *stofa*. These included sheep/goat and a calcined fragment near the corner hearth. It is interesting to note that not a single bone was recovered from the contemporary cookhouse in Trench K. The acidic conditions which prevailed on that part of the site were generally not suitable for the preservation of bone. However, a single pig bone was found in a peaty levelling layer between building phases on the western side of the site.

In Phase 4 fragments of indeterminate mammal bones were found in contexts associated with the destruction of the Phase 3 *stofa*. Animals represented in Phase 5 are pig, sheep/goat and cattle. The small amounts of bone involved were found in pit and wall fills, in drains and on paving. In addition, probable fish scales and a burnt bird bone were found on and between paving stones in a building at the eastern side of the site. Only one calcined bone fragment was recovered from a peat levelling layer towards the west end of the site.

6.4.3 CONCLUSIONS

Apart from the Phase 3 bones, all other fragments were probably refuse which was discarded around the site, and which was disturbed and possibly reworked throughout successive phases. The bone fragments reveal that the commonest domestic livestock, cattle, pig and sheep/goat were present on the island, and that fish and possibly bird were also part of the food chain. The interesting facts are not so much what is present, but what has been lost here from the archaeological record: seasonality of animal resources, quantity and quality of animals, hunted species, butchery techniques, health of animals and evidence for inbreeding etc.

6.5 AN INSECT FAUNA FROM THE BIGGINGS

Paul C Buckland

During the course of the excavations, samples were collected for examination for plant remains (Dickson, above) and, in this process, a number of beetles, largely individual elytra, were noted (table 5). Careful sorting of one sample (SF 1082) from Trench K, produced a fauna of 21 species of Coleoptera and paraffin flotation (Coope & Osborne 1968) of a small sample (1.3kg) of the well humified, dark-brown organic silt from over the wooden floor provided a similar list of 26 taxa. From the research on a large number of sites (Buckland & Coope 1991), it is apparent that the sample size is barely enough for interpretation, but the faunas are sufficient to allow for some conclusions and comparison with other medieval rural and urban sites.

6.5.1 DISCUSSION

The taxa recovered from each sample are listed in table 5; unfortunately only samples 129 and 1082 contain sufficient to warrant any interpretation, although, since each is from a different building, a comparison is potentially useful.

The modern beetle fauna of Shetland has been collated by Bacchus (1980), although he provides no indication on which island particular species occur and the list is clearly deficient in synanthropic species, those directly associated with human activity, the fauna found in barns, byres and the unswept corners of rooms. It is not surprising therefore that four species in the list from these medieval deposits are not currently recorded in Shetland.

Cryptophagus scutellatus Newm. is the smallest of the British Cryptophagids, further recognizable by the lateral teeth on the pronotum being positioned forward of centre (Coombs & Woodroffe 1955). Like other members of the genus, it is a mould feeder, often found on mouldy hay (Larsson & Gigja 1959); it is one of the more frequent species in urban deposits in medieval York (Kenward & Allison 1994).

The occurrence of the blind, flightless, largely subterranean Colydiid beetle *Aglenus brunneus* (Gyll.) in archaeological contexts has been the subject of detailed discussion by Kenward (1975, 1976). Its natural habitat appears to have been within the deep litter accumulating on the floor of undisturbed forest, where the beetle fed on moulds or other fungi (Girling 1984). The accumulations of decaying plant debris, which surround man and his animals, provide suitable analogues to the species' natural habitat and it appears in archaeological contexts from the Roman period onwards (Kenward 1976); it is particularly frequent in Norse urban deposits in Dublin (Coope 1981) and York (Hall *et al* 1983).

The accumulations of rotting plant debris, which characterize the deposits of these settlements, provided an artificially warmed environment which allowed *A. brunneus* to proliferate and it is evident that recent attention to hygiene has contributed to its modern rarity. The species also occurs in sour grain residues (Hinton 1945) and, like many synanthropic animals, it relies upon accidental transport (Woodroffe 1967) for its dispersal. The single specimen from the Biggings may reflect a casual import, rather than an established population, although the sampling programme at the site was insufficient to ascertain this. Kenward and Allison (1994) found the beetle to be abundant on the early Christian rath site at Deer Park Farm in Antrim and the association with man may extend back into prehistory. Shetland lies far north of *A. brunneus*' natural distributional limit and its primarily forest litter habitat would, in any case, have been absent from Papa Stour.

The Endomycid *Mycetaea hirta* (Marsh.) is also largely restricted to man-made habitats, where it feeds on the fungus *Serpula (= Merulia) lacrymans* (Harde 1984), the cause of dry rot in building timbers. Its presence in relatively large numbers in sample 1082 may imply the existence of decayed timber.

The spider beetle *Tipnus unicolor* Pill. & Mitt. is also flightless and has been widely distributed by human activities. In the wild, it has been recorded from birds' nests, but it is more frequent in domestic situations, in old damp buildings, barns and stables (Palm 1959). Its earliest records in Britain are from Roman contexts (de Moulins 1990) and it is widespread in medieval and later deposits in Iceland, where it appears typical of the humanly occupied parts of farms, rather than barns and byres (Buckland *et al* 1992).

The broad range of synanthropic habitats are shared by a number of other insects in the Biggings' faunas, including the large, flightless ground beetle *Laemostenus*

Sample	1082	1084	129	261	1086	1087	1085
Context	K98	JL50	H12	K8	PL133	PL152	H1
Phase	4	4	4	5	5	5	7
Coleoptera							
Carabidae							
Notiophilus biguttatus (F.)	1	0	0	0	0	0	0
Loricera pilicornis (F.)	1	0	1	0	0	0	0
Dyschirius globosus (Hbst.)	1	0	0	0	0	0	0
Trechus obtusis Er.	0	1	1	0	0	0	0
Patrobus assimilis Chaud.	0	0	1	0	0	0	0
Calathus fuscipes (Goez.)	1	0	3	0	0	0	0
Laemostenus terricola (Hbst.)	0	0	4	1	0	1	0
Hydrophilidae							
Helophorus sp.	0	0	1	0	0	0	0
Cercyon sp.	1	0	0	0	0	0	0
Megasternum obscurum (Marsh.)	0	0	1	0	0	0	0
Leiodidae							
Catops sp.	0	0	2	0	0	3	1
Scydmaenidae							
Stenichnus collaris (Mull.)	0	1	0	0	0	0	0
Staphylinidae							
Eusphalerum (?)torquatum (Marsh.)	1	0	0	0	0	0	0
Phyllodrepa floralis (Payk.)	0	0	1	0	0	0	0
Omalium rivulare (Payk.)	0	1	1	0	0	0	0
0. excavatum Steph.	1	0	0	0	0	0	0
Xylodromus concinnus (Marsh.)	2	1	3	0	0	0	1
Anotylus rugosus (F.)	0	0	1	0	0	0	0
Lathrobium fluvipenne (Grav.)	0	0	1	0	0	0	0
Lathrobium sp.	1	0	0	0	0	0	0
Othius angustus Steph.	0	0	0	0	0	0	1
Quedius mesomelinus (Marsh.)	1	0	3	0	0	0	0
Quedius boops (Grav.)group	0	0	1	0	0	0	0
Quedius sp.	0	1	0	0	0	1	0
Tachinus signatus Grav.	0	0	1	0	0	0	0
Aleocharinae gen. indet	1	0	1	0	0	0	0
Byrrhidae							
Byrrhus sp.	0	1	0	0	0	0	0
Cryptophagidae							
Cryptophagus scutellatus Newm.	2	0	0	0	0	0	0
Cryptophagus spp.	4	0	3	0	0	1	1
Atomaria sp	1	0	0	0	0	0	2
Ootypus globosus (Waltl.)	0	0	1	0	0	0	0
Lathridiidae							
Lathridius minutus (L.) (group)	1	0	0	0	0	0	0
Colydiidae							
Algenus brunneus (Gyll.)	1	0	0	0	0	0	0
Endomycidae							
Mycetaea hirta (Marsh.)	15	0	1	0	0	0	0
Ptinidae							
Tipnus unicolor (Pill.)	16	0	2	0	2	0	2
Scarabaeidae							
Aphodius sp.	0	0	1	0	0	1	0
Curulionidae							
Notaris acridulus (L.)	1	0	0	0	0	0	0
Phytobius quadrituberculatus F.	0	0	1	0	0	0	0
Rhinoncus pericarpius (L.)	1	0	0	0	0	0	0
Micrelus ericae (Gyll.)	0	0	2	0	0	0	0
Ceutorhynchus contractus (Marsh.)	1	0	2	0	0	0	0
Hymenoptera							
Formicidae							
Myrmica sp.	0	0	1	0	0	0	0

Table 5
Insect remains from the Biggings.

terricola (Hbst.), several of the Staphylinids, the Cryptophagids and *Lathridius minutus* (L.); all are likely to have been introduced to Shetland in the dunnage of settlers or the spoiled residues of merchants (Sadler 1991), although primary introduction may long pre-date the occupation of the Biggings.

As well as the extensive study of insect faunas from Anglo-Scandinavian deposits in York (Hall *et al* 1983) and the early Christian site at Deer Park Farms in Antrim (Kenward & Allison 1994), Norse and later farms, similar to the Biggings, have been the subject of entomological research in Orkney (Sadler 1992), Iceland (Perry *et al* 1985; Amorosi *et al* 1992; Buckland *et al* 1992) and Greenland (McGovern *et al* 1983; Buckland *et al* 1994). Although much of this work has concerned midden deposits, rather than *in situ* accumulations on floors, the excavation of the post-medieval passage house at Reykholt in western Iceland, with its associated palaeoecological study (Buckland *et al* 1992), allows comparison, which, despite the biogeographical differences (Buckland 1988), is informative.

In an attempt to classify habitat types, Kenward (1982) has divided what he terms the compost community into a 'sweet' and 'foul' component; this division may also be regarded as a less and more damp, or wet, classification. Whilst there is inevitable overlap, the Reykolt data clearly show a dominance of the less damp, 'sweet' assemblage in what is demonstrably a building occupied by people, rather than their domestic animals (Buckland *et al* 1992). The Biggings faunas are similar, although the absence of sheep ectoparasites, usually evidence of wool processing activities (Buckland & Perry 1989) is noteworthy.

Slight though the faunas are, there are other significant differences from similar sites elsewhere. Two elements dominate most fossil assemblages from medieval rural archaeological samples, those derived from stored hay and those derived, secondarily from peat; although several species may be assigned to either group from the Biggings, neither is sufficiently dominant to suggest a significant presence. The spatial distribution of these elements across the floors of the Reykholt house and similar evidence from Stóraborg on the south coast of Iceland (Perry *et al* 1985; Buckland *et al*, in prep) indicates that the earth floors were covered with hay and loose peat to absorb moisture, food debris and other less savoury detritus accumulating on them. As each layer became particularly foul, more material would be spread across the surface and, where not heavily trampled, this provided suitably thermally insulated habitat for a number of synanthropic insects (Buckland *et al* 1994).

Although it is tempting to interpret the presence of the weevil *Notaris acridulus* (L.), which lives on aquatic sedges and grasses in terms of 'rushes' spread upon the floor, the deep litter characteristic of earth floors would be unlikely to be allowed to accumulate over a planked floor, as that preserved in Trench J, JL. Much of the fauna may reflect the partial decay of the structure, rather than its principal period of usage. Several of the larger, more active predatory beetles, in particular *L. terricola* and *Quedius mesomelinus* (Marsh.), frequently enter buildings in search of prey, and the slight fungal feeding element, when compared with the Reykholt faunas, could equally occur in the decaying structure.

The few phytophages, all weevils, from above the plank floor could be casual in their occurrence. *Micrelus ericae* (Gyll.) feeds on various heathers and may have been associated with roofing, either in turves with other elements of the assemblage, or in heather thatch. The remaining weevils are likely to have been associated with weedy vegetation around the house; *Phytobius quadrituberculatus* F. and *Rhinoncus pericarpius* (L.) on various species of dock and knotweed and *Ceutorhynchus contractus* (Marsh.) on Crucifers (Dieckmann 1972).

6.5.2 CONCLUSIONS

The small faunas from the Biggings samples, taken with the purely archaeological data, provide the basis for a speculative interpretaion and a comparison with entomological evidence from medieval and later farms elsewhere in the North Atlantic region. The differences in the faunas may largely reflect the relative status and constructional techniques of the buildings examined. The work serves to emphasise the need for a detailed sampling programme, closely constrained both stratigraphically and spatially. As in the Reykholt study (Buckland *et al* 1992), interpretation may be enhanced by a close, on-site working relationship between archaeologist and palaeoecologist.

6.6 MOLLUSCS

Identified by F Woodward

These fragments (table 6) of mainly gastropod species are all commonly found today around the rocky shores of Shetland. They appear in the stratigraphic record from Phase 3 onwards, but in very small numbers, reflecting the acidic burial conditions of the site. Of note among these shell fragments are those which were found closely associated with structures. The Phase 3 sample SF 1367, came from the floor of the *stofa*; the Phase 4 samples from one pit JL 55 (SF1362, 1365, 1366) and SF 1373 from the K98 dump: and the floor of the dwelling-house in Trench E, SF 140. In addition both Phase 5 samples were associated with floors of dwellings.

Although the surviving fragments are small, including the operculum which acts as a hinge allowing the animal to close the aperture of its shell (Oliver 1975, 11), these species do represent either primary food stuffs, or bait to attract fish. It is apparent from these few species, and their chance survival, that they represent a very small part of what may have been an important addition to the diet at the Biggings. There is no additional environmental evidence, except the rare fish scale (see section **6.4.2**), to indicate the importance shell fish and fish had in the diet. Documentation of the importance of the fishing industry on Shetland (see section **2.7**), is not reflected in the survival of environmental evidence from the Biggings.

SF No	Context	Phase	Description
38	M7-1 *patella* sp, 1 whelk, 1 oyster fragment		
57	E66	7	*Littorina* -Periwinkle operculum
97	L14	6	?mussel
140	E71	4	?mussel
141	K34	4	?mussel
231	K7/10	5	?mussel
235	E46	4-5	?mussel
236	J5	6	?mussel
242	J15	5	? 1 dog whelk, *Buccinium undatum*
248	E36	6	mussel pearl (illus 47)
253	J13	3	*Modiolus modiolus* - Horse mussel (illus 47)
396	K98	4	?cf.*Maya* (Gaper)
1362	JL28	4	*Littorina* operculum
1365	JL50	4cf.	*Maya*
1366	JL50	4	*Littorina* operculum
1367	JL51	3	*Littorina littorea* -Edible periwinkle operculum (illus 47)
1368	JL73	3	*Littorina*
1373	JL50	4	?mussel
1377	PL144	4-5	(?) Iceland whelk operculum (illus 47)

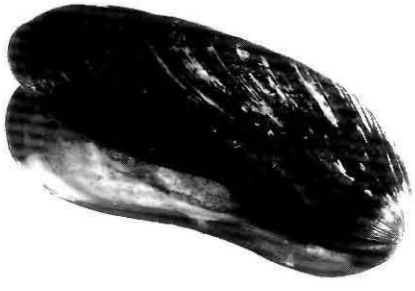
Table 6
Molluscs from the Biggings.

248

1377

253

1367



illus 47
Marine molluscs: SF 248 mussel pearl; SF 1377 Iceland whelk operculum with recent specimen to the left; SF 253 Horse mussel periostrocum and SF 1367 *Littorina littorea* operculum fossil with modern specimens below.

7

THE ARTEFACTUAL MATERIAL

7.1 INTRODUCTION

Beverley Ballin Smith

This section concerns the use of local resources for the manufacture of objects, tools, and equipment used in daily life at the settlement of the Biggings, the materials needed for the construction of the buildings, and imported goods. It also includes a range of objects and materials brought to the island which would have supplemented the limited local resources. These were things that could be described as luxuries: the means of reducing the toil and trial of everyday life and making it a little more comfortable. Represented here are a broad range of goods which were imported from as far away as England, Scandinavia and the continent of Europe. Many of these items such as ceramic, wood, textile and stone goods have survived reasonably well in the acid and disturbed conditions of the site, but perishable goods such as silk and leather have left no trace. The importance of negative data must not be neglected in an appraisal of the cultural remains of the site, as together they produce a broader picture of everyday life and the material wealth experienced at the Biggings.

In contrast with the environmental evidence, the material remains are more numerous and were found, not only horizontally widely spread across the site, but with a much more marked vertical distribution (table 7a & b). Much of this chapter is concerned with exploring the evidence phase by phase to show a changing picture through time of the various activities and contacts experienced on Papa Stour.

		Phase 1	2	2/3	3	3/4	4	4/5	5	6	7	u/s	Total
Stone tools	and samples	1	20	1	29	1	94	19	48	26	41	97	377
Metal	- slag	1	11	0	4	0	3	0	0	2	2	0	22
	- iron	0	5	2	10	0	6	3	20	0	5	7	58
	- copper alloy	0	0	0	0	0	2	0	1	2	2	4	11
	- lead	0	1	0	0	0	0	0	0	1	0	0	2
Glass		0	1	0	0	0	6	0	21	3	38	1	70
Tile		0	0	0	0	0	0	0	0	0	0	7	7
Clay pipe		0	0	0	0	0	1	2	10	1	4	0	18
Steatite		0	36	1	87	14	135	73	58	47	35	58	544
Ceramic	- coarseware	0	30	0	44	32	206	69	186	36	30	13	646
	- medieval	0	0	0	5	4	6	1	8	3	2	2	31
	- continental redwares	0	0	0	11	0	31	26	94	20	123	51	356
	- tin-glazed	0	0	0	0	0	0	1	1	6	1	2	11
	- modern	0	0	0	1	0	4	32	53	6	172	10	278
Textiles (samples)		2	2	1	9	0	43	9	25	17	18	4	130
Horn		0	0	0	0	0	4	2	3	2	0	0	11
Wooden artefacts		0	0	0	7	0	36	5	24	11	7	11	101
Totals		3	106	5	207	51	577	242	552	183	480	267	2673

Table 7a
Distribution of all artefacts from the Biggings by phase.

		Trench H	K/KA	E/EJ/EK	J/L/P/R/PL	u/s	Totals
Stone tools and samples		99	127	37	88	26	377
Metal	- slag	6	0	3	13	0	22
	- iron	5	16	3	27	7	58
	- copper alloy	2	2	0	3	4	11
	- lead	0	1	1	0	0	2
Glass		3	35	6	18	8	70
Tile		0	0	0	0	7	7
Clay pipe		1	10	3	4	0	18
Steatite		42	220	118	130	34	544
Ceramic	- coarseware	41	406	58	137	4	646
	- medieval	4	9	4	12	2	31
	- continental redwares	13	143	91	62	47	356
	- tin-glazed	0	2	6	1	2	11
	- modern	9	120	63	80	6	278
Textiles (samples)		8	32	45	45	0	130
Horn		2	2	0	7	0	11
Wooden artefacts		3	12	27	55	4	101
Totals		238	1137	465	682	151	2673

Table 7b
Distribution of all artefacts from the Biggings by trench.

7.1.1 EXPLOITATION OF LOCAL RESOURCES

Most of the material goods available to the people on Papa Stour from the earliest times would have been produced from local resources: from the rocks, the drift deposits and possibly the sea where, for example, pumice would have been washed up on the beaches and utilised. This situation would have changed very little during the earliest phases at the Biggings, where the ordinary requirements for daily life would have been met with by local resources. An example of this is the coarseware pottery (**7.3.1** below). Collection of clay and stone temper for the manufacture of vessels would have been achieved within short distances of the Biggings. Sources for these raw materials may have remained the same since prehistoric times and their exploitation used repeatedly throughout the production and use of coarse- ware at the site.

Stone was another important resource from which a variety of tools and objects could be made. Quarrying of exposed cliff faces along the island's coastline and the collection of cobbles from beaches would have been easily won resources. From these could be made ards, cobble hand tools, loomweights and line sinkers. Locally quarried stone and beach boulders were also used throughout the life of the settlement for the foundations of wooden structures, the building of hearths, drains and for the construction of stone buildings.

A useful stone, found on the Shetland mainland but not on Papa Stour, was steatite. A significant number of goods including bowls and bakestones were made from quarried steatite and are the result of local trade. Craftsmen at the quarries may have been responsible for the production of vessels and probably based their forms on examples of imported goods from Norway (see below). In addition, there are a number of smaller items such as perforated weights, spindlewhorls and lamps which may have been carved out of lumps of steatite by the inhabitants of the Biggings themselves. Steatite is soft and easy to work requiring a sharp knife and few other skills. Examples of the reuse of sherds from broken vessels show that some objects could be produced locally.

In addition to steatite, the schistose rock used for querns was also brought from elsewhere on the Mainland, but it is not known whether these objects were produced at source, as seems likely, or brought back to Papa Stour as a roughout.

Although the presence of iron and slag on the site was limited due to the acidic conditions of burial, they were present in all phases except Phase 1. It is debatable whether iron pan found at the base of podsol and peaty profiles was won locally and made into useable iron, or whether iron was brought to the island in the form of finished goods. It is possible some iron was smelted on the island but there is no evidence for this from the site,

and yet the Biggings during the medieval period may have been self-sufficient in iron tools such as small knives and nails, with larger goods imported. The twist-bit SF 1617 from the *stofa* in Phase 4, JL25, may be an imported piece, perhaps finished with a local horn handle. The amount of metalwork from the Biggings is small, and information gained from these artefacts is limited.

7.1.2 IMPORTED GOODS

Imported objects are found in the archaeological record from Phase 2 (11th century) onwards in increasing numbers and variety until the end of Phase 4 (early 17th century), after which they began to decline. Of these goods the dominant group is ceramics which reveal long distance trade around the North Sea region. Present are a range of types and forms suggesting the most available and perhaps the most desirable pottery goods of the medieval and later periods. Unglazed Paffrath ware, proto- and near-stonewares from Germany; medieval English wares; North German and south Scandinavian redwares; tin-glazed pottery and modern manufactured pieces. Of value to the Biggings inhabitants were forms that they could not produce themselves; better cooking pots, jugs, plates and bowls which were more fit for the table than their home-made pots. Most of these wares were glazed, introducing to Papa Stour coloured and decorated vessels in stark contrast to the drab and poorly formed local cooking pots.

In spite of the fact that steatite for cooking vessels, bakestones and other objects was locally available, there is good evidence that certain items were brought into the site from Scandinavia. Only the fragments of one fine vessel have been recognised as a possible import SF 1503a (see above), but of more relevance are the many pieces of finely produced bakestones identified from the Hardanger area of western Norway (**7.2.3** below). The production of bakestones has been dated to after AD 1100 by their use in Oslo, and the same type appear at the Biggings during the first quarter of the 13th century, at the beginning of Phase 3. However, fragments of local bakestones appear in the archaeological record in Phase 2, from about AD 1100. The question remains as to whether bakestones were already recognisably part of the stone tool assemblage during the early Norse period, as they were in the later Iron Age (Ballin Smith 1994, 204). Did the idea of their manufacture and use spread from the Northern Isles to Norway, to return in an improved version in the 12th century? Or was the production of bakestones purely of Scandinavian origin?

Wooden objects, on a predominantly treeless island, are important pointers to trade. Almost all the wood (except for rare examples of possible driftwood) has come from elsewhere to the island, predominantly from Norway in the form of building timber (see **6.1** and **6.3.3** above). Smaller items such as the bark vessel SF 1469, reinforce the Scandinavian contact, although the provenancing of stave-vessels (and their original contents), spoons and the ropemaker's top are unknown. It would seem likely that wooden objects could have derived from various sources, including England and Germany, accompanying other trade goods from around the North Sea area.

During Phase 4 (1400 to the early 1600s), the range of imported goods to the site increased dramatically although the actual artefact numbers involved are small. Glass makes its first *in situ* appearance as vessel glass, followed by window glass in Phase 5; clay pipes are used, and date the accompanying importation of tobacco (which did not survive in the archaeological record); small pieces of amber and jet beads are found; and coal and flint are noticed, probably arriving at the site as ballast, with coal then being used for fuel.

7.1.3 LOCAL AND IMPORTED WARES BY PHASE

Locally produced textiles, with a single piece of flint, are the only artefacts found in Phase 1. By Phase 2 wood for the construction of at least one building, the *dyngja*, was brought to the island. If the wood originated in Norway, then trade links with Scandinavia were already in place by AD 1100, if not before. There is little additional material from this early phase to suggest other cultural ties, apart from one lead spindlewhorl, which although not made on Papa Stour, links the dwellers at the Biggings to a wider Norse culture. Fragments of Paffrath ware found in later deposits may have originated in this phase, suggesting that a north-south North Sea trade via Norway was also in operation and that sea voyages to Papa Stour were almost certainly commonplace. All other artefacts in Phase 2 are locally produced including all stone and steatite goods, and the coarse pottery. There may even have been a little local iron working, and certainly pumice was collected for use.

The pattern of imported wood is seen repeated in Phase 3

with the construction of the *stofa*. Accompanying the pine and oak timber are birch bark, a bark vessel (probably also from Scandinavia, and evidence for a spatula and stave-built vessels. In addition there are bakestones from western Norway, and pottery jugs from both England and Germany. The first occurrences of continental redwares from North Germany and South Scandinavia may have begun to arrive on the island at the end of this phase. Although the evidence for imported goods is strong there is no way of knowing how many freight visits there were during this phase. The actual number of artefacts is small, suggesting they were costly items which were not bought regularly and nor were they a result of frequent trade. The bringing in of timber for building construction may have been handled by one trading visit alone, although it is suggested that contact with the world beyond Shetland may have been more regular than the evidence from the site suggests. This is the period when strong links existed with Norway, and the royal administration had its political centre at the Biggings.

In contrast to the appearance of fine imported wares, the production of coarseware varied little, and the use of local resources for stone tools and implements continued. A little iron and slag was found as well as textile fragments, suggesting that clothing, by the production of 2/1 twill, was produced locally. There is no physical evidence from the site that textiles were exported, although there is documentary evidence that wadmel was manufactured to pay taxes (*skatt*), from the north Atlantic Islands (**2.4** above).

The greatest number of different artefacts was found in Phase 4, indicating that the trading and cultural links seen in the two previous phases continued. Cargo was more varied although wood and steatite may still have been imported from Norway. Access to good quality ceramic goods became increasingly important during the 16th and 17th centuries, with north German/south Scandinavian redwares forming an important component of the imported products. Some textile in tabby weave was also imported. The evidence for more frequent trading visits may be represented in the archaeological record with the presence of ballast–large flint nodules and pieces of coal. It is also possible that steatite goods were still being used during this phase, although much of the stratigraphic evidence points to a large percentage as being residual, derived from previous phases. Once established the demand for clay pipes and tobacco continued and the former were found on the site, along with glass and some amber.

Of the locally produced goods, textiles were important. For the first time at the site there is evidence for forms of textile production other than tabby, 2/1 and 2/2 twill. Knitting was now a skill which was brought to the island and taken up by the inhabitants of the Biggings. Knitting was seen most prominently as fragments of fabric on the floor and around the hearth of the dwelling-house in Trench E in this phase. In addition there was evidence for the use of dyestuffs, madder and tannin, which were imported and used for the colouring of either the raw wool, the finished fabric or the knitted garment (see **7.6** and especially **7.6.4** below). It is possible that some of the textiles were made for export: a profitable economic product along with fish, livestock and related produce.

Locally manufactured perforated stones of sandstone and steatite, used as weights for a vertical loom, were largely discarded in Phase 4. This suggests that by Phase 4 their use had been superseded by technologically improved (and imported) horizontal looms. The use of stone as a resource for smaller artefacts was of lesser importance from Phase 4. However, its use as a building resource grew in contrast.

In spite of the availability of a wider selection of finely produced ceramic goods, by far the largest proportion of vessels were locally produced. The persistence of coarseware at the site is important and may reflect a need which was not being met by imported goods (such as the lack of suitable cooking pots). The continued use of coarseware during a time of significant changes in ceramic production and technology, may indicate that finer vessels were either prohibitively expensive, rarely available or both. Perhaps a decline in wealth (and standards) were a result of the increase in population on the island.

By Phase 5, the early 17th century, the cultural picture at the Biggings began to take on a more modern aspect and the number and amount of imported goods may have begun to rival that of locally manufactured pieces. The number of sherds of imported continental redwares, and other modern ceramics, for the first time out-numbered those of coarseware which was still being produced at the beginning of this phase. It is possible that wood, in the form of objects such as stave vessels, was still imported to the site and may also have been used for building purposes. However, pegs suggest that local skills were put to some use in the manufacture of technologically simple objects. Other imported goods included amber and jet jewellery, clay pipes, glass (for windows and vessels), and flint ballast.

Of the locally produced goods, textiles dominate the record, and may have been produced not only for local need but also as goods for export. Tabby, 2/1 and 2/2 twill were manufactured and knitting (for example, the foot covering SF 1655), was still important.

The picture gleaned from the cultural evidence from Phase 6 points to a modern but impoverished economy.

In spite of stratigraphic disturbances at the site and reuse of earlier deposits whose artefacts complicate the overall pattern, the actual numbers of artefacts at the site are reduced. Although there is a wider range of modern ceramics including tin-glazed earthenwares and machine-produced pottery their actual numbers are fewer than the previous phase. Textiles include fragments with modern chemical dyes, although some local textile may still have been produced. Wooden objects were still being brought to the site as a wooden box, whose lid (SF 426) survived, indicate. Clay pipes, glass, flint, jet and a copper-alloy token show the range of imported goods although their actual numbers are in single figures. By the end of Phase 6, about 1930, the site had lost its importance: local goods were no longer being manufactured and imported goods no longer needed.

7.1.4 DISCUSSION

From the above summary description of the economic state of the settlement at the Biggings it is obvious that the picture changed through time. Even though actual numbers of imported goods were small, it is important that they appeared at the site, were used and later discarded, to become part of the archaeological record. They tell us about the state of the living standards at the time, of technological developments that became available to those living at the Biggings, the perpetuation of long established resource management and utilisation, of the continuation of traditions and even of the cycle of events. Manufacturing skills which were not available on the island were replaced by imported goods, and possibly the occasional importation of skilled craftsmen. During the early phases at the settlement there was enough wealth to pay for goods and presumably services, but changes are noticed during the latter phases. Imported goods were still required, and were no doubt essential for the maintenance of living standards. However, actual numbers of objects became fewer, thus reflecting a general lowering of economic wealth, and finally, the reduction of people at the Biggings.

Comparison of local versus imported goods also tells us about the organisation of the settlement; the availability of manpower to exploit the local resources early in the settlement history in contrast to its latter phases; and the communications involved in supply and demand not only of goods brought into the island, but of textiles, and possibly farm and dairy produce which was exported. At present there is no way of knowing how trade links were established, whether they were a Norse development or of older origin. Throughout the settlement's history communication with the outside world was important and items for import and export are only two aspects, but tangible aspects, of a wider subject (see chapters **2** and **3** above).

Imported goods were important to the Biggings, not only as essential items for utilisation, and as supplements for local resources, but they added an extra dimension–the artistic. In great contrast to locally produced pottery, imported ceramics introduced new and varied forms, new styles, new textures, finer fabrics, and startling colour. Had more evidence been available this dimension would have also been seen in textiles (clothing), and jewellery. Through imported wares a social differentiation was also introduced, between the kitchen and the table, and between the domestic *eldhus* and the higher status *stofa*. By the end of Phase 4, the differentiation had lessened, and at the end of Phase 6 it had disappeared.

7.2 STEATITE: VESSELS, BAKESTONES AND OTHER OBJECTS

Andrea N Smith
with Simon Buttler & Birthe Weber

The steatite assemblage from the site is a large and varied one, comprising some 544 pieces weighing a total of over 51 kg. The range of object types identified includes vessels, baking plates, lamps, whorls, weights, moulds and gaming pieces as well as fragments of raw material and working waste. The tables (8-10) show the breakdown of the assemblage by type are expressed in both number of fragments and weight, because with steatite one method alone can lead to misleading conclusions. There are a high number of unidentified fragments for example, with a relatively low total weight. Conversely, the objects are over-represented by weight, as they include a number of large, very heavy pieces. However, vessel fragments represent almost half the assemblage, with bakestones the next largest single category.

The steatite from the Biggings is notable for being in unusually poor condition. Much of the steatite recovered is severely weathered and degraded which prevents detailed

TRENCH	VESSEL SHERDS	BAKE-STONES	WEIGHTS	WHORLS	LAMPS	MISC	UNID	TOTAL
E/EJ	62	9	5	3	0	7	32	118
H	19	9	2	2	0	2	8	42
J/JL/P/PL/R	63	25	7	7	0	15	13	130
K	92	41	6	11	11	16	43	220
M/S/us	15	3	0	2	0	2	12	34
TOTALS	251	87	20	25	11	42	108	544

Table 8
Total numbers of steatite fragments.

TRENCH	VESSEL SHERDS	BAKE-STONES	WEIGHTS	WHORLS	LAMPS	MISC	UNID	TOTAL
E/EJ	6756.2	251.1	2570.6	50.3	0	615.3	323.1	10566.6
H	1703.8	147.6	459.3	38.0	0	34.0	41.7	2424.4
J/JL/P/PL/R	7524.2	1899.4	2713.6	70.4	0	1375.7	630.9	14214.2
K	11601.7	3720.6	1900.7	300.7	1009.1	2056.8	866.5	21456.1
M/S/us	1838.2	333.8	0	33.1	0	98.9	0	2304.0
TOTALS	29424.1	6352.5	7644.2	492.5	1009.1	4180.7	1862.2	50965.3

Table 9
Total weight of steatite fragments in grammes.

analysis in particular vessel numbers, comparison of rim types, tooling and sooting patterns. The acid conditions of the site may be responsible for chemically weathering the steatite into its present state by removal of the carbonate portion of the rock, and for the deposition of iron-pan on many sherds. However not all the Biggings steatite is badly preserved, which suggests that some process more selective than environmental corrosion has been operating. Burning seems to be the likely process as some fragments are severely fire-damaged, usually after deposition.

	VESSEL SHERDS	BAKE-STONES	WEIGHTS	WHORLS	LAMPS	MISC	UNID
Number of fragments	47.6	17.4	3.8	4.2	0.8	7.5	18.7
Fragments by weight	57.5	12.4	15.0	0.1	2.0	8.2	4.0

Table 10
Percentages of the total steatite.

7.2.1 SOURCES OF LOCAL STEATITE

Simon Buttler

Two sources can be tentatively suggested for the Biggings material. One is the largest quarry in the Shetland at Cunningsburgh, Dunrossness, and the other is at Hillswick. There is a single tiny fragment from the rim of a small bowl of a distinctive pink stone, SF 1520 from the floor of the *stofa*. The only place this occurs naturally is on the west side of Hillswick Ness where an area of cliff exhibits traces of quarrying as seen at Cunningsburgh and Fetha-land. Hillswick is the closest known quarry to Papa Stour and it is probable that further study will show other artefacts to originate from one of the other outcrops in that area.

All the steatite (132 fragments) from the Biggings from 1978 and 1979 (with the exception of minute chips), was compared with reference specimens from quarries in Shetland. The condition of the material meant 68% (90

fragments) was unidentifiable but of the rest, 32 pieces probably came from Cunningsburgh. Three pieces from Clibberswick, Unst, are only tentatively identified, but the single piece from Hillswick, positively. The six fragments of fine grey steatite may be from Cleber Geo, Fethaland, although there are other sources of similar steatite in Shetland. It is likely that the bulk of the steatite used on Papa Stour came from Cunningsburgh.

7.2.2 VESSEL FRAGMENTS

Vessel sherds form approximately half of the total assemblage (57.5% by weight and *c* 48% by number of pieces). There are a total of 251 vessel fragments, of which 39 are rim sherds, 16 are base sherds (both flat and rounded), 141 are body sherds and 55 chunks or flakes.

Analysis of the vessel fragments proved difficult because of the condition of the steatite. Much of the steatite was badly abraded, tooling marks have been obliterated, and edges and rims battered and much altered, thus generally preventing the estimation of height and diameter. It was therefore not possible to carry out detailed analyses and estimates of minimum numbers of vessels using combinations of tooling and rim types as was done at Hedeby (Resi 1979). There were not sufficient numbers of sherds available on which all surfaces were visible and undamaged to make such an exercise valid. The quality of finish and the evidence of use were both hard to assess owing to damage caused by burning. It is probable that most vessels were cooking pots.

Typological classification of the vessel fragments is extremely difficult. The only available typology is Hamilton's based on the Jarlshof material (Hamilton 1956), which divides vessels into: small round, larger round, oval and rectangular groups. This is a highly subjective classification relying on impressions rather than measurements, and is not easy to apply to the small sherds of the Biggings.

This report has concentrated on the description of individual and refitted pieces in good condition which are representative of the types of vessels present. Represented are bowls, some large and thick, some much smaller and thinner walled; straight-sided vessels; square bowls with flared walls and small bases; and large oval or sub-rectangular dishes. Flat-based and straight-walled vessels appear to be the most common among those which could be identified. 11 bowls were identified, 11 straight-sided vessels, seven flat bases or base angles, and four larger ovoid or sub-rectangular examples.

BOWLS

Bowls are probably the most well-known type of steatite vessel and occurred in large numbers at Jarlshof, Shetland, where they were divided into two classes on the basis of size and wall thickness. Small, finely made and smoothed bowls of Class 1 (100-150mm in diameter) with thin walls (*c* 7-13mm) were found in the earlier Norse phases, but did not occur after the 10th century. Vessels of Class 2 were larger round bowls (220-510mm in diameter) with walls more than 13mm thick, and many fragments had iron rivets in place either for repair or suspension. These vessels occurred through all phases, but appeared to decrease in numbers in the later periods (Hamilton 1956, 113, fig 85).

SMALL BOWLS

Small round vessels are uncommon and are on the whole, carefully manufactured. There are only three sherds from the Biggings which may represent small round vessels. These include two rims (SF 686 Phase 6 and SF 1520a from Phase 3) and one body sherd (SF 1421 Phase 3-4), all from different vessels. Rim SF 686 is very smooth and finely finished, with a rounded rim profile and smooth surfaces inside and out. There are however, some scratches internally, possibly from cleaning the vessel by scouring with sand or some other fine abrasive. The second rim, SF 1520a, is also very well finished, with smooth surfaces, a flattened rim profile and walls only 5.5mm in thickness.

Unfortunately both rim sherds are too small to obtain a diameter. Body sherd SF 1421 also shows internal scratching, possibly from scouring. However, it should be noted that the rim sherds might also belong to a class of flat-based round vessels of medieval date found in Norway (discussed below).

LARGE BOWLS

There are nine examples of larger bowls (including SF 1339 and others) comprising at least 12 fragments from area EJ in Phase 3-4. The thickness of this vessel varied considerably from 15mm (wall) to 43mm (base). The walls were smoothed both inside and out, and although in poor condition, showed traces of patchy sooting and blackening on both sides. Although many of the bowls had been smoothed on both sides, two examples had traces of tooling on the outside. One of these, SF 1526 Phase 3, showed broad (6mm) diagonal tooling on the outside and also partly on the inside where the marks were slightly worn away on the upper part, possibly by cleaning. Two other fragments, SF 512 (Phase 4) and SF 755a/748a (illus 48), Phase 3, also had internal tooling worn away in a similar manner. One fragment, SF 1533a (Phase 6), had an unusual tooling pattern on the outside, forming large facets, but was smooth internally. One unstratified sherd, SF 716, appeared to be from the base of a bowl which had been worn very thin on one side, possibly from being repeatedly dragged across the hearth stones in and out of the fire. Fragment SF 1548 (illus 49) (Phase 3), in spite of its irregular profile, is probably the remains of a large bowl which has both internal and external vertical tooling. Where the external surface was undamaged, all of these large bowl sherds showed sooting and blackening on the outside, indicative of their function as cooking vessels.

STRAIGHT-SIDED VESSELS

These four-sided vessels are generally wide-mouthed with straight sides tapering to a flat base and a variety of squared, rounded or peaked rims. Minor differences in rim profile have been shown to have no typological or dating significance (Sharman 1990a).

This vessel type was found at Jarlshof in contexts dated to the late 11th and 12th centuries (Hamilton 1956, fig 85), and from other later Norse

Illus 48
Large steatite bowl
SF 755/748.

illus 49
Large steatite bowl SF1548, with tooling and a perforation.

and early medieval sites on Shetland such as Kebister (Sharman 1990a, 17) and Sandwick (Bigelow 1985, 107). Straight-sided vessels were also found on Orkney at Tuquoy, Westray (Sharman 1990b), but although the larger ovoid or sub-rectangular vessels were present at Pool, Sanday, on Orkney, small-based straight-sided vessels were not identified (Smith forthcoming).

SMALL SQUARE VESSELS

There are 22 examples of straight-sided, flat-based vessels from the Biggings, which include three large fragments of the base and walls of square pots with flared walls and very small bases: in two cases: SF 742 and SF 602 (both from Phase 5), less than 45mm internally. The majority of these examples display external vertical tooling, usually from a narrow chisel (2-4mm), although there is more variety in the treatment of the internal surface, with some examples smoothed, and others showing worn or smoothed vertical tooling. This vertical tooling is typical of the straight-sided vessels produced at Catpund, Shetland, and this quarry has been identified as the source of a number of the Biggings vessels including SF 634/478/649 (illus 50) (Phases 6 & 7), SF 742 and SF 602 (both from Phase 5) (Buttler & Sharman pers comm). Most fragments display some degree of external sooting, again indicating their use as cooking vessels.

OVOID OR SUB-RECTANGULAR VESSELS

It is often difficult to separate the large sub-rectangular and ovoid vessels from the smaller square ones, but two base fragments at least appear to be from larger, dish-like vessels ie SF 643 (Phase 2) (illus 50) and SF 737 (Phase 4). Rim and wall fragments are harder to identify, as the flaring walls of the relatively tall square pots may reach similar proportions to those of larger, but shallower, sub-rectangular vessels. One ambiguous example is SF 604 (Phase 4) which consists of the rim and two corners of a square or sub-rectangular vessel. This has an unusual tooling pattern on the outside, with groups of alternating diagonals below the rim, changing to top right/bottom left on the remainder of the vessel wall. The outside is lightly sooted and the inside wall smooth and clean.

One example definitely from a sub-rectangular vessel is SF 1465 (Phase 3-4). This vessel is made up of five joining fragments from trenches EJ and K, forming the base and two walls of a vessel at least 230mm long and 205mm high. The external surface is very heavily burnt and smoothed with no tooling visible, but inside the tooling is very irregular and changes direction from vertical to diagonal from the wall to the base (a salutary warning on identifying individual vessels from tooling marks). The inside also has patchy burning on the walls just above the base. A very similar vessel was found at Pool, Orkney, where it was suggested that the very rough tooling on these large dishes, rather than being a sign of poor quality or slipshod workmanship, may have been advantageous if used for roasting dishes for large pieces of meat or fowl, in the same way that many present day steak pans and grills have corrugations (Smith forthcoming).

OTHER VESSELS

FLOWERPOT FORM

Mention should be made of one small base angle sherd of flowerpot

Illus 50
Flat-bottomed, oval/ sub-rectangular steatite vessel SF 643.

illus 51
Steatite vessel sherd SF 1503a, with small base-angle.

form SF 1503a (illus 51), of unusual type, from a very thin-walled smooth vessel shaped rather like a flowerpot, with round base and straight walls found in Phase 6. This may be an example of a type found at Borgund, Norway, and classified by Lossius as Type D and dated from the 16th to the 19th centuries (Lossius 1977, fig 4; Buttler 1984, 51). It is also possible that the rim sherds discussed under Small Bowls (SF 686, SF 1520a) belong to this type. It is probable that SF 1503a is an import, although there is a small possibility that it is a Shetland copy of a Norwegian type (Buttler 1991, 231).

HANDLED VESSELS

There is only one fragment of a handled vessel, SF 511 (illus 64 below). The handle is a small, finely worked piece with incised decoration, found on the floor of the Phase 2 *stofa*. Buttler's study of handled vessels from Jarlshof showed that they were limited to the 9th and 10th centuries (1984, 77). These appear to be somewhat cruder than the Papa Stour example, but of similar form, fairly short, and rounded in cross-section with a flattened upper surface.

A handle with incised decoration was found at the Norse site of Underhoull, Unst, and dated to the 10th or 11th century on the grounds of Norwegian parallels, but no details were given of these examples (Small 1967, 246). Handled vessels certainly are known in Norway, but as handles occurred on all shapes of vessel little account has been taken of them in classification, so typological dating is not well developed. However, some sources indicate that in Norway ornamented handles became common in the Middle Ages, so that this piece could be medieval in date, or indeed much later (Buttler 1984, 43, 48).

VESSEL ATTACHMENTS: IRON HANDLES, RIVETS AND PERFORATIONS

There is very little evidence of the attachment of metal suspension loops or handles amongst this material. One rim, SF 1525b, from an unstratified context, has a small pecked pit below the rim, with a matching pared area on the inside, which may represent an attempt at secondary attachment of a suspension ring, or possibly for a repair.

A second rather ambiguous piece, SF 1522b (Phase 5), may be rim or a reworked piece, as the 'rim' surface is unusually smooth and clean. This has two perforations, both *c* 20mm below the edge, one on a broken edge. There are no traces of any iron corrosion products, and it is unclear whether the perforations were for suspension, repair or some other purpose. One sherd, SF 752 (also Phase 5), a large body sherd from a straight-sided vessel, did have the stump of an iron rivet or strap in position. The close proximity of the rivet to a broken edge may indicate that this was for a repair.

One base corner fragment, SF 603 (Phase 4), from a straight-sided vessel, has two perforations on what appeared to be the base. These were 6mm in diameter and spaced 51mm apart, one on a broken edge, and both some 10-15mm away from a break along the long axis of the vessel. Again, there is no sign of metal corrosion, but this does not rule out the possibility that these were used for metal binding after the vessel fractured. It may also be possible that they relate to the function of the vessel as a strainer.

7.2.3 BAKESTONES

Birthe Weber
with additional material by Andrea Smith

The purpose of this report is to discuss the provenance of the steatite used in the manufacture of the bakestones found at the Biggings, Papa Stour. It is claimed that a portion of the bakestones are of Norwegian origin, quarried in the Hatlestrand county in the Hardanger area on the west coast of Norway.

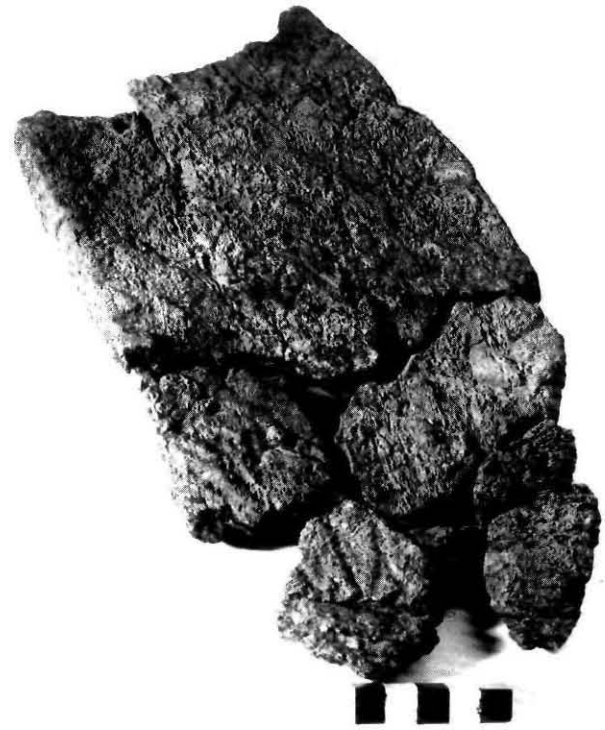
544 artefacts made from steatite or soapstone have been recorded from these excavations (see above). Within this total, 87 fragments of bakestone have been noted (table 11).

DESCRIPTION

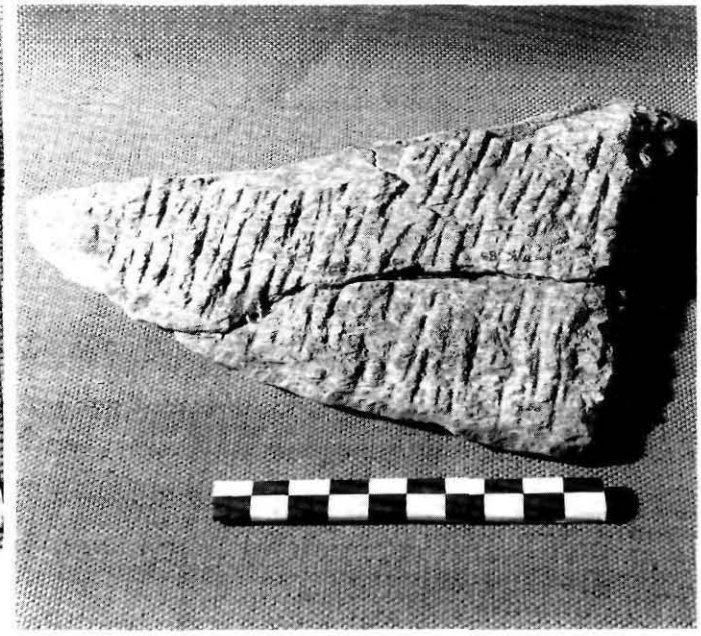
Bakestones are round (300-600mm diameter) level plates of varying thickness (5-25mm), with characteristic grooves (toolmarks) on the surface of both sides (illus 52). These grooves do not interfere with the use of the bakestone, as can be seen in experiments with copies.

The bakestones from the Biggings are divided into two groups according to the material used. One group is made from rather homogenous, heavy steatite, of the kind used in cooking pots, found locally on Shetland. These bakestones are up to 25mm in thickness (illus 53) and were rectangular or sub-rectangular in shape. Bakestones belonging to the second group are differentiated mainly by the schistose quality of the stone which can be observed particularly in fractures.

The main minerals in this latter group are talc, chlorite and amphibole. Having grown parallel to the schistosity, but with only slight preferred orientation in the plane, the long, thin needles of amphibole make a tough grid that prevents the rock from cross-fracturing, and as the three minerals have quite similar thermal expansion characteristics, their association allows the thin bakestones to endure alternating heating and cooling. Mineralogical variations found could justify the



illus 53
Fragments of a bakestone of local steatite, SF 749.



illus 52
Fragments of imported steatite bakestone, SF 480 and SF 1435/1436.

SF No	Trench	Phase	Type	No of frags	Weight (grammes)	Remarks
469	E77	4	Norwegian	1	20.8	reworked as a whorl
472	K26	4-5	Hardanger	1	63.8	
473	E49	3	Hardanger	1	45.4	
474	H12	4	Hardanger	4	32.7	
475	-	-	Hardanger	2	200.3	
476	K8	5	Hardanger	1	734.2	rm/ww
477	K86	3-4	Hardanger	1	122.6	? local
478	P6	6	Hardanger	1	?	?joins vessel SF 634
479	K138	2	Hardanger	1	1035.9	? local
480	-	-	Hardanger	1	133.5	
481	K8	5	Norsk/Shetland	1	72.8	
482	H12	4	Norsk/Shetland	1	12.9	
483	H12	4	Hardanger	2	67.6	
484	H12	4	Hardanger	1	23.8	
485			Hardanger	1	22.8	reworked as a whorl
486	JL5	6	Hardanger	1	62.9	reworked as a disk
487	JL3I	2+3	Hardanger	1	49.4	
504	K7	7	Norwegian	1	3.6	
507	K8	5	Norwegian	1	5.0	
596	P12	5	uncertain	1	26.4	? Norwegian
597	P2	6-7	Hardanger	1	3.3	
629	P5	4-5	uncertain	1	19.5	
730	J95	2+3	local	1	19.0	
731	J42	3	local	2	89.7	joins SF 1513
749	J67	3	local - square	1	?	
756	K33	4	local	1	111.1	
757	K33	4	Hardanger	1	3.5	
1000	K98	4	Norwegian	1	1.0	
1427	EJ17	3	local	2	50.4	
1433	K26	4-5	Kviteberg Hardanger	9	579.2	
1434	K98	4	possibly Hardanger	4	786.7	
1435	K50	4	possibly Hardanger	1	442.7	Norwegian joins SF 1436
1436	K44	4	possibly Hardanger	1	-	Norwegian, joins SF 1435
1437	E6	7	possibly Hardanger	1	2.6	Norwegian
1450	E6	7	Hardanger	1	223.0	? vessel body
1451	EJ13	3-4	Norwegian	1	26.9	
1461	EJ13	3-4	local	1	6.8	
1492	E60	3	Norwegian	1	6.3	
1493	E69	4	local	1	115.2	
1497	J84	4	local	1	415.0	
1500	J81	4-5	Hardanger	1	4.9	
1502	J93	4	local	1	95.2	
1511	J36	-	local	1	?	
1513	J42	3	local	1	-	joins SF 731
1514	J48	5	local	1	?	
1518	J58	5	Hardanger	1	2.1	
1519	J52	3	local	6	53.1	
1521	J87	4	Hardanger	1	26.4	
1523	J1	7	Hardanger	2	59.5	
1527	Hi14	2	Hardanger	1	11.5	
1535	K26	4-5	local	1	74.8	
1540	K20	5	local	2	229.9	
1543	K8	5	Hardanger	3	150.9	
1549	K124	3	local	2	490.4	
1553	K75	4	Norwegian	1	3.3	
1555	K98	4	Hardanger	5	55.8	
1558	K98	4	local	2	289.9	
1566	K138	2	local	1	?	

Table 11
Bakestones from the Biggings.

illus 54
The bakestone quarry in the Kviteberg Hill with discarded bakestones lying around.

use of rock names such as schistose soapstone or talcose greenschists for the material under discussion (J Naterstad pers comm).

It is this last group, supposedly brought to Shetland from the west coast of Norway, with which this report is mainly concerned. Schistose rock does occur in Shetland (D Dixon pers comm), but is not known to have been exploited for this purpose.

THE MANUFACTURE OF BAKESTONES

After surveying the quarries in Hatlestrand, Hardanger, the activities in the area can be described as 'industrial'. On and adjacent to the Kviteberg Hill, some 29 large and small quarries are found in a geological zone exposing a particular schistose soapstone, so well suited for the production of bakestones (Naterstad 1984; Nerhus 1989; Weber 1984), which has not yet been recorded elsewhere in Norway.

In all the quarries in the Kviteberg area the working began on the rock surface, but some of the largest quarries are now to be seen as enormous caves. These and the very substantial spoil heaps tell of a production which deserves to be considered as an industrial undertaking. Characteristic semi-circular, concave or 'negative' columns show where bakestones were produced, chiselled out one by one (illus 54). No tools have been found, but after studying broken bakestones in various stages of manufacture, the procedure can be explained.

The schistose soapstone is easy to split. The first levelling of the 'raw' bakestone to a thickness of *c* 40mm, was probably executed with a hammer and chisel. The additional thinning down of the stone to 7-10mm was achieved by the use of more delicate tools. The surface finishing was probably produced by a fork-like tool with one, or more often, two 'teeth', as the grooves often seem to be parallel with a marked offset where the tool was thrust into the stone. This tool may have been like the '*meddrag*', a carpenter's marking gauge; a tool used in joining logs when building a log house (illus 55). The local term *rive heller* (flags), probably points to the use of this tool, as *rive* means tear or grate. To obtain an even surface and a bakestone as thin as possible, the implement was drawn over the bakestone in a crisscross pattern, thus creating the grooves we see. Consequently the bakestones of the best quality have an appearance of professional craftsmanship (illus 56).

Only bakestones were manufactured in the quarries in Hatlestrand and it should be noted that the schistose soapstone is quite unfit for the manufacture of cooking pots. The transportation of the finished products was probably mostly by boat as the quarries are situated near the Kviteberg lake. The outlet of a small river is no more than 400m from this lake, thus making transport easy.

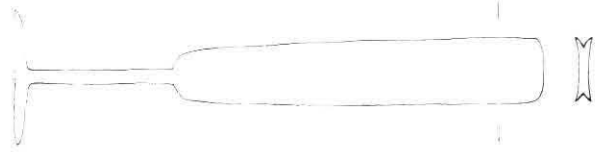
LOCAL PRODUCTION ON SHETLAND

Bakestones of steatite proper are supposed to be of a local production and manufactured in quarries where cooking pots were also produced. Grooves are also seen on the surface of these (illus 53) but they were probably only levelled with a hammer and chisel. The locally made bakestones found in Shetland may have been a by-product of the cooking-pot industry as in Norway. Photographs from the Cunningsburgh Quarry show the same 'negative' columns in the rock. The extent of production is not known, consequently it is not possible at present to evaluate the importance of one product against the other.

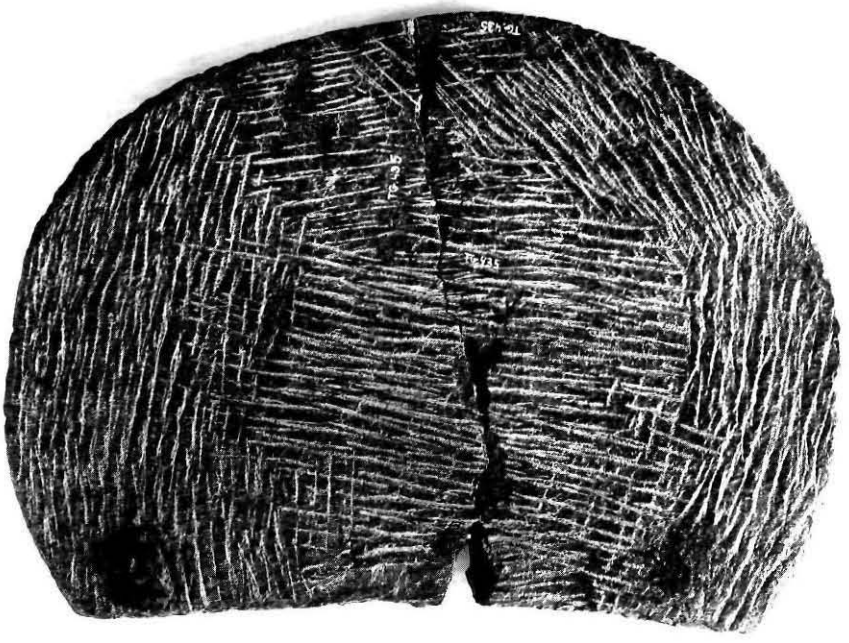
IDENTIFYING THE TWO GROUPS

The method used here for separating the two groups of bakestones is by a simple examination of the fragments and looking for the characteristic elements of both groups. There are always doubtful examples which could be settled by geological methods, but these are time consuming, complicated and expensive. The second group of bakestones (Norweg- ian), with which we are concerned, are manufactured from a very distinct and identifiable stone, the simple method of examination is under the circumstances justified.

Bakestones from the excavation have now been examined on several occasions; some samples were analysed in Oslo. One sample, SF 474 (from K26 Phase 4-5), contained four fragments belonging to two different bakestones. One may argue that this could be an exception, as the fragments of one broken bakestone would most likely be found together. Cases are known where pieces of the same object, particularly pottery, have been found far from each other in different layers, and belonging to different periods (Reed 1992, 89ff; Molaug 1987, 299ff). A broken bakestone would consist of many pieces, and very seldom is a whole (broken) bakestone found in one spot.



illus 55
An example of an old 'Meddrag', a carpenter's marking gauge from Sunnhordland Museum, Norway.



illus 56
A steatite bakestone of the best quality from Tønsberg, Norway.

No effort has been made to piece together fragments, as experience has shown that this is possible only in rare cases. Consequently, there is no way of knowing the real quantity of bakestones at the Biggings. As the thin Hardanger stones in all probability break more easily than bakestones made of the thicker, local soapstone, a comparison of the amount of fragments will give a false picture. With few exceptions, a single Small Find number contains the fragments of one bakestone.

Of the 58 recorded bakestone samples, 25 have all the elements characteristic of the typical Hardanger bakestone of good quality and may have been quarried there. 18 samples seem to be of local Shetland production, while two are labelled 'uncertain', meaning they are not typical of either group. Four, belonging to one bakestone, are grouped as 'possibly Hardanger', which means they have elements more characteristic of the Hardanger than of the local stone, but cannot be determined with certainty. Two finds could be either, as they consist of pure talc. The existence of talc is known both in Shetland and Norway. Another seven samples have been identified by Andrea Smith as Norwegian, but these have not been seen by the author.

STATISTICS

There are 87 bakestones fragments from the 58 samples taken from the Biggings; of that 55 (63.2%) are of Norwegian origin (Hardanger or possibly Hardanger, including those identified by Andrea Smith as possibly Norwegian); 28 bakestone fragments (32.2%) are of local (Shetland) origin and four fragments (4.6%) are of uncertain origin. The latter include fragments which could be either from Norway or from Shetland.

The Norwegian bakestones account for 70.6% by weight of the total number of bakestones; the local bakestones for 28.4% by weight and those of uncertain origin 1.8%. Included in the statistics here are three artefacts made on Hardanger material. These are two spindle whorls, SF 469 (illus 59) and SF 485; SF 486, a disc, and SF 476, a miscellaneous piece, all of which could be examples of the reworking and reuse of broken bakestone fragments.

THE DISTRIBUTION OF BAKESTONES AT THE BIGGINGS

The majority of finds derive from the west and central trenches of the main site (Trenches H, J and K), all containing hearths where bakestones may have been used.

PHASE 2
There were only three examples of bakestones from this phase, but the majority were of Hardanger material. None were *in situ* on floors.

PHASE 3
In this phase, 12 local bakestone fragments were found on the wooden floor of the *stofa*. Two local fragments were found in the *eldhus* beside the hearth. In the *skâli* a Norwegian bakestone fragment was also found besides the hearth, and both local and Hardanger material in a pit fill. It would appear that both local and imported bakestones were in use at the same time in this phase, but that local ones were the main ones used or were the ones which survived the best.

PHASE 4
Fragments of both local and Hardanger material were found in a fill of a pit (J pit 2), and a local bakestone fragment came from the floor of the new dwelling-house in E/EJ. Just above its floor was a spindle whorl, SF 469 (illus 59) made from a piece of Hardanger bakestone. However, the majority of pieces came from a building in Trench K and surrounding material in Trench H. These were mainly Hardanger fragments, but only three survived *in situ* around the hearth and on the floor. A local piece was also found on the floor of this building.

PHASE 5
By this phase numbers there are fewer occurrences of actual bakestone fragments. Pieces of both types and of uncertain examples were found in pit and drain fills, and levelling layers. In the Trench K dwelling-house of this period, four Hardanger and two uncertain pieces were found just above the floor. It is quite probable that activities in this phase represent the last proper use of bakestones on the site.

Pieces from the last phases (Phases 6 & 7) reveal the disturbed nature of the upper stratigraphy around the site and nothing further was found *in situ*. Earlier deposits were reworked, thus explaining the occurrence of bakestone fragments just below the topsoil.

SUMMARY

To summarise, it would appear that bakestones were in use at the Biggings from Phase 2 (AD 1100-1200). Although few in number, the samples show the presence of both Hardanger and local bakestones at this time. The use of both types of stone continued up to Phase 5, with a slight preponderance of local bakestone fragments in the *stofa*. By the end of Phase 5 bakestones ceased to be used at the site. Their last definite *in situ* use is noted from Phase 4 (ending in the early 17th

century), but they may have lingered on into Phase 5 as a declining household ware.

The numbers of fragments and their weight clearly show that Hardanger bakestones outnumbered those of local production but their fragments were mainly found in levelling layers around buildings. This suggests that they were used, broke and were discarded. There is little to suggest how many actual bakestones are represented by the fragments. Andrea Smith identified a minimum of eight bakestones made of local material, but the Hardanger material, as has already been stated, is more difficult.

COMPARATIVE DISTRIBUTION OF BAKESTONES

BAKESTONES FROM OTHER NORSE SITES ON SHETLAND AND BEYOND

The bakestones found at the late Norse farmstead at Jarlshof, Shetland, have been examined. Half of them could be identified as being Hardanger stones. Hardanger bakestones have likewise been identified from Sandwick, Unst -only two fragments came from the upper layers, the rest were very fragmentary local bakestones of Late Norse date- and from Kebister, both on Shetland, and from Tuquoy, Orkney. From these sites only selected samples have been examined. Bakestones of Hardanger origin are also known from sites in the Faeroe Islands and Iceland. From the late Norse sites at Freswick in Caithness, Scotland, bakestones are not recorded (Colleen Batey pers comm) and those from Underhoul, Unst on Shetland, have not been examined. Bakestones were also found in the latest phase at Pool, Sanday, but these were of Shetland manufacture and not Norwegian.

BAKESTONES IN NORWAY

DISTRIBUTION

Bakestones are found in large numbers in all the medieval towns in Norway. The earliest finds recorded are from Gamlebyen, Oslo. Stratigraphical analyses and C14 dating place the earliest layers in the middle of the 11th century. Bakestones however, occur no earlier than fire layer 13, dated to *c* AD 1100. At present, this is the earliest recorded date for bakestones in Norway.

Bakestones have also been found from excavated farmsteads and farm-mounds, mostly from areas along the west coast and in northern Norway. They are more sparsely represented from inland areas, but relatively few farmsteads have been presently excavated. Stray finds are often brought to the museums as a result of field work. These finds were probably discarded when broken and thrown away with other rubbish.

PROVENANCE

The two groups described in the introduction are both found in Norway, the majority being the thin bakestones of schistose soapstone. As described above, bakestones of steatite proper were quarried locally, mainly as by-products from quarries where steatite pots were manufactured. Bakestones of schistose soapstone all come from specific quarries in Hatlestrad, Hardanger, in the county of Hordaland on the west coast of Norway.

As long as there was a demand the production in Hatlestrand continued. Bakestones which are identified as Hardanger stones are found in the towns in contexts dated as late as the 17th century (Weber 1989).

DISCUSSION

The cultural implications of the bakestone finds

The hypothesis is that the use of the bakestone found in the early medieval layers in the Norwegian towns was closely connected with the baking and consumption of *flatbrød*, an unleavened, thin wafer crispbread. The *flatbrød* was eaten with various kinds of boiled milk products, butter or cheese and also fish and meat. These various products were called *sovl* (old Norwegian *sufl*). The sovl was eaten between pieces of *flatbrød* and was handed out at meals to the various members of the household by the housewife. The *flatbrød* could be eaten crisp or soft, the latter being obtained by moistening it in a wet cloth. This *lefse* was wrapped around the sovl and was often preferred as travelling provisions. This has been the main fare in Norway from Viking/Early Medieval times until the middle of the last century.

The tradition of baking *flatbrød* is found in north-western Europe where the cultivation of oats and barley is dominant due to climatic reasons, and where the open hearth was likewise predominant. These meals (flours) lack gluten and the dough will not rise. The dough, which consisted of flour and water, and perhaps some salt, was rolled out with a rolling pin and the thin bread baked slowly on the bakestone. The latter was placed directly over the open fire, resting on stones or the stone frame of the low hearth. To turn the bread, a baking-stick was used. The *flatbrød* was stacked and could be stored for a length of time.

Due to extraordinary good conditions for preserving organic material in the medieval town of Oslo, it was possible to identify the rolling pin and baking sticks similar to those used in 'our time' in addition to the bakestones (Weber 1990, 62ff, figs 19, 21, 22). These finds strengthened the hypothesis set forth. In Gamlebyen in Oslo, the open hearth in a corner of the room was dominant through the centuries.

One may assume that on Shetland access to bakestones was important to the housekeeping to provide the daily bread, the *flatbrød*, on the farms where they are found, and that these people were presumably Norwegian. Even if bakestones did not occur in Gamlebyen until *c* AD 1100, the baking implements necessary to the baking of *flatbrød* were found in earlier layers. As it is possible to bake *flatbrød* on any flagstone, the assumption is that before the first 'manufactured' bakestone, ordinary stones were used (*ibid*, 1).

When and how *flatbrød* came into use is not known. The fully developed set of baking implements from the middle of the 11th century suggests a fairly long and well established tradition by that time. For the Norwegians settling in Shetland the *flatbrød* was the main fare. It was eaten at all meals with various sovl as an essential food stuff.

As the finds from only a few sites in Shetland have been examined thoroughly, from Jarlshof and the Biggings, the extent of the export of bakestones from Norway is not known. The fragmentary condition of the bakestones also makes it difficult to evaluate the amount and numbers involved.

The Shetland quarries may in the beginning have provided the settlers with bakestones, as steatite vessels (for both funerary and cooking purposes) had been produced from the Bronze Age onwards. The quality of the Hardanger bakestones was, however, superior. They were light and easy to handle, were quicker to heat and may therefore have been much preferred. There was a continuous communication with the home country and especially with the west coast of Norway. Access to bakestones from Hardanger was evidently no problem. Acquisition of Hardanger bakestones began before AD 1200 and possibly continued as late as the beginning of the 17th century. Stone flags built into the kitchen range in parts of north Yorkshire were used until fairly recently for the cooking of oatcakes (Andrea Smith pers comm).

The connection, if there is any, between the *flatbrød* and the oatcakes and/or bannocks, will be difficult to evaluate. In Norway, evidence for the *flatbrød* tradition dates to the middle of the 11th century, but there is little archaeological evidence for bakestones from native sites in Scotland or from the Northern Isles from that period. However, several very large and thin flagstone roundels, originally classified as pot lids, were found in the middle Iron Age period (Phase 7) at the Howe settlement, Stromness, Orkney. They were 320-480mm in diameter and burnt to a brittle and often fragmentary state (Ballin Smith 1994, 204), and may well have been precursors of the steatite and schistose bakestones seen at a later period.

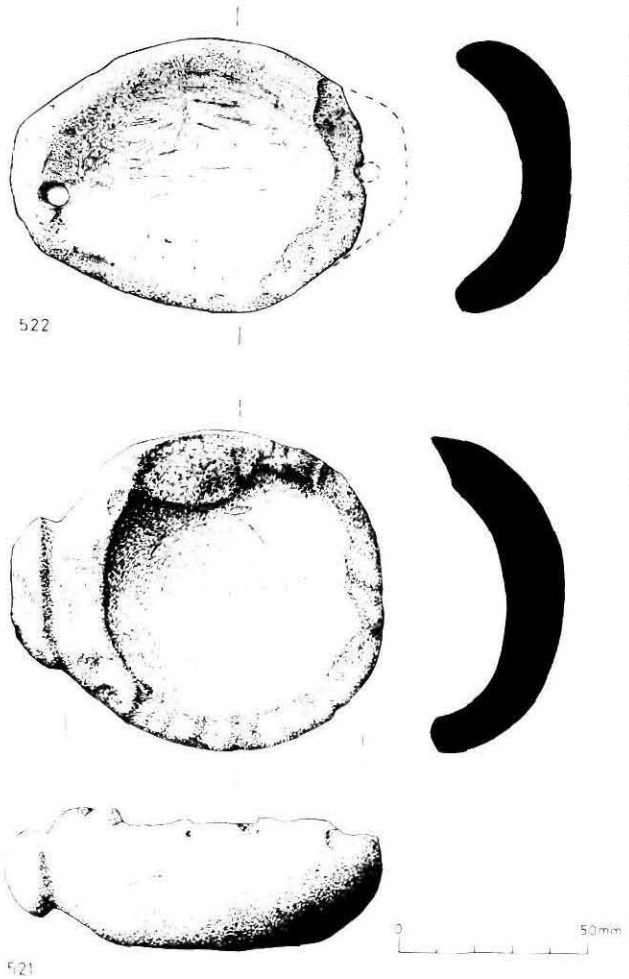
Similar environmental and climatic conditions may have led to the development of *flatbrød* in Norway and the oatcakes and bannocks in Scotland and on the Scottish Islands, independently of each other.

7.2.4 OBJECTS OTHER THAN VESSELS

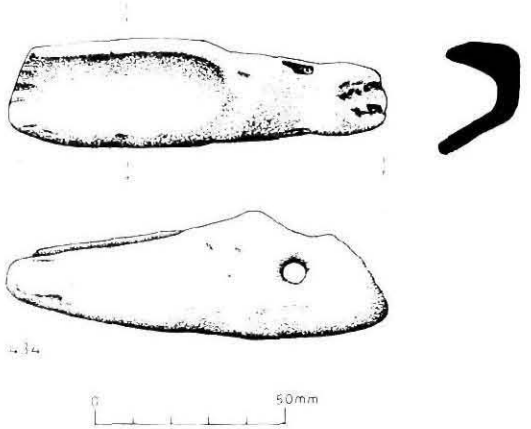
LAMPS

There are four definite lamps and seven probable lamp fragments all from Trench K from Phase 4. One, SF 522 (illus 57), is a familiar Norse type, an oval lamp with two suspension lugs, which was common at Jarlshof in the later phases (Hamilton 1956, 173, 184). A more unusual form is represented by a small oval lamp, SF 434 (illus 58), with one perforated handle. The other end is damaged, but does not seem to have had an extension for another handle. The inside of the bowl is burnt, clearly indicating its function, probably as a small portable lamp or night-light. A third example, SF 1556a, consists of only fragments of a thick, crude and flattened bowl with extensive burning internally. The fourth lamp, SF 521 (illus 57) is of a different form. It is in the form of a rounded cup with a well shaped knob on one side. This is a type with Iron Age affinities, more closely parallelled by examples from prehistoric sites such as Clickhimin (Hamilton 1968, fig 59).

There is nothing to suggest the presence of large free-standing lamps of Norwegian type (see Grieg 1933) such as have been found at Sandwick (Bigelow 1985) and at Northouse, Papa Stour (on loan to the Shetland Museum).



illus 57
Steatite lamps SF521 and SF522.



illus 58
Small oval steatite lamp SF434.

WHORLS

(illus 59)

There are a total of 24 whorls, of which just under half came from Trench K. Only five (21%) were made from reused steatite, which may be compared with the slightly higher percentage at Pool of 31% (nine out of 29). Three of these, SF 1459 (Phase 3-4), SF 439 (Phase 2) and SF 455 (Phase 4), were made from vessel sherds on which residual sooting and tooling could still be seen. Here the shape of the whorls has been dictated by the thickness of the vessel sherd. Two whorls, SF 485 and SF 469, from an unstratified context and Phase 4, were made from the distinctive silvery, laminar schistose bakestones fragments of Norwegian origin. The former piece is incomplete, but is unusually large for a whorl (minimum diameter of 50mm) and may have been one of the drill whorls described by Buttler (1989, 196-7).

Another large whorl is SF 457 (illus 59) (diameter 48mm) found in Phase 6, but possibly too small for a drill whorl. This has been very finely worked into an even flattened disc, with incised decoration on both sides, although this appears to have been quite heavily worn on one side.

The usual variety of shapes and sizes of whorl are represented here. Two pieces, SF 466 (Phase 4) and SF 465 (illus 59) (Phase 5), might have been beads rather than whorls, and appear much smoother than the others and apparently more worn. These both have rather large central perforations, and appear more ring-shaped. The are also of much lighter weight than many of the other whorls, although they may still fall well within the weight range for spinning (see below) at 13g and 11g respectively. Two small fragmentary pieces may also have been beads or very small light whorls.

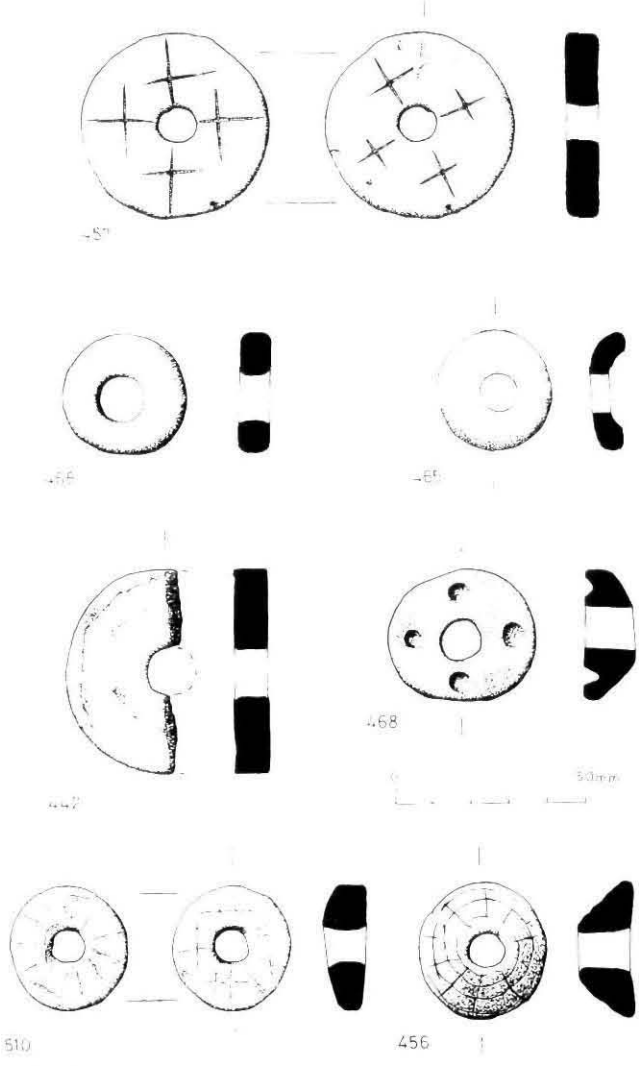
Three hemispherical whorls are all plain and smooth, and fall at the heavier end of the weight range. The whorls which fall within the disc-shaped or flattened category vary widely in their degree of shaping and finish, and one fragment, SF 442 (illus 59) (Phase 4), is decorated with a single intermittent concentric incised line. Other decorated examples (six in all) include SF 468 (illus 59) (Phase 5), a truncated cone with four pits on the flattened surface, probably the surface that was usually uppermost. Two examples, SF 510 (Phase 2) and SF456 (Phase 4) (both illus 59), are decorated with a mixture of radial and concentric lines on two surfaces.

On sites of the Norse period in the Northern Isles whorls of steatite, other stones and bone are ubiquitous and numerous, and no typological or chronological significance can be attributed to their shape. Most Norse spindle whorls are undecorated and would look quite at home in an Iron Age collection from Shetland.

At Pool on Sanday, no distinctions could be made by shape from phase to phase (Smith forthcoming), although the whorls from the very latest Norse phases did appear to be heavier than their predecessors. It has been suggested that the optimum weight for spinning Soay type wool using a dropping action is 8gm (Ryder 1970, 81). As at Pool, all of the complete whorls from the Biggings (illus 59) weigh considerably more than that, with a weight range from 11-42g, so a number of further possibilities must be considered. The spindle may have rested on the ground and used purely as a flywheel to increase the speed of the rotation of the spindle. The quality of the wool may have been rather better and stronger than we suspect, and wool may not have been all that was spun; flax or other plant fibres may have been processed as well, and a spindle may also have been used for plying a number of threads together.

WEIGHTS

There are a total of 21 weights, which can be placed into three categories: grooved line sinkers, steatite cobble weights and reused vessel sherds. There are only four line sinkers, of which two are fragments. The two complete examples include one smaller weight, SF



illus 59
Plain (SF 465 and SF 466) and decorated (SF 422, SF 457, SF 468, SF 510 and SF 456) steatite whorls.

illus 60
Steatite weight SF 1439.

illus 61
Perforated steatite line sinker SF 584.

1439 (illus 60) (Phase 3), with a central perforation and a groove around the long axis, and a more classic example, SF 593, found in Phase 7 topsoil, which is quite roughly finished, with a perforation towards one end and a groove from this up over the apex.

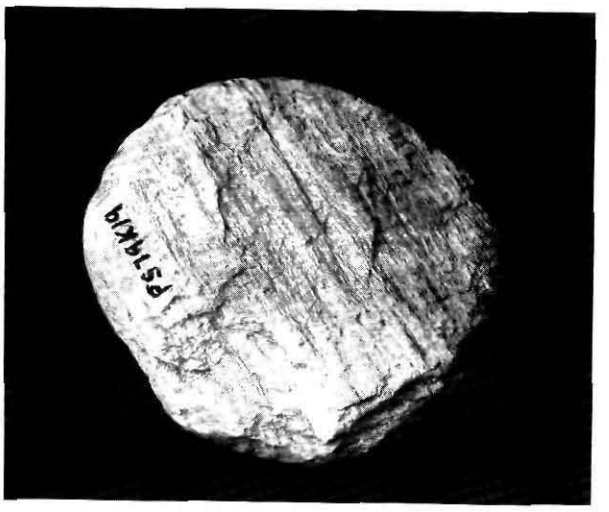
There are 12 cobble weights, which vary considerably in the degree of shaping and finishing. Three are well shaped and smoothed, but the rest are predominantly largely unmodified cobbles of steatite with only a single pecked perforation. The exception is SF 584 (illus 61). This is an incomplete piece from paving (J11) east of the Phase 5 dwelling-house (Trench K). It has two perforations, towards either end of the cobble, but is broken at the lower one. A worn groove leads to a notch on the edge of the stone above the complete perforation. This is a line sinker typical of others found at Jarlshof, but is the only one from the Biggings with two perforations.

Five weights have been made out of vessel fragments, eg SF 1525/709 from Phase 4 and an unstratified context (illus 62), on some of which the residual soothing and tooling can still be seen. Most of the weights are concentrated within the range of 139-599g, with two outliers of 1079g and 1094g. There are no obvious concentrations in spatial distribution, but like most of the steatite, weights occurred mainly within the west side of the site (Trenches E, J and K).

DISCS

There are four examples of worked discs of steatite, all with diameters of 50 to 60mm, eg SF 515 from Phase 4 (illus 63), including two made from reworked vessel fragments. These may be balance weights or gaming pieces, and such discs found on English medieval sites are often referred to as pot lids. Discs of all types of stone are a common but often unremarked find on sites from the Neolithic onwards in the Northern Isles, and occurred at Pool in sandstone throughout the Iron Age phases,

illus 62
Perforated weight SF 1525/709 reusing a steatite vessel fragment.

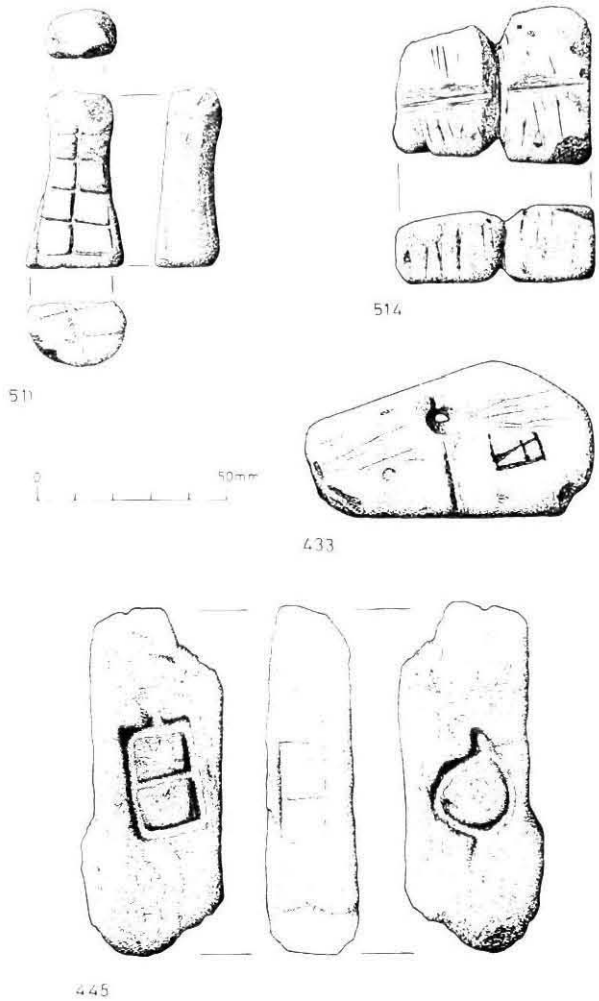


illus 63
Steatite disc SF 515; reproduced at 1/1.

with examples made from reused steatite vessel fragments found in the Norse period (Clark forthcoming; Smith forthcoming).

GAMING PIECES

In addition to the discs, there are two further objects which may have had such a function. The first, SF 1479 (unstratified), is a small sub-rounded object with a flattened base and top, possibly a reworked vessel fragment. The second is a flattened sub-rectangular object, SF 514 (illus 64), with multiple vertical knife strokes on one face forming a deep slash, and with a waisted middle also formed by multiple knife strokes. It was found in Phase 4, and is heavily scratched all over. It will stand upright fairly securely so that it is possible that it may have been used as a gaming piece. It is also equally possible that this was some kind of steatite carving practice or trial piece as described below.



illus 64
Steatite pieces: handle from a vessel, SF 511; gaming piece SF 514; trial piece SF 433 and mould SF 445.

TRIAL PIECES

SF 1478 is unstratified and has just a few incised lines and dots, but the other, SF 433 (illus 64) from Phase 4-5, has one complete perforation with several other pits and dots, along with incised lines and scratches as well as other marks from knife trimming. These may simply represent a bit of whittling in an idle moment, or a child copying its elders.

METALWORKING EQUIPMENT

A group of objects which may be connected with metal-working includes two objects (both illus 65) which may be heating trays for small amounts of ore, as one, SF 516 from the Phase 3 cookhouse, certainly bears sooting and burnt deposits. The other, SF 513, is not quite so clear, and could equally be a toy or model, as it is simply a small oval flattened dish, but it does have some signs of heating. It was found just above the floor in the Phase 4 dwelling-house (E/EJ). Similar flattened dishes and containers made in clay were found at the Brough of Birsay (Curle 1982, ill 25) and at Moynagh Lough, Co Meath, Ireland, albeit in an 18th-century context (Craddock 1989, 181, No 160). Here it is suggested that these small trays may have been used as crucible stands.

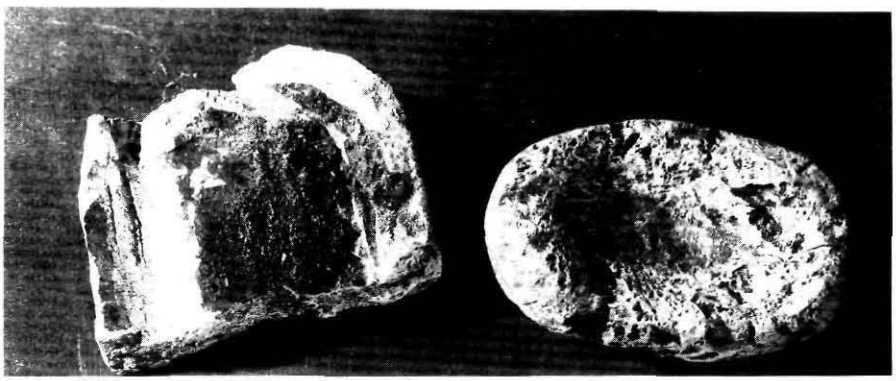
There are also two moulds, one bar mould, SF 1095 (Phase 2, Trench K), as seen at the Brough of Birsay (Curle 1982, ill 28), which would have produced bars measuring 81mm x 15mm x 15mm. The face with the matrix is flattened and smoothed, but the opposing side is very uneven, and possibly intended to be set into the ground. The other, SF 445 from the dwelling-house (Trench K) in Phase 5, (illus 64), is a rather more complex object, with an annular channel on one face, and a double square with a gate on the other. These are very roughly carved, and the object may be unfinished.

RAW MATERIAL AND WORKING WASTE

This category includes nine pieces, in various stages of working, from a large boulder-size lump of raw steatite found in Trench E, to a possible lamp roughout SF 703 from topsoil. The smaller pieces display some rough tooling, one with 4.5mm-broad chisel marks, but no further shaping or smoothing. Although the number of fragments is not great, these are large pieces, and represent no small effort or energy expenditure. This gives some indication of steatite working on the site which was not restricted to reworking of broken fragments. These pieces are not concentrated in any one place, and may represent the occasional working of windfall pieces on the site, rather than a routine practice. This is still a clear indication that some working of larger objects or vessels took place away from the quarries.

MISCELLANEOUS REWORKED FRAGMENTS

The bulk of these pieces represent vessel fragments which have various traces of shaving and knife trimming after breakage. This is the more common type of steatite working to be found on most Norse sites in the Northern Isles, involving the reuse of broken objects, usually turning broken pots and bakestones into whorls and weights or some small trinket for a child to play with.



illus 65
Steatite heating trays SF 516 and SF 513; reproduced at 1/1.

7.2.5 DISTRIBUTION OF STEATITE ARTEFACTS

The excavation did not yield a Phase 1 structure, and no fragments of steatite were found in the Phase 1 stratigraphy. Steatite, like the buildings appeared in Phase 2.

PHASE 2

A total of 36 pieces are allocated to this phase, but only four were found within the *dyngja*. However, these included the decorated vessel handle, SF 511, a disc and vessel fragments. The majority of pieces (30) came from the *eldhus* and *skáli* at the west side of the site, mainly vessel fragments and unidentified lumps of steatite. The vessel and bakestone fragments along with two weights, four spindlewhorls and a mould, suggest a range of domestic (and industrial?) activities. As none of these western structures was completely bottomed it is difficult to interpret the results from the surviving artefactual evidence.

PHASE 3

Numbers of steatite artefacts generally increase in this phase, with the Trench K *eldhus* providing the most pieces (33), mainly vessel fragments. The *stofa* had half the number of vessel fragments (13) as the *eldhus*, but in contrast yielded the greatest number of bakestone fragments (12). This building had also a decorated weight and the trial piece SF 433. There were no steatite spindlewhorls from this phase, but most of the unidentifiable fragments were generally scattered through and around the buildings on the west side of the site. Destruction or rebuilding of structures there at the end of the phase, probably accounts for the predominance of vessel and bakestone fragments in levelling layers (Phase 3-4).

PHASE 4

The Phase 3 *stofa* was replaced by a new dwelling-house built slightly to the west (Trench E/EJ), at the beginning of this phase, but fragments of bakestones and a disc came from fills of pits dug into the former *stofa*. Large numbers of steatite artefacts came from the west side of the site, indicating the probable disturbance of material from earlier phases, and the dumping of newly discarded pieces. *In situ* vessel fragments, a disk, a heating tray and a whorl/bead came from the floor, hearth and deposits over the floor of the new dwelling-house. In the adjacent building (Trench K), possibly also a cookhouse, built over the remains of the Phase 3 *eldhus*, came a complementary list of artefacts which also included bakestone fragments and a lamp. Beneath and around this building was a dump which included the rest of the steatite lamp fragments found on the site, as well as many vessel (30) and bakestone fragments (25), a decorated spindlewhorl and weights.

Although this phase produced the largest number of steatite objects, very few of them were actually *in situ*.

PHASE 5

A new dwelling-house over the Phase 4 Trench K building produced 37 pieces. The majority were vessel and bakestone fragments, but spindlewhorls and miscellaneous artefacts were also present. Pieces from this phase may represent the last active use of steatite on the site. However, the digging down of the dwelling-house into earlier material, and the construction of drains, indicate that many of the artefacts could have originated in an earlier phase.

PHASE 6

Although steatite artefacts (vessel and bakestone fragments, and spindlewhorls) were present in this phase, none of them were *in situ*. They derived from earlier deposits which were disturbed in the construction of new structures on the site. The condition of the steatite (discussed above) suggests a great deal of movement and redeposition of material.

7.2.6 CONCLUDING REMARKS: DATING AND CULTURAL AFFINITIES

Steatite as a raw material is ideally suited for use in cooking because of its high thermal capacity, and steatite pots and bakestones found a widespread distribution in the Norse period. The excavated Norse settlements of Orkney certainly seem to have been well supplied with pots and bakestones, probably most of them from Shetland quarries. However, many of the other objects, such as lamps (illus 58), weights and other small trinkets seen on this site are only found on Shetland sites, close to the sources of raw material. The suite of lamps, weights and other small objects found at Papa Stour are a characteristically Shetland phenomenon. The reuse of broken pots and baking plates appears to be a common occurrence in this period, regardless of the distance from the quarries.

MANUFACTURE OF THE OBJECTS

The Biggings site probably acquired vessels and bakestones from the main Shetland steatite quarries, which produced mainly plain, but serviceable vessels and a few fine bowls (Buttler 1984). In addition, some of the coarsest bowls may have been made by the users, as the fragments of raw material and working waste indicate, while lamps and whorls were probably also home-made in most cases. A finely shaped sinker, SF 1480 from the Phase 4 dwelling-house (E/EJ), is most likely to have been professionally made.

The hard use to which most of the vessels and bakestones were put suggests that steatite at the Biggings, compared to Jarlshof, was an expensive commodity and the maximum amount of service was gained from each object. The rock was certainly less easily obtained from Papa Stour.

The range of vessel types present can be compared with those from the late Norse period at Jarlshof. Small round bowls mainly occur early in the Jarlshof sequence and although they appear to be relatively rare at the Biggings, their presence may indicate a 9th- or 10th-century settlement. The presence of rectangular vessels and bakestones indicates an occupation at some point during the 12th to 14th centuries. However, it must be stressed that Shetland steatite artefacts are not well suited to dating.

The small-based straight-sided rectangular vessels, probably manufactured at the Catpund Quarry, Cunningsburgh, are greatly in evidence, and these are held to be an indigenous development in late Norse Shetland (Buttler 1989, 199; Sharman 1990a). This type of vessel was not identified at Pool, although the larger straight-sided dishes were present, possibly indicative of the slightly later date of the former type, as the latest phases at Pool probably date to the late 11th or 12th centuries (Smith forthcoming). Connections further afield may be indicated by a single sherd (and possibly some rim sherds) of a type of flat-based round vessel common in medieval Norway, as well as by the relatively large number of imported Norwegian bakestones.

A summary of the Biggings steatite would be that it forms a typical Norse Shetland assemblage. The hard use it has suffered could be the result of the distance between Papa Stour and the steatite sources, compared with the relatively favourable situations of Jarlshof, Sandwick and Underhoull. That is, steatite was a more valuable and less wasted commodity at the Biggings than at other excavated Norse settlements on Shetland. As at Jarlshof and Sandwick, a few finds indicate some form of contact with Norway. However, this was of minor importance in Shetland compared with the local steatite industry in supplying the everyday needs of the community.

7.3 THE CERAMICS

Beverley Ballin Smith, Lyn Blackmore, Hans-Georg Stephan & Robert Will

This report covers all the ceramic material found at the Biggings from 1977 to 1990, and is divided into four parts: locally made coarsewares; stoneware and other medieval ceramics; North German and South Scandinavian redwares; and other post-medieval and modern ceramics. As a whole the ceramics give detailed information of life at the site over an 800 year period, from around AD 1100 to the middle of the 20th century. They are the most numerous finds group and were found in the majority of contexts. Catalogues and details of all ceramics are available in archive. Table 12a & b summarises the total sherd assemblage.

7.3.1 LOCALLY MADE COARSEWARES

Beverley Ballin Smith
from a preliminary analysis by John W Allen

The excavations at the Biggings produced one of the largest collections of coarse pottery found on Shetland to date. In total, 646 sherds were recovered from the site. They came from all phases except for Phase 1, but the majority, 63%, came from the westernmost part of the site (Trench K). A more detailed discussion of the distribution and phasing of the pottery is presented below. The importance of the Papa Stour material, apart from its relative abundance, is the nature of its distribution: specifically in relationship to the buildings and activities in the central and western areas of the site (Trenches K and J) from AD 1100 onwards; and its continued and seemingly important presence up to and during Phase 5 (from the early to middle 17th century) when continental redwares reached their peak at the site (see below). Although no direct evidence exists that the pottery was manufactured at the site, it presumably was made locally, most likely on the island, and served immediate local needs.

ANALYSIS AND DESCRIPTION OF PIECES

METHODS OF INVESTIGATION AND ANALYSIS

The ceramic material was initially separated from all glazed and wheel-thrown sherds and then investigated by hand. None of the material was subject to thin-section analysis but all observations of fabric and surface treatments were carried out at x10 or x16 magnification. The pottery was analysed by context and within trenches using specially prepared analysis sheets which were transferred to a data-base. The estimated vessel equivalent (EVE), or percentage of vessel or rim survival, has not been consistently used because of the irregularity of the rims; however, where possible, the percentage reconstruction of a vessel is suggested.

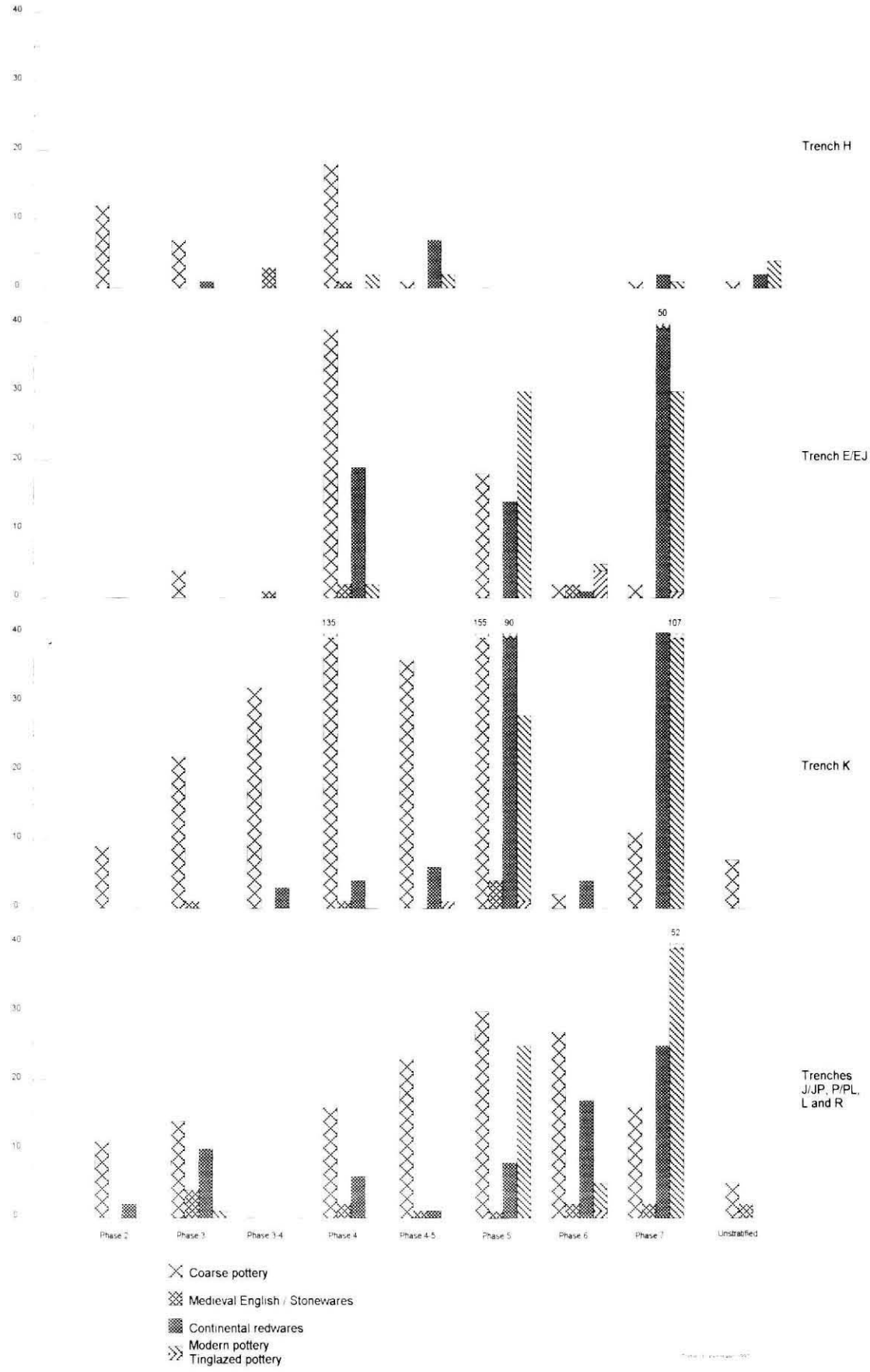


Table 12a
Sherd numbers from the Biggings by trench and phase.

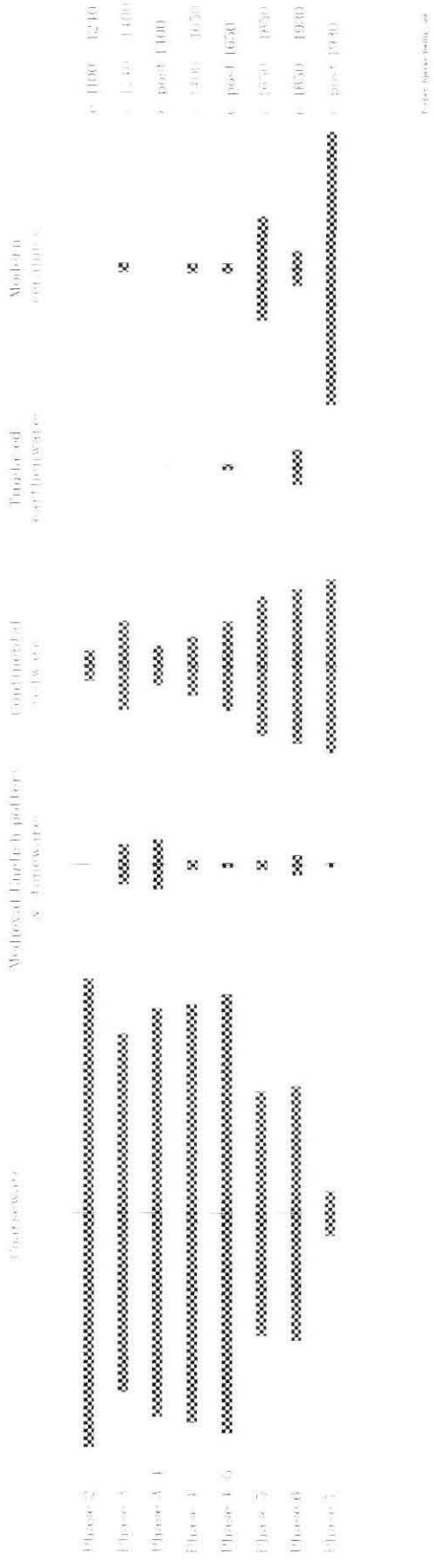


Table 12b
Seriation diagram of all ceramic types at the Biggings (% of each ceramic type per phase).

STATISTICS

The collection of 646 sherds weighed 10.49kg (average weight per sherd 16.23g); of this 152 were rims, 399 body sherds, 92 bases and three others have been interpreted as lamps (see table 13b). Only one handle is present in the collection and this was attached to a lamp. Three sherds, eg SF 1317, were pierced below the rim; finger and thumb impressions were common; otherwise the collection is entirely devoid of decoration. There is a vast colour range throughout the sherds due to firing, use, burning and post-depositional conditions, but generally vessels would have been pale yellow through orange to brown-grey in colour (Munsell 5Y 6/1-6/6, 10Y 6/2-8/3, 7.5YR 6/2-6/6 to 10YR 7/1-7/3). It is estimated that there were a minimum of 11 vessels; although many more existed; one or two handled lamps and possibly two other lamps. Deliberate levelling of the site and the disturbance of contexts is evident in the condition and distribution of the pottery from the later phases, where information gained from cross-trench joins and from the sherds themselves has been reduced to a minimum.

FABRIC

All the pottery was hand-made using traditions that were present in the prehistoric communities of the Scottish Islands. In fact, there is little to distinguish this collection from Iron Age ceramics, except for its provenance, and, that it is coarser and less well made. Boulder clay, peaty and non-calcareous gleys are present in the western half of Papa Stour (**1.2** above) beyond the present Hill Dyke, and would have provided clay for pottery making. All the temper used to mix with the clay would also have been available locally, and used since prehistoric times as indicated by two 'clay urns' from the prehistoric cemetery at Culla Voe found in 1893 (Inventory of Shetland Vol 3, 1946, 156). The predominant rocks used for temper were quartz and quartzite (both as angular and rounded grains) and tuff. Additional material included a little jasper, mica and steatite; and possibly basalt, sandstone, calcite, rhyolite and iron-oxide, but these were found in only one or two sherds each.

Tuff is the most common temper found in the ceramic, followed by large (up to 10mm) square fragments of quartzite and finer grains of quartz. The former is black, vesicular, soft and shiny and was frequently seen as flat plates within the fabric A beach origin is suggested for the small grains of quartz which varied in colour from white, through to orange and red. All the rocks used as temper would have been available along the island's shoreline. Rhyolite is the main rock forming Papa Stour, but fragments of it were generally not found in the ceramic, even though it was identified in two sherds, SF 371 and SF 328, both from Phase 4. This suggests that easily available resources such as beach sediments were preferred to digging out and preparing bedrock materials. However, a surprising omission from the main rock types used as temper is steatite. Although steatite is not present on the island as an outcrop, it is available on the adjoining Mainland of Shetland. It was also readily available as broken sherds of steatite vessels, fragments from bakestones and as lumps of raw material, but this source was generally not made use of. It was found in only 11 sherds; in SF 352 (two sherds) from Phase 3; SF 497 (three sherds), SF 1149, both Phase 4; in SF 1102 (Phase 6), a very abraded sherd; SF 1473, unstratified; and as possible degraded steatite (soft and powdery) in SF 372, 327 and 1178, from Phases 3, 4/5 and 5 respectively. The paucity of rock types other than tuff, quartz and quartzite, suggest their inclusion as temper was probably incidental rather than deliberate.

The inorganic temper, or rock inclusions was generally very poorly sorted. Most sherds had a range of grain size, from 0.5-5mm (fine to medium) and even up to over 10mm (very coarse). Often the temper was easily visible to the naked eye, the coarser grains (both rounded and angular) appearing as lumps of rock disturbing the vessel surface. In analysing the fabric it was clear that the majority of sherds had temper which fell into a medium-coarse range (2-10mm), although some sherds showed a full range of inclusions from fine to very coarse.

The second main category of temper used in the Biggings ceramics was organic material, mainly grass, in the form of chopped stems; possibly from cereals; although seeds, including cereal seeds, were also present.

It is also possible that this material represented dung (Gaimster 1995, 137). This form of temper is normally identified as a negative impression in the clay matrix, as the carbon content had often been burnt away during the firing process. Organic tempering was used widely and is present in almost all of the sherds. It was an important ingredient and probably was the easiest attainable of the resources used in the manufacture of coarse ceramics.

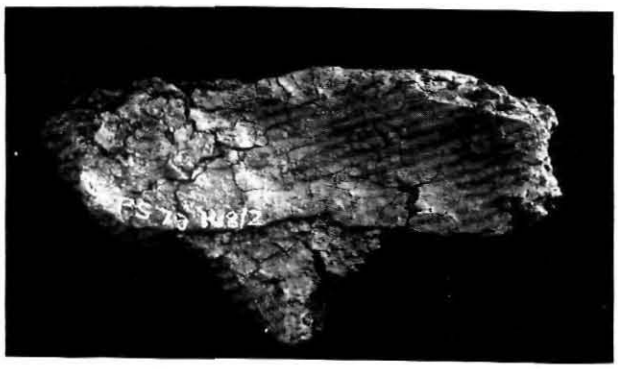
MANUFACTURE OF THE POTTERY

All of this collection was hand-made using slab or coil techniques or a combination of both; although the actual method of manufacture of some sherds was uncertain, there was no evidence of the use of a wheel for making or finishing the vessels. The number of finger and thumb impressions reveal that the pots were often moulded into shape by hand, and joins of the slabs forming the vessel body were smoothed over using fingers. Lane (1990, 117, 118) describes this technique as tongue-and-groove construction. It would appear that the clay of the base would have been roughly pulled and moulded into shape before the sides of the vessel were attached as slabs or more rarely as coils. Pinching the clay together at the basal angle, and then being roughly smoothed over, seemed to be a normal technique, eg bases SF 1172 (Phase 7) and SF 1299 (Phase 4). The latter example was extremely poorly made, and the join between it and the attached body slab was clearly visible. Most sherds are 50mm square or less, broken at the slab junction, thus indicating the slab width. SF 1275 is a fragment of reconstructed vessel where the lowest surviving portion has broken above and below a slab join. Where measured, coils had a thickness of half that of slabs (*c* 20-27mm).

Rims were attached to the vessel body as a prepared coil or narrow slab, 20-22mm deep, by pressing the joins of the pieces together with the fingers, moulding the rim to shape or folding the clay over, and roughly smoothing the surfaces. The internal surface of one rim, SF 1207 (illus 66), shows how the rim was attached to the vessel body, and that in some examples, even the smoothing-over of joins was not carried out. Finger and thumb indentations were clearly visible on the majority of rims and many of them were very irregularly formed.

The irregularities of rims and bases, formed by the coarseness of the temper, and their uneven moulding and finishing was often a hindrance in achieving an accurate measurement of diameter. Some vessels were so distorted that a reliable diameter was impossible to calculate (eg SF 1214/1218/1226 and SF 1222, both from Trench K); and two rim sherds from the same vessel would often have completely different profiles. In addition, many bases were only roughly flattened.

No pottery sherd had a thickness below 4mm, and none was greater than 21mm. The average pot thickness varied from location to location; in the central area (Trench E) it lay between 7mm and 10mm (from minimum and maximum widths of 4-16mm), in the NW area (Trench H) it was *c* 8mm (from 5mm to 17mm); the pot from west of the central area (Trench J) was more irregular with average widths lying between 7 and 13mm (from 4-17mm) and pottery from the western part (Trench K) had widths of 6-13mm from a minimum of 4mm to a maximum of 21mm.



illus 66
Interior of a coarseware rim SF 1207; reproduced at 1/1.

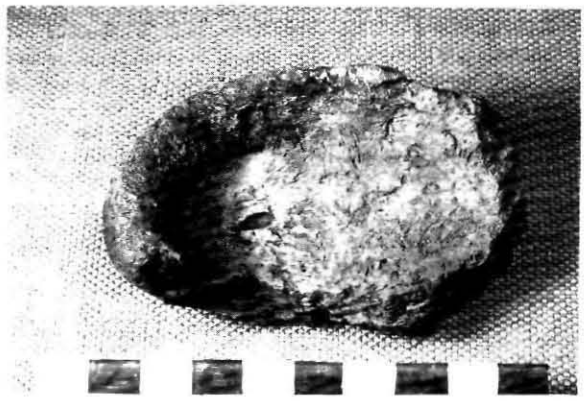
SURFACE TREATMENTS

This category includes actions which affected the vessel surfaces during or immediately after production, or were a result of use.

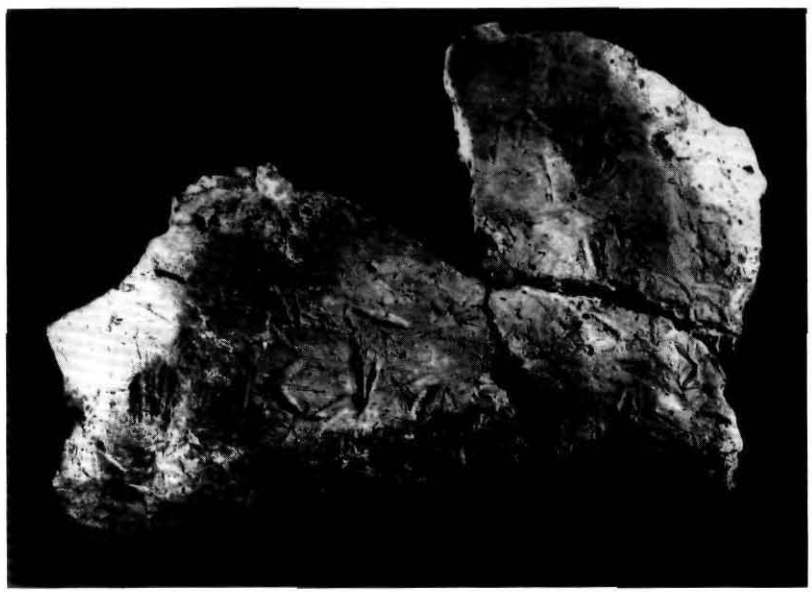
The coarseness of the temper made some surface treatment of the vessels necessary in order for them to be serviceable, or more aesthetically pleasing. Masking of the coarsest grits was partially successful by the application of a clay wash or slip on some of the vessels. The slip could be thin or thick and may have been burnished but the slip and its treatment was generally difficult to discern due to later burning and sooting, accretion of food deposits or post-depositional weathering of the sherds. However, up to 20% of vessels may have been burnished. Often the slip had fine mica particles, mica dust, which gave the vessel surface a slight sheen. More often surfaces were simply smoothed, this being achieved by the action of the potter's fingers (the use of an alternative smoothing implement was not detected), or by rubbing the surfaces with a bunch of grass.

Finger tip indentations could also be classified as a type of surface treatment. Although, as described above, the various parts of the vessel were joined by the action of the fingers and thumb, the depressions left behind were rarely removed. Basal sherd SF 1222 (illus 67) shows clear

illus 67
Thumbed coarseware base SF 1222; reproduced at 1/1.



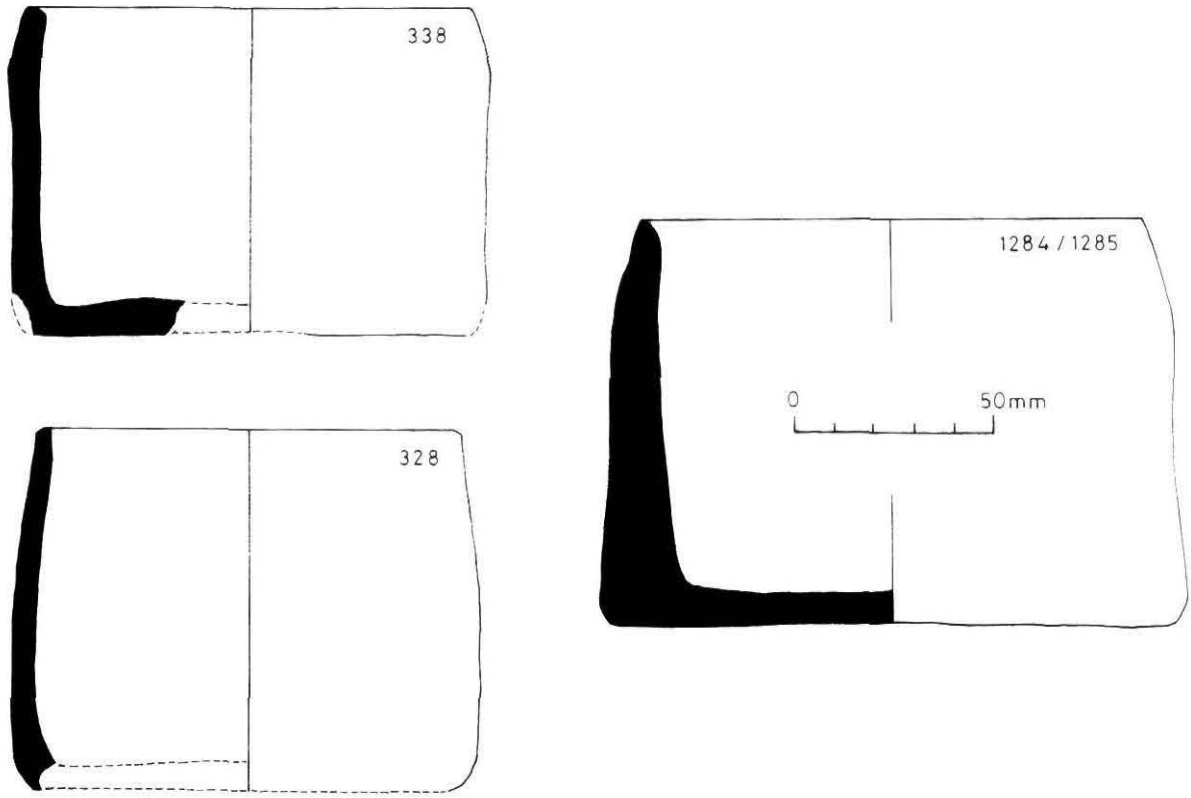
illus 68
Bowl of pottery lamp SF 518.



illus 69
Grass-tempered base SF 1320; reproduced at 1/1.

vertical thumb-prints above the turned over, and roughly finished, clay of the basal angle. In fact the high incidence of finger indentations on vessels such as SF 329/334 gave the surface a rough and uneven feel. This may have been a deliberate action to improve the grip when moving a full vessel (Ballin Smith forthcoming). Smearing the clay over slab joins and over large grits may have had a similar function. Rarely was the vessel surface seen to have been wiped by grass or straw, but SF 349, has ridge marks on both internal and external surfaces as a result of this action.

The most widespread technique which altered the surface of vessels was the wrapping, or packing, of newly completed pots in a wet state with grass or straw (see firing below), as grass and seed impressions are very clear on most sherds. Impressions can be seen on the inside of lamp SF 518 (illus 68) and on the outside of base sherd SF 1320 (illus 69). It is suggested that the unfired vessels were packed with grass or straw in order to support their shape whilst drying, and to prevent the formation of drying cracks by allowing the clay to dry slowly. It is quite evident from thick sherds with very coarse temper that, during firing,



illus 70
Reconstructed coarseware vessel profiles SF 338, SF 328 and SF 1284/1285.

the surface of the clay cracked around the grits, thus producing a crazed appearance to some vessels eg SF 1317.

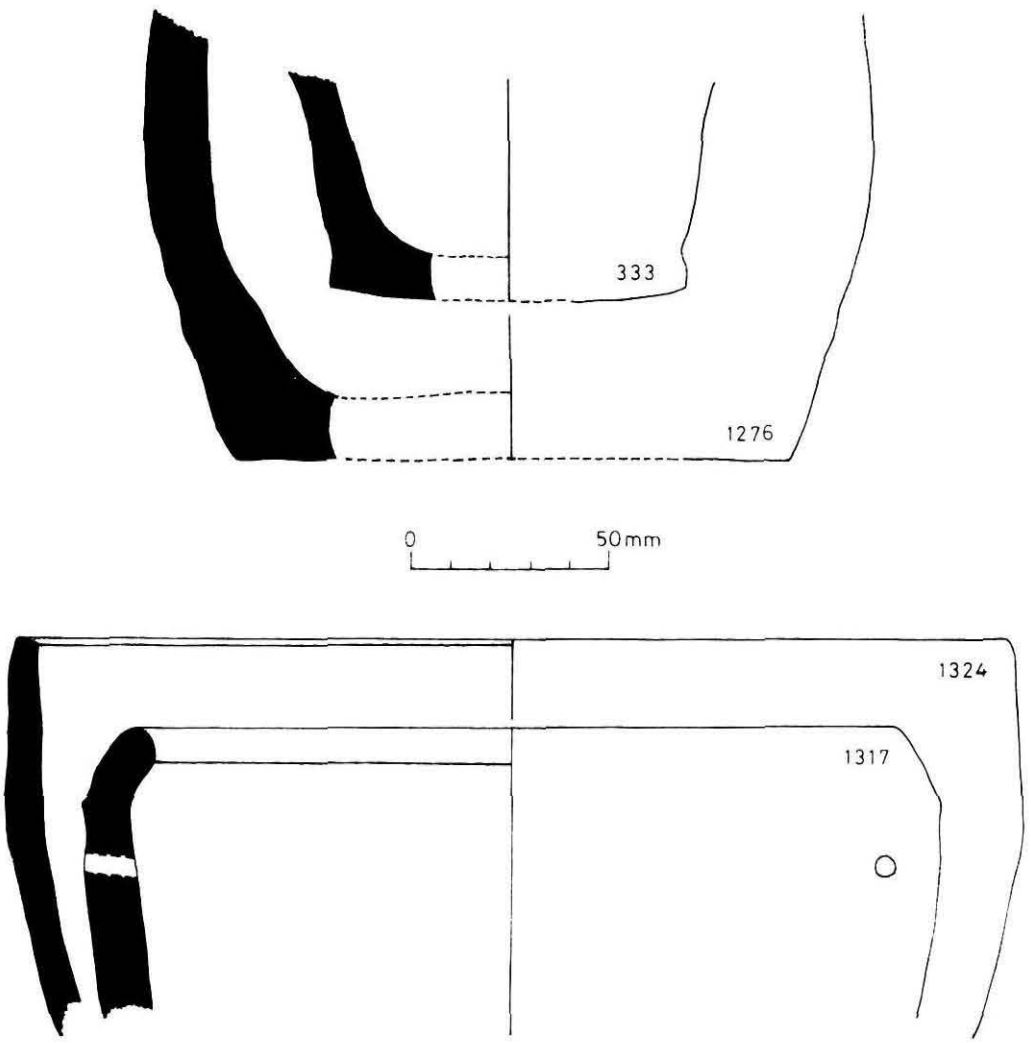
It was originally thought that some rims showed evidence of possible knife trimming eg SF 1169 (E39). In all, 13 rim sherds were smoothed and flattened. They came from phases 3-6 and from the main area of the site. However, drying of the pots upside down on a stone or earth floor, would account for the smoothing and flattening of the rims. Due to the lack of any evidence for the use of tools in vessel production it would seem unlikely that a knife was ever used for finishing the rims.

Included here are the three examples of sherds which had holes bored through them beneath their rims. Although not strictly surface treatments, the holes affected the vessel surface, and presumably the function of the pots. Each example is from Trench K in Phase 3 (or derived from Phase 3 deposits ie K98), and had only one hole surviving. SF 1317 (illus 71) is a vessel which has been partly reconstructed. From the discussion of vessel forms below, this is a cooking pot which has a hole, *c* 5mm in diameter, bored through its wall approximately 33mm below the inverted rim top. As with the other two examples, the hole was chipped through the vessel wall from both sides after firing. SF 1322 is a rim sherd of a larger vessel which has a 3mm diameter hole *c* 27mm below its rim. The final example, SF 1312, is an undiagnostic body sherd with a 3-4mm diameter hole which may belong to the same vessel as SF 1322.

On vessels with an inturned rim, it may have been necessary to bore two or more holes at equal distances around and below the rim in order to suspend the pot above the hearth. The paucity of other examples with suspension holes from this ceramic collection might suggest a specific use for these two pots in connection with food preparation, or a lack of alternatives, such as steatite cooking pots with iron handles. It was not possible to ascertain whether the vessels had been used before the holes were bored, or whether the holes were produced after firing and therefore before use, because of the accretion of sooting. However, it is probable that these vessels were adapted later after already having been used.

Surface treatments which are the result of post-manufactural processes are sooting and coating by food deposits. Sooting, or the accumulation of a thin and usually intermittent carbon layer on the exterior surface of vessels, was due to use; either directly in the hearth or above the fire. Soot was also found on some interior surfaces, which could indicate either burnt food, or that the sherd was burnt after breakage. As many as 50% of sherds showed evidence of sooting. More immediately noticeable were carbonised food deposits, often found in thick, crusty patches around rims, on external surfaces and on the interior of base sherds.

In discussing the surfaces of these vessels, it is pertinent to mention the degradation and occasional loss of the outer surfaces of some sherds. Post-depositional burning, abrasion and erosion is the cause of



illus 71
Reconstructed coarseware bases SF 333 and SF 1276 with reconsructed rims SF 1317 and SF 1324.

some surface failure and lamination; prolonged exposure to the hearth has lead to the loss of the external surfaces of bases and their change of colour from brown-grey to red. Often the impressions of grass temper are clearly to be seen in these heavily burnt sherds. Flaking of slipped surfaces has occurred, usually around coarse grits, and lamination of sherds is possibly due to a combination of poorly mixed temper containing a high proportion of vegetable matter, and infiltration of water and roots during post-depositional processes. More rarely have post-depositional accretions been noticed, such as a clay deposit on SF 1270 (Phase 3) and iron-staining on SF 358 (Phase 4).

FIRING

Evidence of colour variation noted in the sections through sherds, and the occasional flattened rim (see above) suggest that the vessels were fired upside down. As has already been described, pots were packed with grass or straw, possibly to aid the drying process; and when dry may have been fired with the same, and additional, organic packing. In general the vast majority of sherds have internal surfaces which show reduced conditions (a grey or grey/brown colour, Munsell 2.5YR 3/0-6/0, 7.5 3/0 to 10YR 4/1-5/2) and oxidised external surfaces (a red/orange-brown colour, Munsell 2.5YR 6/4, 7.5R 6/6 to 5R 4/3-6/2). Sherds from only two contexts K100 (Phase 3) and L32 (Phase 5) show the reverse. Rarely did a sherd exhibit two oxidised surfaces with a reduced core, as base sherd SF 1339 from Phase 2 in Trench K.

In spite of the crudeness of the ceramic, it was fired at a sufficiently high temperature that withstood possibly prolonged use at the hearth. The hardness of the pottery varies from being relatively soft to medium (*c* 2.5-4.5 on the Moh scale), although this characteristic may be just as much a product of post-depositional conditions as of the temperature at which it was fired. Harder fired sherds have also been found eg SF 816 from the Phase 3 oven Hi17; SF 1334 (K Trench) and SF 330 (J 63), both Phase 5. The higher firing temperatures produced slight variations in the texture of the sherds; they are less coarse and have a finer sandy feel, their fabric is more compact and organic temper is less visible.

The crudeness of the pottery and its lack of aesthetic merit suggest that it was unlikely to have been brought in and was probably made either at the Biggings or in the immediate vicinity. It is of domestic origin, and with that in mind, it is quite possible that it was fired where it was produced. Its construction required little in the form of technological aids, and neither did its firing. The domestic hearths, fire-pits and the oven at the Biggings would have provided suitable conditions for either open firing or semi-kiln firing. In addition, some of the shallower pits between Trenches J and E, could also have been used for open firing (Orton *et al* 1993, 126-31).

JOINS

Although the pottery came from all trenches and almost all contexts there is only one example where two sherds from different trenches join, ie horizontal connections. They are SF 334 from Trench K in Phase 3 and SF 329 from Trench J in Phase 7. This is not surprising due to the amount of disturbance around the site in the later phases. However, joins within trenches, ie vertical connections across phases, suggest that later disturbances did affect the earlier stratigraphy, but not to a significant extent.

Interesting cross-phase joins between sherds occur in the earliest phases. Sherds in Trench K Phase 3 (floor) join with sherds in Phases 2 and 4 (destruction and levelling layers); and sherds from the Phase 4 floor join with some from a Phase 5 drain fill. Joins also occurred in Trench H between sherds in the fill of the Phase 2 flue and the Phase 3 oven. There were no cross-phase joins in Trench E and those from the east end of the site (Trench L) occurred between a pit fill in Phase 4 and Phase 6 deposits. This survey of very limited data does, however, reveal that broken pots were discarded outside the buildings in deposits which were later reworked and disturbed, and this occurred from the earliest phases.

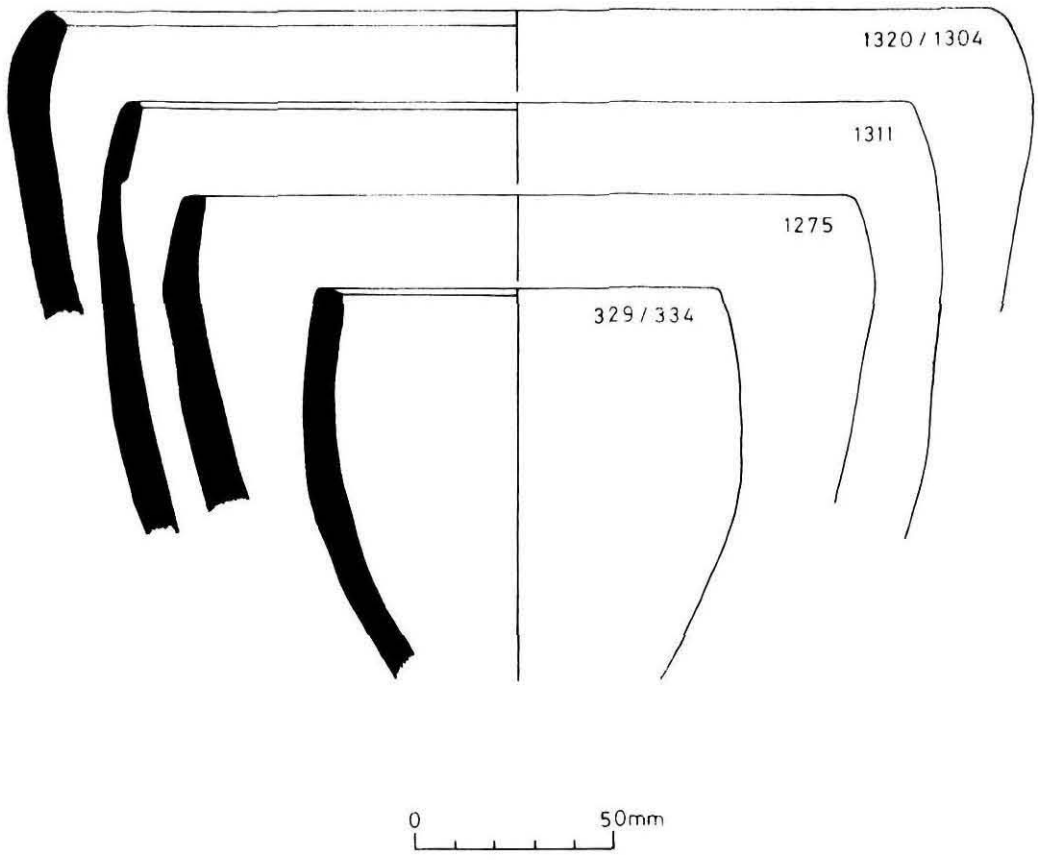
VESSEL FORMS

From this collection it was possible to reconstruct three complete and eight partial vessel profiles (estimated at 8-35.5% of the whole). There seem to be two dominant forms at the Biggings; a straight-sided vessel with a flat base, whose height is less than its rim diameter in the three reconstructed examples, SF 338 (EVE *c* 17%), 328 (EVE 28%) and 1284/1285 (EVE 23%) (illus 70); and a generally tapering-sided vessel, again with a flat base, but where the rim diameter is estimated to be equal to, or wider than, the measurement of the height of the vessel (illus 71). However, none of the latter were fully reconstructed. In addition there were also ceramic lamps.

From these examples it is possible to make some general observations, due to the fact that full or partial reconstructions were possible from Phases 2 to 4/5, including a rare survival from Phase 7. It would seem that the straight-sided vessels had straight or slightly inturned or inverted rims, and the junction of the vessel wall and base was rounded in Phase 4 (SF 328) and possibly rounded in Phase 2 (SF 338). Another example (SF 1284/1285, illus 70), also from Phase 4, shows a thickening of the vessel wall, especially at its junction with the base, thus giving an external tapering appearance to the vessel. These vessels were solidly constructed and would not have tipped over. The second type, the tapering-sided vessels, all had flattened inverted rims, although only one example, SF 1317 (EVE 10%) (illus 71), had a rounded rim. The inversion of the latter was most extreme and the presence of a suspension hole, suggests a specific function for this pot with an adaptation of the prevailing rim design. It was not possible to reconstruct bases to these vessels, but two additional bases, SF 333 (EVE 32%) and SF 1276 (EVE 23.5%) (illus 71), suggest that they were bases to similar pots. SF 333 is a flat base to a tapered vessel, where as SF 1276 indicates a slightly bulbous pot which tapers down to its flat base. This latter is not unlike SF 329/334 (EVE 35.5%), which although missing its base, has a slight mid-pot bulge above which it tapers very slightly to the rim, and below which it tapers more markedly to the base. In comparison with this example, the base SF 1276 may not have been from a particularly tall vessel, although it lies at the thickest end of wall measurements (15-17mm) for vessels at Papa Stour.

The advantage of having complete pot profiles, apart from aiding the interpretation of vessel form, is that height of vessels is also available for study. It is evident from the straight-sided reconstructed vessels SF

illus 72
Interior of reconstructed coarseware vessel SF 338.



illus 73
Reconstructed coarseware vessel profiles SF 329/334, SF 1275, SF 1311 and SF 1320/1304.

338, SF 328 and SF 1284/1285, that these were small pots; their heights ranged from 85mm to 107mm; and their rim diameters from 103mm to 125mm (illus 72, SF 338). It is possible that the two smallest pots were handleless drinking vessels; however, both internal and external surfaces of SF 328 were thickly coated with patchy food deposits. Food deposits and sooting were also found on the surfaces of SF 1284/1285, and in addition the outer surface of the base was heavily burnt. These observations may be a reflection of the conditions of burial, as fragments of this vessel were found amongst burnt roofing, and below the floor, of the Phase 4 dwelling-house, but its use as a cooking vessel should not be discounted.

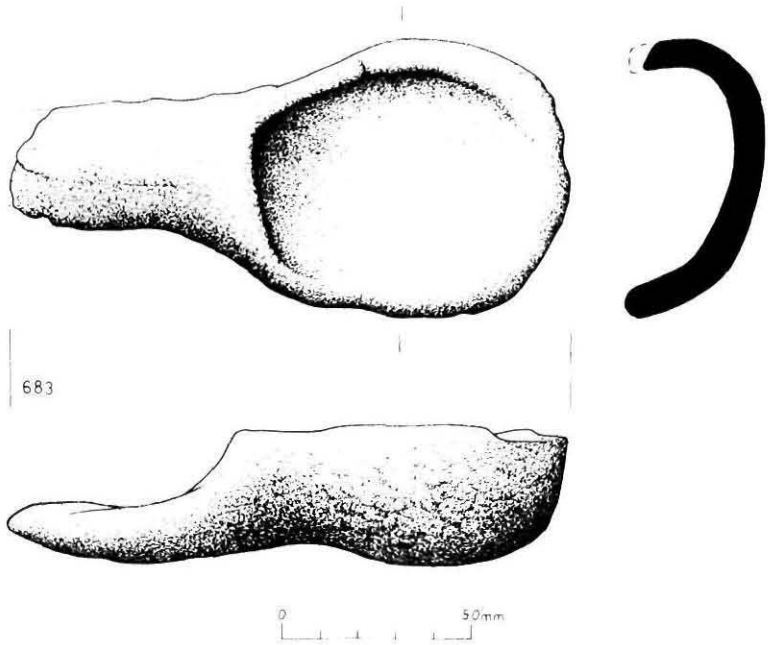
The tapering-sided vessels ranged in rim diameter from 90mm, to 160-240mm, and possibly up to 300mm. Although no bases completed the vessel profile, it was apparent from SF 1324 (EVE 7.5%), that the body had broken just above the base. With a surviving height of 102mm, it is suggested that the vessel was no more than 110mm when complete. The tallest surviving height of the other reconstructed pots was no more than 110mm, and the least, 74mm. Evidence from the reconstructed base SF 1276 suggests that this particular thick-walled vessel attained a height in excess of 115mm, perhaps as much as 200mm.

All these vessels (see illus 73) were sooted and all but SF 1311(EVE 8%) and SF 1275 (EVE 25.9%) contained food deposits. These carbonised deposits were especially noticeable around the rims; internally on vessel SF 1317; and on both surfaces of SF 1320/1304 (EVE 14%). Although soot was found internally on the base SF 1276, food deposits survived only on the external surfaces. The heavy use of vessels and the excess burning of some bases (see above) indicates that these pots were used for food preparation and used on the hearth, either directly in the ashes or suspended above the fire, as in the example of SF 1317.

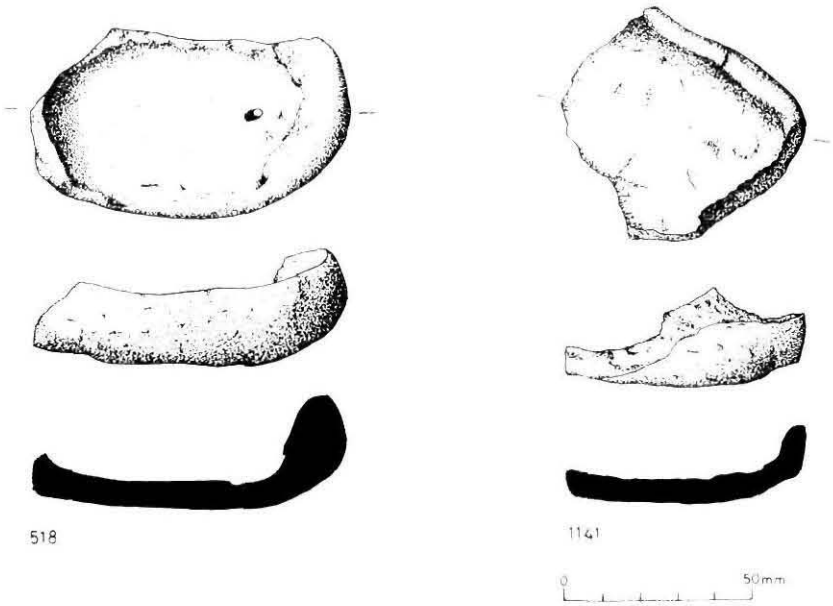
A few, almost straight rims, were present in the collection ie SF 1304, SF 1272, SF 1214/1218/1226 and SF 1216/1221/1229, which may suggest the presence of four-sided vessels. These sherds had irregular rim profiles, extreme in some cases, or were either so small, that definite evidence for four-sided vessels was not present. In the larger of these examples body sherds were curved below the rim, which suggests that the rims were simply malformed versions of the other vessel forms.

In addition to the vessels, several lamps and lamp fragments were found in Phases 3 and 4. The most complete example, SF 683, was found in or besides the corner hearth J27 in the Phase 3 *stofa* (illus 74). This is a handled lamp resembling a flattened ladle. It is 150mm long and 75mm in width across the bowl. The handle is broken but survives *c* 60mm in length. The bowl is an irregular circle with internal dimensions of 72mm x 57mm, and a depth of 25mm. It weighs 178g. The lamp is one of the finer made pieces of coarse ceramic to survive at the Biggings; the bowl was moulded to shape with the handle added as a rolled or folded piece of clay; a seam in the upper surface of the handle is clearly visible. The surface of the ceramic is abraded because of penetration by rootlets and as a result of heavy burning, especially around the uneven and flattened rim. Deposits of carbon and soot are noted around most of the rim and over half the exterior of the bowl, and finger impressions are to be seen on the handle.

A more fragmentary but similar example is SF 518 from a Trench K wall cut in Phase 4. It is quite probable that this lamp originated in Phase 3 but was later discarded. The bowl of the lamp is all that



illus 74
Coarseware lamp SF 683.



illus 75
Lamp fragments SF 518 and SF 1141.

illus 76
Fragment of bowl of a lamp SF 1141.

survives, and over half the rim is missing. It is a more crude example than SF 683; it was moulded into shape, and the rim formed by folding over the clay of the bowl (illus 75). It survives 85mm long by 50mm wide and has a bowl depth of *c* 21mm. It is also heavily sooted internally and externally around the rim. The use of grass temper is clearly to be seen as is the impression of an oat grain in the floor of the bowl (illus 75) (pers comm Camilla Dickson).

The other example worthy of mention is SF 1141 (with SF 1287) from above the floor of the Trench E dwelling-house in Phase 4 (illus 76). It is more fragmentary than the other two examples described above, as only half the bowl is present. Its form is very similar to SF 518, with a flattened base, and rolled over, but more irregular, rim. The lamp was clearly moulded as can be seen in the finger tip depressions visible on the inside of the bowl. The sherd is assumed to have been well-used as its rough outer surface is shiny.

Other possible lamp fragments have been identified from Trench E (Phase 3), SF 1160, and from Trench K (Phase 4), SF 1265.

VESSEL DISTRIBUTION AND TENDENCIES

(table 13)

Coarseware vessels appeared at the site during Phase 2, *c* AD 1100-1200, in comparable but small numbers of sherds (6-15) in Trenches K, H and J/L/P. Although only 15 sherds came from the Phase 2 *skáli*, in Trench H, this was the highest number to be associated with any structure in this trench; by Phase 3 *c* AD 1250-1400, its pottery numbers had declined to only seven sherds. In contrast the Phase 3 *stofa* at the east end of the site (Trench J/L/P etc) had 14 sherds, including the almost complete handled lamp (SF 683). The area of Trench E produced pottery, including also a lamp fragment, for the first time during Phase 3, although the actual number of sherds was very small (4). The most significant area in Phase 3 for coarse pottery vessels was the Trench K *eldhus* with 19 sherds. This trench experienced a continuous increase in sherd numbers until some time during Phase 5. The significance of pottery in Trench K can be explained by suggesting that this building's main function was that of food preparation. The *eldhus* in Trench K may have retained its domestic activities until the beginning of Phase 5, thus accounting for the increased number of sherds in this area.

In Phase 4 (*c* AD 1400-1600) alterations to structures affected the distribution of pottery across the site, and many sherds were found in levelling layers, principally in the area of Trench H. The Phase 3 *stofa*, no longer functioned as a building of status and it was replaced by a new building in Trench E. This change is reflected in pottery numbers which remained low (16) at the east end of the site in Trenches J/L/P, due to their location in pit fills or mixed with the burnt roof material of the *stofa*. In contrast 39 sherds of pottery, including a lamp fragment, were found in the new dwelling-house in Trench E. However, the Trench K building, although altered, produced the highest number of sherds in this phase (135). It is significant to note, that even with the introduction of a new type of ceramic goods during Phase 4 –continental redwares–the coarsewares were still primarily used for food preparation.

The picture of the dominance and importance of coarsewares persisted into Phase 5 (*c* AD 1600-1800) even though the importation and use of finer and better quality continental redwares reached a peak. A new dwelling-house was built in Trench K replacing the Phase 4 building in Trench E. Although many sherds in Trench K were associated with levelling layers, drain fills etc, sufficient were located on or within the floors of the building to suggest that coarse pottery was still in use, and presumably still being produced at the site. 155 sherds were found in this trench, (including the highest count of continental redwares, see **7.3.3** below). 31 sherds were also located associated with a possible yard with dwelling-house at the east end of the site, which may have been constructed towards the end of this phase.

From reaching a peak of 206 sherds in Phase 4, coarseware numbers began to decline, to 186 sherds in Phase 5, and 36 sherds in Phase 6. The latter were from the levelling and constructional layers of a new building, the Gørl, built at the east end of the site post-1846, and only 5 sherds came from disturbed contexts across Trenches K and E. After this, only 30 sherds were found in topsoil contexts of Phase 7, all of which were derived from earlier deposits.

Generally there is little to distinguish between the ceramics of the different trenches. However, all the tapering-sided vessels were found at the west end of the site, from Phase 2 to the end of Phase 4, predominantly in Trench K (the *eldhus*) with two examples from Trench H (the *skáli*), including a large pottery base. In contrast the straight-sided vessels were found in Trenches J and E (the *stofa* and dwelling-house) in Phase 2 and Phase 4. From such small numbers it is difficult to know how consistent this trend was. There is also the problem of comparing *in situ* sherds found on floors etc, ie in reliably dated stratigraphy, and those found in levelling or destruction layers, or pits, which may have derived from earlier contexts. Only Trench K produced sherds with suspension holes, their use centred on the Phase 3 *eldhus*. Lamps were found in Trenches J, K and E during Phases 3 and 4; but it is quite possible that they were a product only of Phase 3.

It is suggested that coarseware at the Biggings was in use from Phase 2 to Phase 5, from *c* AD 1100 to possibly as late as AD 1800. In comparison to other recently excavated sites (discussed below) this is a long and unbroken time scale which emphasises the significance of the Papa Stour assemblage. However, the use of coarseware may have ended some time in the 18th century, if not before, when modern ceramics became more readily available. During about 600 years of production, it varied little in fabric, form or finesse; there was no significant alteration of rim shape, sherd or vessel weight, of vessel form, of production or even of vessel function over time. A larger number of sherds or more reconstructed pieces may have altered the picture, but the assemblage basically represents a collection of vessels which were primarily made for cooking food; even the smallest ceramics may have served time in the hearth along with the larger cooking pots. Only the rare ceramic lamp was different and used to light activities around the work place.

	PHASE										
TRENCH	Natural	2	3	3/4	4	4/5	5	6	7	u/s	Total
H	1	15	7	0	16	1	0	0	1	0	41
K, KA	0	9	19	32	135	36	55	2	11	7	406
E, EJ, EK	0	0	4	0	39	9	1	3	2	0	58
J/LP/R	1	6	14	0	16	23	30	31	16	0	137
u/s	0	0	0	0	0	0	0	0	0	4	4
TOTALS	2	30	44	32	206	69	186	36	30	11	646

Table 13a
Coarseware - sherds total by trench and phase

TRENCH	Rims	Body sherds	Bases	Lamps	Total weight	Total
H	10	27	4	0	833	41
K, KA	96	245	64	1	5656	406
E,EJ,EK	15	37	5	1	1037	58
J/LP/R	30	88	18	1	2888	137
u/s	1	2	1	0	71	4
TOTALS	152	399	92	3	10490	646

Table 13b
Coarseware - sherd types by trench (weight in Grammes).

COMPARISON WITH OTHER SITES

This medieval assemblage of coarsewares is one of the largest to have been found in the Northern Isles to date, only surpassed in numbers by the comparable 'Norse' pottery from Jarlshof, Shetland (Hamilton 1956). The latter site produced an almost unbroken sequence of prehistoric coarsewares from the late Bronze Age, through the Iron Age, culminating in a late series of coarsewares at the beginning of the Norse period. Pottery is not recorded from the 9th to 11th centuries but occurred again at Jarlshof in the later Norse and medieval settlements of the early 12th century to the end of the 13th/beginning of the 14th century. 954 sherds were classified as Norse (in addition there were 63 sherds of wheel-thrown medieval wares). The author suggests that medieval coarseware came into general use during the 12th and 13th centuries (*ibid*, 188).

The late Norse pottery from Jarlshof (*ibid*, plate 36) is of barrel-shaped vessels with inverted rims, wide, open-mouthed pots with everted rims and small tapering-sided vessels with almost square or rectangular mouths, resembling steatite vessels. Grass tempering was common and the pottery was hard fired. The pots differ slightly in shape from those at the Biggings, but are of comparable heights and widths. Vessels with square mouths, square-sided pots, are similar in height to the straight-sided vessels from the Biggings, and large open bowls with inverted or flat rims are very similar to the tapering-sided vessels. Hamilton describes the most numerous type from Jarlshof as being a *craggan* pot with everted rims similar in appearance to a jam pot; this type is not represented at the Biggings, but seems closely to resemble a vessel form from the Iron Age and wheel-house periods (Hamilton 1956, 188, and comparison of plate 16 with plate 36).

There is little additional comparative material from other Shetland sites. The Norse sites of Underhoull and Sandwick, both in Unst, produced no coarse ceramics of Viking Age or later, and it is suggested that "the Shetland Vikings apparently did not make ceramics, although contemporary Anglo-Norse and Hiberno-Norse Vikings were assimilated by pottery-making cultures.." (Bigelow 1989, 186). There were also no locally produced ceramics of medieval date among the extensive collection of imported wares occurring at Scalloway Castle (Lindsay 1983; Blackmore below).

In comparison with the situation on Shetland, recent work on Orkney has shown that coarsewares existed on sites from the late Norse period to the Middle Ages; however, not all the evidence is fully published. Grass-tempered pottery of 12th-/13th-century date, has been found during the last phase of settlement at Pool, Sanday (Hunter 1992, 132), and at the Norse monastic settlement on the Brough of Deerness (Williams 1987, 336-8, fabric 2(b)). At the latter site, although medieval sherds were few, handmade, flat-bottomed and straight-sided vessels were suggested. Grass-tempered wares were also found at Kirkwall, during the 1978 excavations (MacAskill 1982, 405-406) where the majority of sherds were from handmade cooking pots of medieval or earlier date. In these examples the rims are straight or everted, but the sherds represent more bulbous vessels than those at the Biggings. Coarse pottery was also found in Norse contexts, dated to the end of the 10th century and possibly the 11th century, from the Brough of Birsay, but none was grass-tempered (Hunter 1986, 185).

Slightly further afield, fragmentary coarseware sherds with heavy grass temper have been found at Freswick, Caithness (Batey *et al* 1984, 96-97, 105, 107; and Gaimster 1995). They are similar to the Biggings' assemblage in being described as having flat bases and everted rims; there were also straighter-sided vessels and a possible globular form. In addition bag-shaped vessels with rounded bases, some handles and a few decorated sherds were also found. Batey suggests they are of a possible 11th-/13th-century date, of local manufacture and most likely simple cooking pots 'with short life spans'. Chronological separation of the forms was not possible.

Another interesting area to compare with the pottery situation on Papa Stour and Shetland in general, is that of the Hebrides, which has sites with long pottery sequences. Recent studies of the complex ceramic situation in this island group has largely been carried out by Lane (1990, 129) who stresses that little detailed work has taken place on post-Viking ceramics which, for example, make up a significant part of the pottery assemblages at such sites as the Udal. On the islands, pottery sequences can span 2000-2500 years with production lasting until the 19th century; the technology of production, and sources of clay seem to have largely remained unchanged; pots were fired in simple kilns or bonfires and they were exclusively handmade. Viking pottery is also known and some of it has grass marks; the forms may have continued into medieval and later periods (*ibid*, ill 7.6), but differ from those from the Biggings.

The medieval and later hand-made coarsewares of north and west Scotland with heavy grass-tempering is known as *cragganware* (Quaill 1979, 39). An extreme example of this type of ware, which is probably a direct descendent of medieval and earlier ceramics was the *craggan*, a hand-made local vessel of poorly fired clay, which was exclusively used for cooking pots on St Kilda until the 19th century (Steel 1975, 72; see also coarse pottery in Emery 1996).

DISCUSSIONS AND CONCLUSIONS

The assemblage from the Biggings, although far from unique, presents much needed additional information on the form and use of coarse ceramics from the early medieval period onwards. The study of these ceramics across the whole area of Atlantic Scotland is very much neglected and from the comparison of sites producing similar wares and forms, it would seem that a broader investigation of the whole subject is needed, as has been suggested (Lane 1990, 123). Conclusions as to form, function and dating from the published examples cited above are generally tentative, due to the small number of sherds, their small size, and in some cases, poor stratification. Reappraisal of the ceramic results from older sites such as Jarlshof may be of some use in adding to the information that is to come from the publication of sites with long pottery sequences such as those on the Hebrides.

Although almost all the sherds from the Biggings show evidence of grass-tempering it was not considered the only diagnostic feature of this assemblage. There is the question as to when organic temper was first used; Hunter (1993, 280) suggests that grass-tempered pottery is normally accepted as being Norse in origin–but at his site of Pool on Sanday, Orkney, grass-tempered sherds appeared in pre-Norse contexts. This was also the case at the complex Iron Age site of Howe, also in Orkney (Ross 1994). Research into the use of organic temper in ceramic assemblages in Northern Scotland may not add much more information to our understanding of medieval pottery, apart from why it was used to the extent it was, and to emphasise the continuation of local pottery traditions from the Iron Age for at least another 1000 years. The persistence of the use of organic temper is also not fully understood; better quality temper such as steatite was available at the Biggings, but rarely used; grass-tempering was still used at Pool during the 12th-13th centuries, during the last phase of settlement, along side pottery which was steatite-tempered (Hunter 1991, 132). The function of organic temper needs to be better understood, especially when considering that the main vessels produced were cooking pots.

Coarseware cooking pots of medieval date have been found, in addition to the Biggings, at Jarlshof, Kirkwall, and Freswick, and of more modern date from the Hebrides and St Kilda. The situation of medieval cooking pots on the Hebrides is at present unclear. What is of interest, is that cooking pots seem to have been the main form produced in coarseware. Their form can vary slightly, as the examples from the Biggings and Jarlshof show; the pots being not particularly large, relatively thick walled and undecorated. Whether they suffered extensive use, or as Batey (Batey *et al* 1984, 105) thinks, were relatively short-lived, is a question that needs to be addressed. Again, their persistence into relatively modern times, to the 17th century, or later, on Papa Stour, needs to be explained, especially when other forms of contemporary vessel were used such as steatite cooking pots and, later, the continental redwares. The function of the small straight-sided pots needs clarifying in the light of comparative vessels from other sites. Their uses may have been varied; as handleless tankards or mugs; as storage jars, or as the evidence suggests, as simple cooking pots.

The small square-mouthed vessels present at Jarlshof were not found on Papa Stour. Although some of the more irregular rims at the Biggings may suggest square or four-sided pots, the absence of any additional evidence, ie, vessel or rim corners, makes it very doubtful whether these pots existed at all. The Jarlshof examples may have emulated steatite vessels which were also present at the site (Hamilton 1956, 188, fig 84). Four-sided steatite vessels were found at the Biggings, but apparently not copied in clay (see above).

From the available literature it would appear that the handled lamp and the lamp fragments (illus 74-6) from the Biggings are rare, and not presently recognised from other sites with contemporary collections. They do show, however, that when necessary other simple forms of pottery could be made, and were made during Phase 3 *c* AD 1250-1400. Like the four-sided vessels from Jarlshof, clay lamps may have been made in response to the fine steatite lamps found at the Biggings, eg SF 434 and SF 521, although they were found in a later phase; both are from Phase 4.

The pottery on Papa Stour is crude even when compared to prehistoric material, and this suggests that pottery making techniques deteriorated in the early historic period. The evidence from the Biggings will not contribute to the debate on whether the Shetland Viking Age was originally aceramic or not. Suffice it to say, that pottery was present at the site as soon as buildings were being used from about AD 1100. Although the ceramic production is primitive in comparison to the finer wares imported to the site, it suggests that it carried on traditions established in prehistory into almost modern times.

It must be questioned as to why the inhabitants at the Biggings continued to use and presumably to make their coarseware in the light of imported finer ceramics such as Paffrath ware and that from Lower Saxony or England (see below). Similar questions must be asked at all sites where coarse and finer wares existed together. The obvious answer is that although imported finer goods (including metal wares) were available, their numbers may have been limited and their costs prohibitive; and cooking pots may not have been an item of trade in the

early medieval period. Infrequent visits by merchant vessels (see sections **2** and **3**) may have necessitated experimentation and improvisation using local resources and centuries old traditions to supply the vessels needed for everyday use. It was only during the latter part of Phase 4, in the late 16th and early 17th centuries, that coarseware use at the Biggings peaked and then began to decline. This was due to the improved availability of continental redwares, serving both hearth and table needs (see **7.3.3** below). Coarsewares continued to be used for as much as another 50-100 years at the site but in a declining capacity, to be finally replaced by mass-produced iron or copper cooking pots and machine-made ceramics.

7.3.2 STONEWARES AND OTHER MEDIEVAL CERAMICS

In contrast to the local coarsewares, this group represents vessels imported into Shetland from the Continent as well as from England. Of the identifiable fragments, jugs were the main type of vessel used at the Biggings (details in archive). From a total of 31 sherds, 11 are of near-stoneware and stoneware from the Lower Saxony region (and one unspecified), two sherds are of Paffrath ware, one is from Yorkshire, one is East Anglian, nine fragments are English (not specified further), one is Medieval (region unknown), one is a piece of Reduced Green Glaze, and four are uncertain. All the pieces are very small and very fragmentary.

PAFFRATH WARE

Lyn Blackmore

Two sherds of an early continental ware were found in Trench E on the western half of the site. The earliest, SF 1456 (illus 77) came from the upper fill of a pit in Phase 3-4 which disturbed Phase 2 deposits. The later sherd, SF 924, was found on the wooden floor of the Phase 4 dwelling-house. It is possible that both sherds are from the same vessel. The ceramic is hand made, with sooting on the external surface.

The sherds are of Blue-Grey ware, otherwise known as Paffrath, which was produced near Cologne (Vince & Jenner 1991, 103-4). From examples found in London, it is broadly dated to AD 1050-1200. Like Pingsdorf-type ware, it was traded around the North Sea and both are found in Trondheim, Bergen and Oslo in contexts of the 12th and early 13th centuries (in Molaug 1987, sherds of this ware were largely round-bottomed pots and large cooking pots, p234-235). However the most common form is the globular jar or ladle, basically a *kugeltopf* with applied hooked handle. Confusion between Paffrath ware and Low Countries Grey Wares seems to be great, and sherds (identified as Low Countries Grey Wares) found on several sites along the east coast of Scotland, including Aberdeen, Perth and Elgin, may need confirmation.

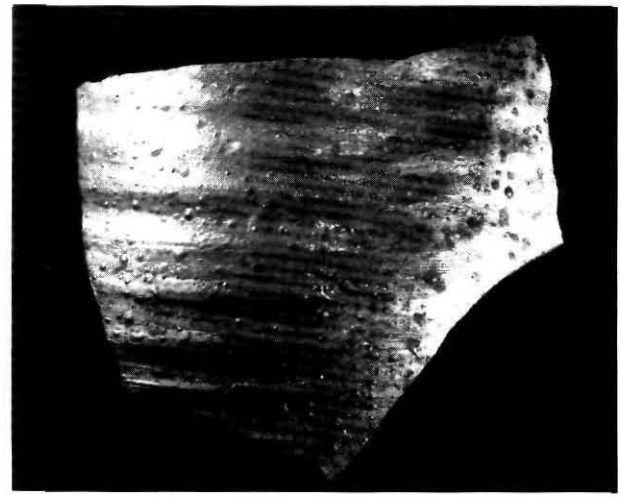
LOWER-SAXON STONEWARE AND NEAR-STONEWARE

Hans-Georg Stephan

An origin in Lower Saxony seems certain for the majority of the 11 sherds of this category, even without analytical evidence. Although the different production centres cannot be distinguished–the sherds are mainly atypical body sherds–it is very likely that most of the sherds were made at the potteries in Coppengrave or Duingen (Stephan 1981a). These seem to have been the main centres for export, particularly from the 14th century onwards. The sherds range in date from AD 1250-1450 to perhaps the 16th century.

Even though the sherds are too small for firm reconstruction of the vessel shapes, it is clear that they belong to small to medium-sized multi-use jugs. Some have an iron-wash, eg SF 809 Phase 3, which is a typical feature of Lower Saxony wares. Others, eg SF 848 from Phase 4, are light in colour, a product of oxidised firing, which occasionally

illus 77
Paffrath ware sherd SF 1456, interior; reproduced at 3/4.



illus 78
Near-stoneware fragment SF 889; reproduced at 1/1.

occurred from AD 1250 to the 19th century, but especially in the early contexts from Grossalmerode. The sherds also represent thin-walled vessels, which are again typical for Lower-Saxon medieval pottery. Only one sherd, SF 889 Phase 3 (illus 78), a fragment of near-stoneware with protruding blobs of iron, is not from Coppengrave or Duingen. It is more typical of Bengerode/Solling, although manufacture in the Reinhardswald (now Hessia) cannot be excluded. SF 930 from Phase 6 is the only sherd which might be Rhenish, but in view of the fact that it is near-stoneware, and that all the other imported sherds are from Lower Saxony, it is likely that this too is from Lower-Saxony.

The sherds were primarily associated with phases 3 and 4 with the earliest occurring in the Phase 3 *stofa*. Sherd SF 889 was located below the wooden floor, and SF 896 on the floor. Further sherds, SF 809, were found in pits (Hi14/16) associated with the Trench H *skáli* during Phase 3-4. In Phase 4, SF 807 was found on the wooden floor of the dwelling-house, but all other fragments came from destruction levels of the Phase 3 *stofa* eg SF 848; a Phase 4-5 pit, SF 863; and reworked into Phase 6 contexts eg SF 844, SF 888 and SF 930.

German stonewares were present at both Scalloway, Shetland, and Kirkwall, Orkney, but not in any significant numbers. The paucity of stoneware from Scalloway suggested to the author that 'pottery imports arrived at Scalloway as a by-product of trade in more important goods and that there was not a sufficient market to merit the importation of better quality wares in quantity' (Hall & Lindsay 1983, 573). Stoneware vessels at the Biggings are not represented in any significant number, but in spite of this, high quality wares are present. Jugs were obviously the preferred types of vessel and, as described above, were found *in situ* on the floors of the *stofa* in Phase 3 and of the dwelling-house in Phase 4.

OTHER MEDIEVAL CERAMICS

Robert Will

Very little medieval material (only 13 sherds) apart from the stonewares was recovered from the site. These again represent imported vessels probably all from England, which would have supplemented the locally made coarseware and steatite cooking pots, and provided additional ceramic forms which were better suited to the table rather than the hearth.

The earliest sherds were found in Phase 3, eg SF 851, below the wooden floor of the *stofa* and in the ashes of the *eldhus* hearth, where SF 810, a badly abraded grey sherd with brown applied decoration, has an unknown form. Other sherds were found in Phase 4. SF 341 was located in the pit JL55 and SF 812, fragments of a Yorkshire jug with a thumb-decorated base (illus 79), came from a dump in Trench K (K98). This jug possibly dates to the 14th century, but due to the poor condition of the glaze and without petrological analysis, the specific Yorkshire kiln cannot be identified. The rest of this group came from disturbed contexts in Phase 5 (SF 815, SF 820, SF 828 and SF 957) and in Phase 7 (SF 869). The former have a similar fabric and may be from the same vessel, largely found in Trench K. The latter was a spindle-whorl made out of a piece of 15th-century Reduced Green Glaze, probably a jug. This material was commonly in use from the late 14th century through to the late 15th or early 16th centuries, and has been found throughout Scotland on most medieval sites, but as yet no kiln has been found (Haggarty 1980). The majority of sherds were small and atypical body sherds. The dating of all these sherds lies between the 14th and 15th centuries.

illus 79
Fragment of a Yorkshire jug with a thumb-decorated base.

7.3.3 THE NORTH GERMAN/SOUTH SCANDINAVIAN REDWARES

Lyn Blackmore
A preliminary analysis was made by Robert Will

The excavation at the Biggings 1977-90) yielded a total of 356 redware sherds (4.24 EVEs) mostly from the main area (Trenches E, J/L/P/R, H and K); a few scattered sherds were also found in trenches M and S (see chapter **5** sections on the location and dating of the site). These were mostly recovered from the uppermost levels, but there are significant groups from Phases 5 and 4, while a few sherds are from contexts assigned to Phases 2 and 3. Some of the latter are stratified, but others are intrusive. The sherds vary in size, but most are small and in poor condition. A few are burnt, while the majority, largely due to the geographical location of the site, are abraded or have a 'sand-blasted' roughness; in some cases the glazes are missing altogether.

A range of forms is represented, some plain, others slip-coated or with slipware decoration, but the dominant forms are straight-handled tripod pipkins (hereafter referred to as *stjertepotter*) from northern Germany or southern Scandinavia. These are considered in the light of an ongoing study of similar redwares found on excavations of the Archbishop's Palace in Trondheim, Norway (Blackmore in prep); findspots in Scotland include Kirkwall (MacAskill 1982) and Scalloway Castle (Hall & Lindsay 1983). Dishes are the second most common type, followed by a group of sherds which derive from pipkins or porringers, some with unusual internal decoration; smaller sherds have been listed under the most likely category. The following report, which

Trench	Phase Natural	3	4	4/5	5	6	7	u/s	Total
H	2	1	0	7	0	0	3	0	13
K, KA	0	0	4	5	89	1	44	0	143
E,EJ,EK	0	0	22	14	0	4	51	0	91
J/LP/R	2	10	5	0	5	15	25	0	62
M	0	0	0	0	0	0	0	43	43
S	0	0	0	0	0	0	0	4	4
TOTALS	4	11	31	26	94	20	123	47	356
EVEs	0.07		0.2	0.28	1.75	0.58	1.04	0.32	4.24

Table 14a
Continental redwares - sherd totals by trench and phase (u/s are unphased sherds from Trenches M and S).

Type	Phase Natural	3	4	4/5	5	6	7	u/s	Totals	EVEs
Pipkin	3	9	23	18	71	14	92	26	256	2.68
Cooking pot	0	2	5	0	0	1	0	0	8	0.08
Pipkin/porringer	1	0	2	6	13	2	7	4	37	0.58
Dish	0	0	1	2	10	2	12	15	42	0.63
Porringer	0	0	0	0	1	1	4	0	6	0.11
Dish/porringer	0	0	0	0	0	0	1	0	1	0.12
?Jug	0	0	0	0	0	0	2	0	2	-
Storage jar	0	0	0	0	0	0	1	0	1	0.04
Miscellaneous	0	0	0	0	0	0	2	0	3	-
TOTALS	4	11	31	26	94	20	123	47	356	4.24

Table 14b
Continental redwares - sherd totals by form and Phase (u/s are unphased sherds from trenches M and S).

comprises a summary of the possible sources of the redwares, comments on the fabrics, forms and distribution of the sherds, a discussion and a conclusion. Lists of the finds by stratigraphic location and form are available in archive, Table 14b summarises the distribution of types.

REDWARE AND SLIPWARE PRODUCTION CENTRES

The main areas of redware production relevant to this assemblage are Denmark, coastal southern Sweden, the present counties of Schleswig-Holstein, Holstein, the Weser and Werra valleys and the Pottland in Germany. Among the main problems in distinguishing the products of different potteries in the area under review are the greater interest hitherto shown in the faience and porcelain of the area, the dearth of published kiln sites dating to before 1700, the general similarity of traditions and fabrics, the lack of museum inventories (Kruse 1987, 9; 68) and methods of classification, which being based on fabric colour and glazing, have often failed to differentiate between 'local' redwares and imports from the Low Countries (this however is improving through the important work in Lübeck, Lüneburg and in Lund). The following summary is intended to present the range of possible sources of the pottery found at Papa Stour; much is abstracted from a recent survey of production centres by Ian Reed (forthcoming in Blackmore in prep). Dating is further considered under form types and in the discussion.

GERMANY

The present border between Germany and Denmark is further north than it was in the 16th and 17th centuries, when it ran between Kiel and Friedrichstadt. Redwares found at sites now in the northern part of Schleswig-Holstein thus have a close affinity with Danish wares, although the same traditions extend southwards. The main potting areas in the north-western part of the county were the Altes Land, to the north-west of Hamburg, and Dithmarschen. On the eastern coast, pottery was produced in the area around Flensburg, at Kiel and in the Probstei, at Schönberg, Preetz and Lütjenburg (Kaufman 1979, 19); Preetz was especially important in the 17th and 18th centuries, if not earlier (Kruse 1987); a smaller centre is Plön. The *stjertepotte* appears to have been the standard vessel form in all the potteries in Schleswig-Holstein (Kaufman 1979, 62). Excavated finds include an important group of late medieval and early post-medieval redwares from Segelmacherstrasse, Flensburg (Westphalen 1989), and kiln wasters from Preetz (Kruse 1987). In addition to plain redwares, slip-decorated vessels were produced across this whole area; among the forms produced are dishes of many shapes and sizes, plates, cooking pots, pipkins, tureens, baking moulds and colanders (Kaufman 1979, 21). Most known industries date from the late 17th century; it is uncertain how early they started or how widely the wares were distributed.

To the east, redwares in the same tradition occur frequently across the city of Lübeck (Falk 1987; Schulz 1990; Brabant *et al* 1993), and the recent discovery of pottery wasters dated to the 17th/18th centuries on a site in Dankwartsgrube (Falk 1994), lends support to the hypothesis that

stjertepotter and other forms were produced in the city during the late medieval and post-medieval periods (Hartmann 1978, 108; Kenzler & Thode 1993, 237).

To the south-west of Hamburg, redware production took place in Lüneburg, where redwares are commonly found (Laux 1982; Kühlborn 1995) and where a pottery producing plain and slip-decorated redwares has recently been excavated (Kühlborn 1996; Ring 1996; E Ring pers comm). Other important potting centres were upstream from Bremen and Hannover (Kühlborn 1995, karte 6). Here redwares were made in the Werra valley, while Weser whitewares were produced in the 'Pottland' of southern Lower Saxony; the latter can be pinkish red (Hurst *et al* 1986, 242-259; Reed 1990, 37-8). *Stjertepotter* were made in this area from *c* 1500 (Stephan 1992, 15-16); the 17th-century forms are often decorated with slip and rouletting (Stephan 1981b, 82, 87; Stephan 1992 37ff; Hurst *et al* 1986, 244, 251). The most important period for both Werra and Weser wares was between *c* 1580-1620, when slip-decorated dishes and bowls were widely exported, both across the North Sea and to Scandinavia. Later slipwares from these areas have simpler decoration. From the 17th century onwards, slipwares were also produced in the Lower Rhineland (Hurst *et al* 1986, 262-7; Naumann 1988; Reed 1990, 38) and in the area of Wildershausen to the south-east of Oldenburg in Lower Saxony (Vosgerau 1981). Both were distributed widely across this area and into Holland; the former occur rarely in Britain, but the latter have not yet been recognised in England or Scotland (Molaug 1981, 61; Hurst *et al* 1986, 260-2).

DENMARK

During the mid 16th century, pottery workshops were established in a number of Danish towns (Bencard & Roesdahl 1972) and production appears to have flourished during the late 16th and 17th centuries. Towards the end of the 16th century, Næstved (South Zeeland) appears to have been the leading centre; the wares include both glazed and unglazed redware bowls, plates and *stjertepotter* of various sizes; slip-decorated vessels and tin-glazed tiles have also been found (Ehlers 1967, 29-30; 32). Copenhagen seems to have emerged as a production centre in the 17th century; one of the last city-based workshops was at Adelgade *c* 1659, where wasters of *stjertepotter*, tripod skillets, cauldrons and oil lamps were found (*ibid*, 33; Molaug 1981, 61). Plain redware pipkins, cauldrons, single-handled bowls and slipware dishes were also produced at Aalborg in the early 17th century. The first assemblage to be studied in detail was that from Stakhaven, on the island of Dragør, which dates from the late 15th century onwards (Liebgott 1979). Other excavated groups are those from Ribe (Madsen & Schiørring 1981), Sandhagen (Bender-Jørgensen 1982) and Store Valby (Steensberg & Christensen 1974). It is unknown how widely these wares were distributed outside Denmark.

SWEDEN

Until 1658 most of southern Sweden formed part of the kingdom of Denmark, and much of the pottery found there (both medieval and later) reflects both Danish and Baltic influences. Pottery use became more widespread from *c* 1500, and especially after the Reformation, when redwares became increasingly common. Plain dishes appeared some time after 1550, and the first slip-decorated examples occur in the later 16th century (Elfwendahl 1995, 23). By the mid 17th century there were potteries in 30 towns, and 100 years later this had increased to 121 workshops in 62 towns (for summaries see *ibid*, 25-27, 31-32; Reed, forthcoming). One of the most common products was the tripod pipkin which was still produced during the 18th century; another popular 17th-century form was the tripod frying pan or skillet (see Wahlöö 1976, *passim*). At Halmstad, on the west coast, resident potters are documented in 1635 and from 1662 (Augustsson 1985, 91). Here, various waster dumps have provided evidence for the production of double-fired tripod pipkins and slip-decorated dishes as well as stove-tiles; it is not known whether any were produced for export. The redwares are slightly different from those described below, but the slipwares are very like those produced in the Werra and Weser regions of northern Germany, suggesting that the medieval industry was revived by immigrant potters (*ibid*, 91-2). Large assemblages of plain and slip-decorated redwares found in Lund suggest local production, although this remains to be systematically studied (D Gaimster pers comm). On the east coast, waster dumps dated to the 1640s have been excavated in Kalmar; these contain a range of pipkin rims, some like those described below (Blohmé 1995, 87, figs 4-8).

NORWAY

No pottery was produced in Norway between the Viking period and the early 17th century, all the pottery used there being imported. At present, the largest published groups of post-medieval redwares are from Oslo. Most seem to be imports from Holland or north Germany/southern Scandinavia (Molaug 1977; 1979; 1981; 1987), which are also well represented in Bergen and Trondheim (Reed 1990, 42). It is here that the earliest reference to native production is recorded (1606/1607), but the next is not until *c* 1700, when a German potter from Flensburg had settled in the town. Thereafter Trondheim was an important centre, especially for slipwares, which were distributed across Norway; the forms are clearly influenced by the north German/south Scandinavian wares described above and below. Single potters are mentioned in Bergen in 1636 and in Stavanger in 1638 (Opstad 1990, 90), while a pottery was established in Oslo *c* 1718 (*ibid*, 24; 52). In the late 18th century Sandnes, near Stavanger, became established as a brick-making and potting centre (*ibid*, 91), and this industry thrived well into the 20th century. Little or nothing is known of the wares produced in Bergen, Oslo or Stavanger, but it is certain that no Trondheim wares are present at Papa Stour (see below).

LOW COUNTRIES

Dutch redware cooking vessels and North Holland slipwares were widely exported across north-west Europe (for descriptions see Hurst *et al* 1986, 130-75) but none are present in the Papa Stour material. Some of the slipwares found on the site could be from Limburg, where 18th-century kilns have been excavated at Gennep (Mars 1991), but it would seem that this industry, which was closely allied to the Rhenish slipware tradition, was mainly aimed at local/regional distribution.

FABRICS

While it is possible to isolate Dutch wares by fabric alone, the redwares produced in North Germany/Southern Scandinavia are notoriously difficult to characterise since the geology of much of this area is the same (Lindsay 1983, 567; Blackmore in prep). This has been borne out by initial scientific analyses. During the study of finds from the Archbishop's Palace, Trondheim, 30 samples were analysed by Inductively Coupled Plasma Spectrometry, a form of elemental, or compositional analysis (Thompson & Walsh 1989; Walsh 1995); of these, five were made in Trondheim, the remainder imported. 20 of the imported sherds were also examined in thin section (Vince 1995). This showed that the local Trondheim wares can be readily identified, as they are much finer than the southern wares and form a chemically discrete group, but both techniques failed to find clear groupings amongst the imported wares. Thus although some macroscopic differences between coarser redwares can be observed (finds from Lübeck, for example, are on the whole finer than the imported redwares from Trondheim), it has so far proved difficult to distinguish between them scientifically.

All the redwares from Papa Stour are of iron-rich clays which (unless burnt) are evenly fired; most have an orange sandy body. They were found, (at x20 magnification), to be virtually identical to the imported redwares from Trondheim which have been described (Vince 1995) as containing: rounded flint (mostly to 0.4mm), sometimes coated with an iron-rich compound, probably the remnants of an iron-rich cement; angular quartz sand (up to 0.2mm); angular flint (occurring sporadically, up to 2.0mm); heat altered glauconite (sparse fragments up to 0.3mm); acid igneous rock (altered felspar and quartz, mostly present as 'sand' grains up to 0.2mm; accessory minerals (non-specific); rounded clay pellets; quartz silt (up to 0.1mm); and mica silt (both biotite and muscovite, up to 0.1mm). These inclusions are of variable size and frequency; most occur in most sherds, but not necessarily in the same combination or frequency. The finds from Kirkwall and from Scalloway Castle also contain variable amounts of sand, mica and ferruginous inclusions; those from Scalloway are

described as 'rich in sub-angular white and translucent quartz grits which can be up to 0.75mm long, although they average *c* 0.5mm' (Lindsay 1983, 567; MacAskill 1982, 409).

An attempt was made to divide the Papa Stour fabrics into fine, medium, sandy and coarse, but this proved difficult to maintain as there is a subtle gradation in the density of inclusions, with no clearly defined boundaries between types. However, both finer and more sandy wares appear to be rare, and the material has thus been treated as one general group. The finer sherds include one or two dishes and the base of a jug in a silty iron-rich buff fabric of unknown origin (SF 887 from Phase 7, illus 80) which has heavy soot deposits. This is not typical of the German redwares, but is unlike the buff wares produced in the Weser area.

illus 80
North German/South Scandinavian redware jug base SF 887

The slipwares may derive from more than one source, but seem to be from the same general geological area as the plain redwares; differences in fabrics do not appear to correspond with differences in treatment (ie slip-decoration or slip-coating). The most striking finds are the pipkin-like forms with internal decoration, a type for which no parallels have been found. If these could be matched, they might point to the origin of the other wares.

Relatively few hollow wares are truly slip-coated (see below); a few appear to be so, but this is probably illusory, caused by a glaze so worn that it has become opaque. One or two vessels seem to have a thin self-slip; these include SF 914 (illus 81) and a pipkin found in Phase 6 (SF 906) and the topsoil (SF 899 and SF 902), while a few burnt sherds also have deceptive white inner or outer surfaces and a black core caused by burning (eg SF 858 and SF860, illus 81). One pipkin leg has patchy red staining on the outer surface, the nature of which is uncertain (SF 1443). Some sherds have a patchy red layer between the body of the pot and the glaze, which can be thicker in some places, thinner or absent in others (eg SF 846, SF 791, SF 796 and SF 769). This trait, which has yet to be explained, has also been noted on a few (predominantly late 15th-/16th-century sherds) from Trondheim (Blackmore in prep). It is likely that this is a chemical reaction caused during firing (see Orton *et al* 1995, 133-5). If a red slip had been deliberately applied, either to enhance the glaze colour, or as a protective coating, as seen on unglazed medieval shell-tempered storage jars from Lincoln (J Young pers comm), one would expect a more even coating.

FORMS

The redwares fall into two stylistic and functional groups: plain wares and slipwares, cooking vessels and table wares. The latter appear earlier and are more common (74% of the total sherds). Both types comprise mainly rim or body sherds with few bases; in no case were a rim and a handle present on the same vessel. Tablewares are mainly slip-coated or slip-decorated; cooking vessels largely comprise plain redwares. As far as possible the latter (both plain and slip-decorated) have been classified according to the typology devised for the undecorated redware cooking vessels from the Archbishop's Palace, Trondheim (EBG= Erkebispegården: Blackmore in prep). In this system, rims were coded 1A, 1B etc (upper case), handles 1a, 1b etc (lower case). The dating assigned to these form groups is provisional, pending the final phasing of the Archbishop's Palace. The distribution of the assemblage as a whole is illustrated in table 14a).

REDWARE COOKING POTS

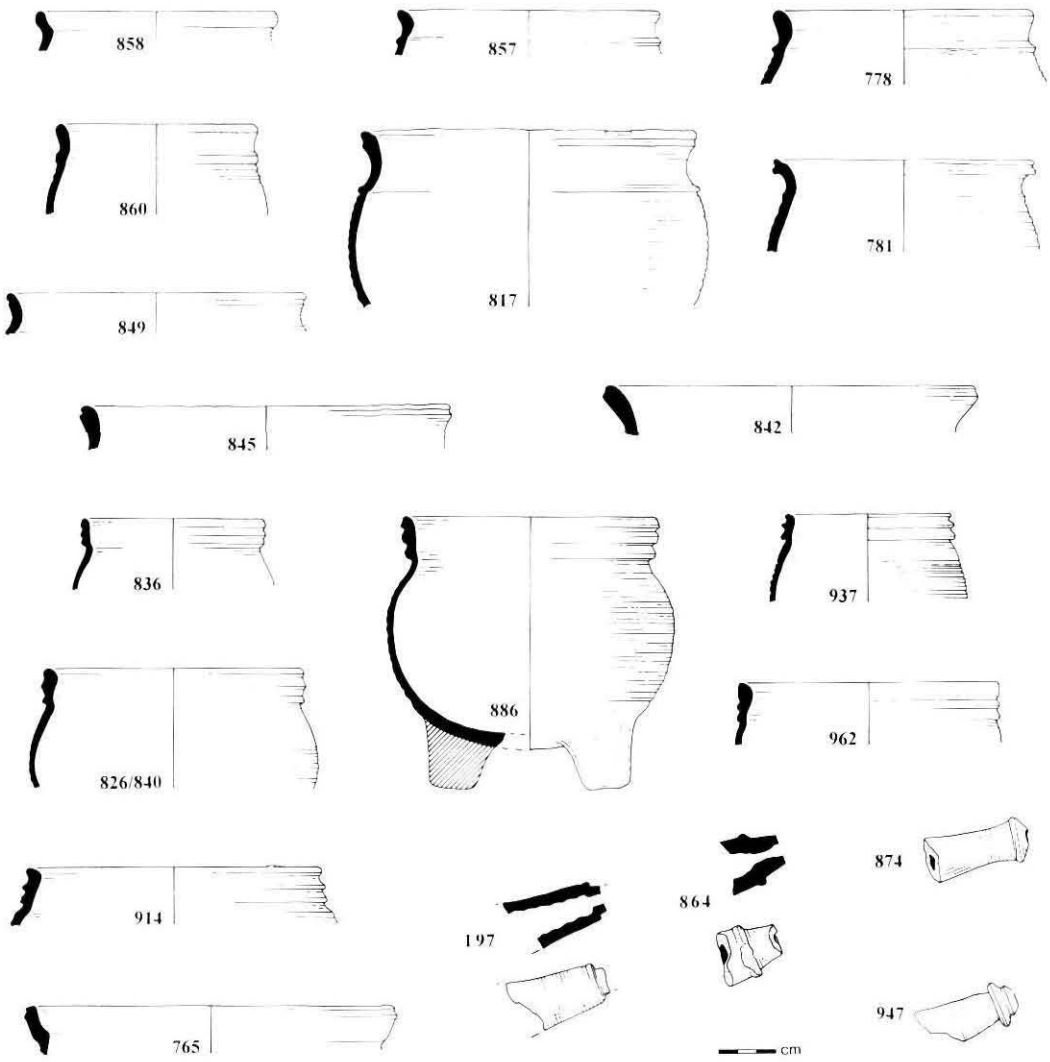
This term is used here for flat- or sagging-based vessels, either with no handle, or with single or opposed looped, rod or strap handles (Dutch/German *Grapen*, Scandinavian *ørepotter*). Seven sherds are probably from cooking pots, including one rim (0.08 EVE). In the assemblage from the Archbishop's Palace, Trondheim, four variants were found (EBG group 1), all probably of 15th-century date, but the type evolves from the greyware tripod cooking vessels of the medieval period. Cooking pot rims of EBG type 1A are rounded; types 1B-1D are everted and lid-seated. The one everted rim from Papa Stour is of EBG type 1B (illus 81, SF 858, burnt: see above). Interestingly, this sherd is from a relatively early context in Trench P (see below). One rim from the Shetland site of Scalloway Castle may belong to this group, although there classed as a mug (Lindsay 1983, 569; fig 6, no 14). During the late 15th century EBG rim group 1 was gradually superseded by rims of EBG types 2A, 2B and 2C, which are inverted, often with stabbed or thumbed decoration. These seem to occur with either loop handles or straight handles (for published examples see Liebgott 1979, figs 61, 62); none are represented here.

REDWARE PIPKINS (*Stjertepotter*)

Straight-handled tripod pipkins with three applied legs seem to have become more common after *c* 1500, although this date may have varied according to the site. They are certainly present in groups dated to pre-1540 in Trondheim, while in Lübeck sherds of the earliest forms are associated with the construction of part of the town wall, dated 1544-1560, where redwares account for *c* 74% of the pottery (Schmitt 1996, 272). The handles are wheel-thrown as cones, with a variety of terminals; they are luted onto the body of the pot, usually secured with a single finger impression on either side, although in Trondheim some examples with paired or multiple impressions have been found. In all, 256 sherds from the Biggings derive from vessels of this type, including 27 rims (2.68 EVES). Of these, 228 are plain redwares (22 measurable rims, 2.24 EVEs); slip-decorated sherds are discussed below. Most have a predominantly clear internal glaze with green or brownish tinges, but some have a green-brown glaze, while a few have a dark green glaze. In Trondheim, dark green internal glazes appear to be a feature of earlier wares; they are less common on later 16th- and 17th-century vessels, although reappearing in the later 17th century. External glazing is rare and appears in most cases to be accidental. The dimensions of the plain pipkins at Papa Stour are hard to ascertain due to the fragmentary nature of the material, but rim diameters range between 100mm and 200mm in diameter. The main cluster (eleven rims) falls between 140-160mm in diameter. Only four are larger (180-200mm); seven are smaller (100-130mm). The sample is limited, but there is a possible increase in vessel size with time.

The earliest rim forms which are never associated with a loop handle are EBG type 2D, and the collared rims of EBG group 3, which seem to have developed from EBG type 1D. The inverted and internally expanded rim type 2D is found on vessels with a bowl-shaped profile and a cordon between the body and the rim; the rim diameter is greater than the height, and usually corresponds with the maximum girth. Classic examples of this type are found at Aebelholt in Denmark, where they were dated to *c* 1500 (Liebgott 1979, fig 209). None are present on Papa Stour, and they appear to be absent from, or very rare, at Scalloway and Kirkwall.

In the mid to later 16th century, rim type 2D developed into the grooved rim type 4A (German *Dornrand*) which is found on plain vessels of



illus 81
North German/South Scandinavian redware pipkins. Rim types: 1B (SF 858); 4 (SF 857, SF 778, SF 860, SF 849, SF 817, SF 781, SF 845, SF 842); 5 (SF 836, SF 886, SF 937, SF 826/840); 5/7 (SF 962, 914) and 8 (SF 765). Handle types 2/3 (SF 197, SF 864); 4a (SF 874) and 5c (SF 947).

similar proportions to group 2, but with a deeper, more rounded form and a distinctive shoulder cordon at the junction of the rim and body; below this the vessel wall has a band of rilling. The first form, EBG rim type 4A, is inverted and can be internally expanded (cf Molaug 1987, fig 27, nos 1, 2). One rim from Papa Stour could belong to group 2 (illus 81, SF 857), but the angle of the shoulder suggests that, like SF 778 it belongs to type 4A; two rims from Kirkwall are of this type (MacAskill 1982, fig 8, nos 31, 32). Rims of EBG type 4B are more upright and are not internally expanded; type 4C is everted while type 4D is irregularly everted; a range of subtle variations is found (cf Molaug 1981, fig 5). In Oslo this rim group was not present before 1540, and probably first appears after 1567. At the Archbishop's Palace, Trondheim, it is present before 1590, but it is currently uncertain how much earlier. At Lüneburg this form was present in the main fill of a cesspit, dated to the 16th-17th century (Kühlborn 1995, 40, 52), while at Flensburg a general 16th-century date was given (Westphalen 1989, 74-5).

Decoration in the form of a single or a double incised line around the outer rim edge (sub-types i and ii respectively) seems to have appeared on Group 4 rims during the late 16th century. Several rims from Papa Stour have one external groove, but only one has two (SF 949). In all, Group 4 comprises nine rims, of which two are of type 4A, one is of type 4Bi (including SF 849, illus 81), two are of type 4Ci (SF 849 and SF 817), one is of type 4Cii (SF 949) while three are of type 4Di (including SF 845 and SF 842, illus 81). One rim has been assigned to type 4Ci (SF 871), but the pronounced cordon and collared profile are unusual and the form has not been matched elsewhere; it is possible that this belongs to Group 1. Rims of EBG Group 6 are very like those of Group 4, but are elongated, with a more collared profile; they may be decorated with rouletting (cf Molaug 1981, fig 6). It is possible that SF 817 belongs to this group, which would appear to date from the late 17th century.

At Kirkwall and at Scalloway Castle, rims of EBG Group 4 were classed as rim form 3 or 5, while rims of EBG type 6 were classed as rim forms 3, 4 or 5 (Lindsay 1983, fig 6, nos 10-11, 13). Dating was uncertain, but it was thought that these forms were in use by the mid 17th century (MacAskill 1982, 409-10; Lindsay 1983, fig 6, nos 7-9, 12). At Scalloway rims with both single and double grooves on the rim, and single or double shoulder cordons were found. It was thought by

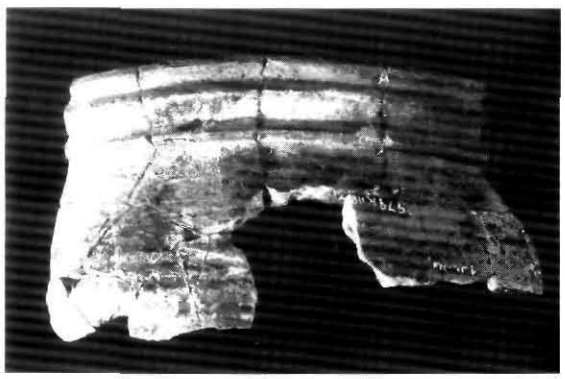
Lindsay that such variations were due to the potter's whim (*ibid*, 568); study of a wider sample, however, shows that they are intentional, although no specific correlation of rim form/diameter and number of grooves/cordons has yet been noted.

Rims of EBG Group 5 have an upright or slightly everted rim with a characteristic triple cordon effect (German *Riefenrand*; cf Molaug 1981, figs7, 8); this form was copied by the Trondheim potters. Rims of EBG type 5A have a short collar, those of type 5B have a deeper collar. Types 5Ai and 5Bi both have a marked kick on the inner wall at the junction of the rim and the shoulder. On rims of type 5Aii and 5Bii, the inner wall flows smoothly from the neck into the body. This rim group is present at Scalloway Castle and at Kirkwall, where it was classed as rim form 1 (Lindsay 1983, 567-8, fig 6, no 1, 2; MacAskill 1982, 410).

The dating of this form is problematic (see Kühlborn 1995, 39-40). At Scalloway it was suggested that the type may not have been common until the 18th century (Lindsay 1983, 568), and this may well apply for that site. In Scandinavia, however, this rim would appear to have been introduced in the early 17th century. In Oslo it is rare before the town fire of 1624, but is thereafter the most common type (Molaug 1981, 58-9). In Trondheim it is present on the Archbishop's Palace in a phase initially dated *c* 1640-1672 (excavations of 1991), but unclear how much earlier it appears. In Lübeck it has been found in contexts broadly dated to the 15th-17th centuries, but it should be noted that these sites were dug in spits, not layers (Schulz 1990, 228; Brabandt *et al* 1993, 237). The same dating was adopted for a cesspit group at Lüneburg, although the bulk of this assemblage was considered to date to the 16th and 17th centuries (Kühlborn 1995, 40). The type is clearly long-lived, and is the most common 18th- and 19th-century form at Preetz and Plön, where it occasionally occurs with a strap handle instead of a straight one (Kruse 1987, 44-5).

The Papa Stour assemblage includes nine Group 5 rims; the short-collared form is the most common, with three examples of type 5Ai (SF 836, SF 937, SF 826/840, illus 82) and four of type 5Bi. No examples of rim type 5Aii are present, while 5Bii is represented by only one vessel (SF 886; see below). One incomplete rim could only be assigned to type 5B. There is some variety in the manufacture of these rims. Some are upright, others slightly inverted or everted; some have an even thickness while others are internally expanded. However, in all the above, the rim is clearly collared and the neck slightly constricted. Two variants are present at Papa Stour where this division between the rim and the body is less obvious. On SF 962, the rim is externally upright but internally expanded, while on SF 914 the rim is quite inverted. These do not fit exactly with Group 5 or with the range of elongated and developed variants of this form which comprise the later EBG rim Group 7. They have thus been listed as rim type 5/7, although the fact that they both occur relatively early in the Papa Stour sequence may indicate that these inverted forms predate the upright ones.

Few legs or handles are present, and most are incomplete. At Scalloway Castle, it was thought that the range of handle terminals might simply result from artistic licence (Lindsay 1983, 567), but there is a broad chronological sequence, albeit with regional variations. The handle typology prepared for the Archbishop's Palace, Trondheim (Blackmore in prep; see Sveinbjarnardøttir 1996, fig 35) comprises nine main types, of which only three or four are present here. Two are of 16th-century form, with a heavy shaft and inset terminal, the ends of which are missing here (SF 197 & SF 864); these could belong to EBG groups 2 or 3). Two others, probably of 17th-century date, are more developed. One with a simple conical *knop* (SF 874), is of EBG type 4a; the other with a double *knop* (SF 947b) is of EBG type 5c. The latter two types are also present at Kirkwall (MacAskill 1982, 410; fig 8, nos 19, 20) and Scalloway Castle (Lindsay 1983, fig 6, nos 15, 16), along with EBG types 6 and 7.



illus 82
Short-collared rim SF 826/840; reproduced at 2/3.

The legs all seem to have been of the straight pointed type, rather than the bowed legs more common in northern Schleswig-Holstein and Denmark, but, as at Kirkwall and Scalloway Castle, both thicker and more slender forms are present (MacAskill 1982, 410, fig 8, nos 21-22; Lindsay 1983, 567, fig 6, nos 20-24). The need at Papa Stour to prolong the life of each pot as far as possible is clearly demonstrated by the presence of legs which have broken and then been ground down to provide a new stable base eg SF 886 (illus 81).

STORAGE JAR

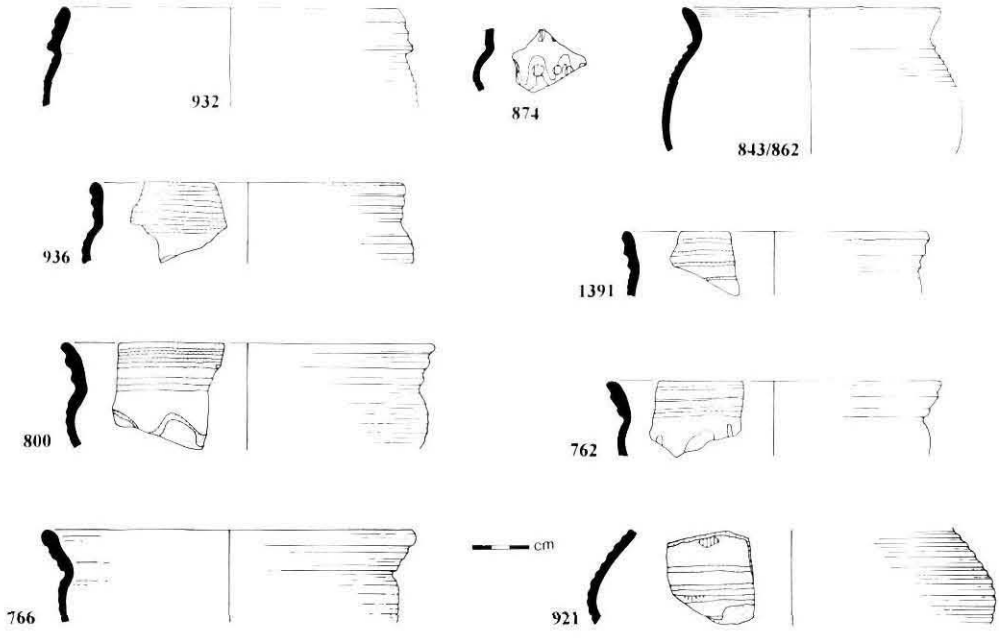
One vessel with a rim of EBG type 8 (SF 765, illus 81, 0.04 EVE), may be from a large jar with one or two strap handles and a flat base, rather than from a pipkin. The everted collared rim form with internal lid-seating is a hybrid development of EBG rim groups 1D and 3, with additional features derived from EBG rim group 4. The type has been found at Kirkwall and at Scalloway Castle, where it was classified as rim type 2 and dated to the mid -17th century or earlier; in both cases the lid-seating was thought to be a vestigial, non-functional feature, due to the lack of wear and absence of lids (MacAskill 1982, 410, fig 8, nos 28-29; Lindsay 1983, 568, fig 6, nos 3-6). At Preetz, in Schleswig-Holstein however, 17th- or 18th-century wasters of pipkins with this rim form have been found together with ceramic lids, (Kruse 1987, 188, 269, Nos 250-5). This form is also present at Lüneburg, where it is termed '*Falzrandtöpfe*' (Kühlborn 1995, 41; Abb 4,1, 4,2).

SLIPWARE PIPKINS

A total of 23 sherds (0.20 EVES) are from a minimum of 13 tripod pipkins which have some form of internal slip-coating. In some cases this is extremely thin and would seem to be a self-slip, possibly applied before the vessel had dried; in others the layer is thicker and must have been applied to the surface of the pot prior to the glaze. Since numbers are limited and most sherds are small, the two have been listed together.

The use of internal slip-coating is typical of the 17th century, although it may have been introduced in the late 16th century. The three measurable rims from Papa Stour range between 110mm (one example) and 180mm in diameter (two examples). Three rims are of EBG group 5; one (SF 820) has a round-topped upright form, while another (SF 875) is everted and flat-topped; the internal slip coating on the latter extends over the outer edge of the upper cordon. The third rim is incomplete. One inverted rim has been listed as a type 5/7 (illus 83, SF 932). This vessel has an internal apple green glaze. Only three other sherds have green glazes, most sherds having a clear or yellowish glaze over the slip; one has a yellowish-green glaze (SF 932). A few vessels with internal slip coating have been found at Scalloway Castle and elsewhere in Scotland (Lindsay 1983, 567), although not at Kirkwall. One base sherd has a trail of slip running down the leg (SF 951); however, as the inner wall is slip-coated, it is more likely that this was accidental rather than that the upper body was slip-coated.

Decoration is present on only two vessels. One small pipkin (illus 83, SF 874) differs from the above and the following, both in form and decoration, having a smooth shoulder with no external rilling. The thin white slip is painted in a zig-zag line embellished with dots of copper oxide; the glaze is clear but reads dark brown over the brick red clay body. Similar forms have been recovered from Scalloway Castle (*ibid*, 571, fig 7, nos 34-6). The other vessel is a standard pipkin of EBG rim



illus 83
North German/South Scandinavian slipwares. Internally slip-coated pipkin (SF 932), internally decorated pipkins/porringers (SF 874, SF 843/862, SF 936, SF 1391, SF 800, SF 762 and SF 766) and a pipkin with external decoration (SF 921).

type 4C (SF 843/862, illus 83); this appears to belong to the same tradition as the pipkins/porringers, as it is internally decorated with two narrow bands of slip under a clear glaze.

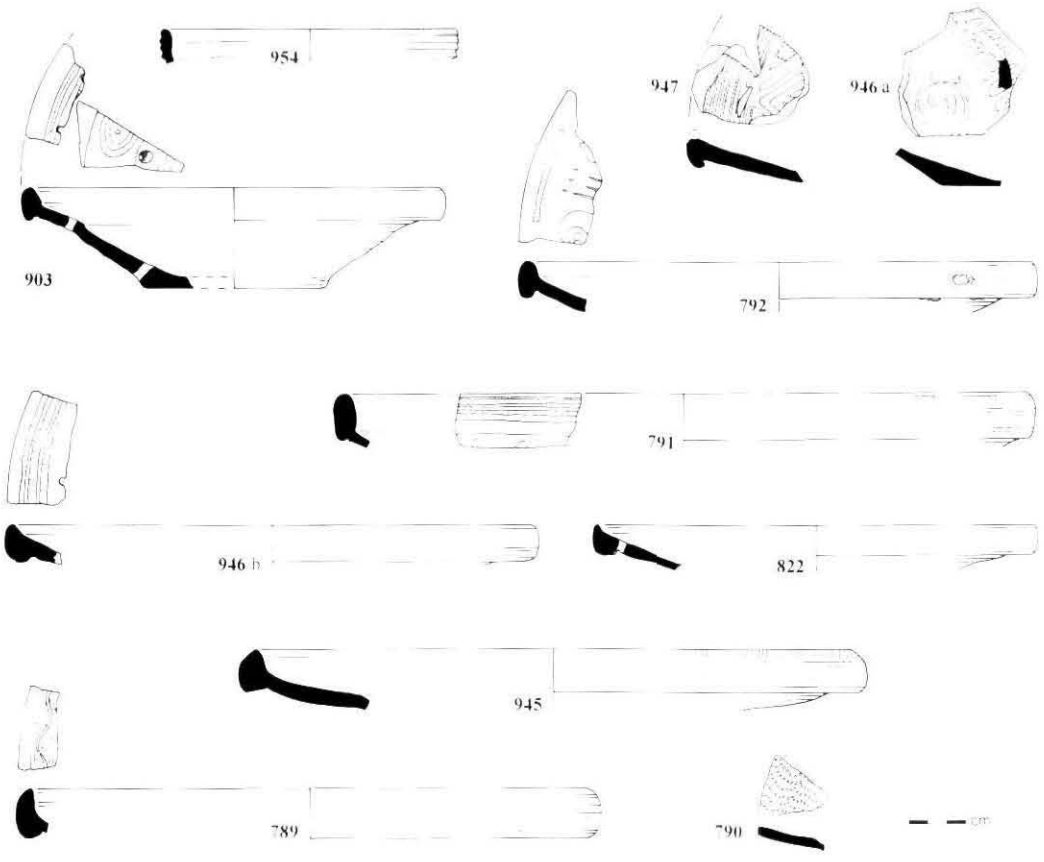
SLIPWARE PIPKINS/LARGE PORRINGERS

A total of 35 sherds (0.58 EVES) are from some 20 vessels with internal decoration of cream slip under a clear glaze. The rims are mainly of everted form, one of classic EBG rim type 4C (SF 843/862, illus 83 and 84), the others of cordoned everted form (EBG groups 5/7, but unlike the plain redware pipkins). The decoration comprises concentric bands of cream slip around the inner rim edge; below this some sherds have wavy lines (SF 936, SF 1391, SF 800 and SF 762; illus 83), sometimes enhanced by the addition of copper oxide giving a yellow and green effect (SF 921). One vessel is so worn internally that nothing can be deduced of the original design (SF 766, illus 85).

SF 843/862 is clearly a pipkin of conventional form, but SF 762, SF 766, SF 800, SF 921, SF 936 and SF 1391 are problematic due to the lack of complete profiles and absence of bases. They differ from pipkins in the angle of the shoulder (which indicates that rim diameters are the same as or greater than the depth), and from redware porringers, which usually have an upstanding or slightly inverted rim (eg Molaug 1981, fig 24, no 1; Molaug 1987, fig 20, no 6; fig 22, no 1: source unstated). Unlike bowls, the body is externally rilled, suggesting a tripod base, but the handle form is unknown and may have been straight or of the looped strap-handled type. The only published parallel found so far for this form of decorated vessel is a single unstratified vessel from Scalloway Castle, apparently of EBG rim type 4C (Lindsay 1983, 569, fig 6, no 25). The absence of continental parallels and the concentration of finds in this area of Scotland are thus of some curiosity, suggesting personal contact with a specific pottery rather than distribution through normal marketing.

illus 84
Pipkin of EBG rim type 4C, SF 843/862; reproduced at 2/3.

illus 85
Rim of slipped vessel SF 766, badly worn; reproduced at 2/3.



illus 86
North German/South Scandinavian slipwares. Porringer (SF 954), bowl (SF 903), trailed slipware dishes (SF 947, SF 946a, SF 792, SF 791, SF 946b), marbled slipware dish (SF 822), slip-coated dish (SF 945), sgraffito decoration (SF 789) and 'Springfeder' decoration (SF 790).

SLIPWARE PORRINGERS

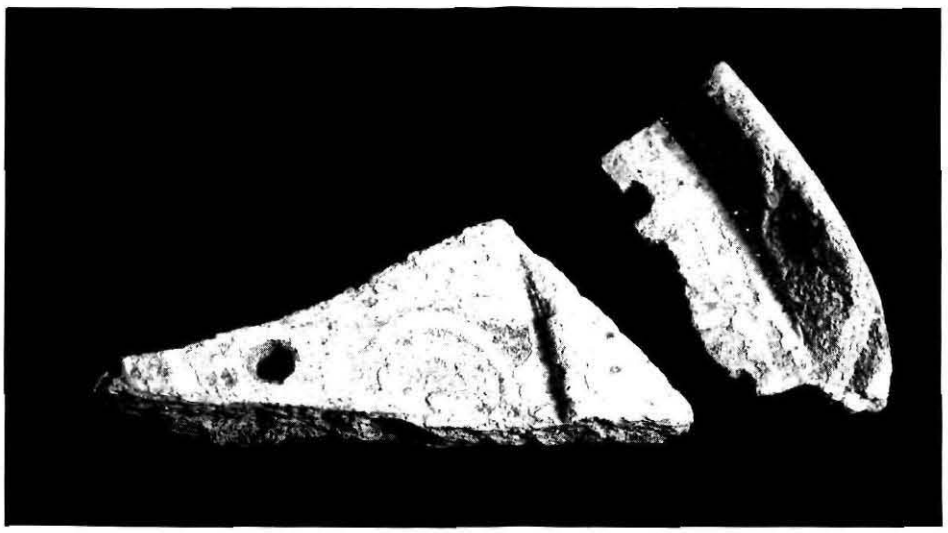
Porringers (Norwegian *øreskål*) are flat-based bowls with single or opposed horizontal or vertical strap handles, or a lobed handle (eg Molaug 1981, figs 20-4; 1987, fig 20, no 6; fig 22, no 1). The porringers from northern Germany and the local Trondheim examples often occur with variants of EBG group 5 or 7 rims; the type is less common in Sweden. They are quite rare in the Papa Stour assemblage with only six sherds from a maximum five vessels (0.23 EVEs). These include an upright rim with closely rilled outer wall and a band of slip inside (SF 954, illus 86), and a second rilled rim with vertical dashes in white slip around the outer edge; the inner wall has a dark brown glaze (SF 908); at 200mm diameter this is rather large for a porringer and may be a dish. A third rim, abraded and burnt, has a kiln scar (SF 906). One body sherd with internal slip coating and a green glaze has a horizontal strap handle (SF 832), while a loose strap handle is unglazed (SF 336).

SLIPWARE DISHES

A total of 44 sherds from a minimum of 28 dishes were recovered (0.63 EVES). Body sherds in this group are distinguished from pipkins/porringers by a smooth outer wall. Most of the rims are of hammer form; rim diameters range from 220-320mm. The bases are flat and externally knife-trimmed around the lower body. Seven dishes show signs of repair in the form of rivet holes. These include a deep dish SF 903 (illus 86 and 87), and SF 946 and SF 822. It is likely that the two rims from Scalloway Castle were also from vessels which had been mended, rather than hung on the wall, although this should not be ruled out (Lindsay 1983). Three decorative styles are present at Papa Stour: slip-trailed designs, marbled slip, and an overall slip-coating, either plain or with incised/stabbed designs.

Of the first group, only one dish (SF 947) is in the Werra-ware tradition (cf Hurst *et al* 1986, 242), with a greenish glaze, although the rim is missing. The peach-coloured fabric is looser, more sandy, and paler than Werra ware, but may be from the Weser valley (*ibid*, 250-4).

A maximum of 12 dishes in this group have concentric rings and/or simple open decoration in cream slip under a clear lead glaze which ranges from dark olive to brown depending on the fabric of the pot; in some cases there are additional splashes of copper oxide. These lack the distinctive concentric rings and dashes in white slip around the rim which are typical of Werra ware. Three dishes have standard hammer rims (SF 792 has a large kiln scar on the underside of the rim); a shallower and more rounded form is seen on SF 946b (illus 86 and col illus 18). Slip decoration first appears on north German wares *c* 1550 (Stephan 1992, 37), but the Papa Stour finds are more likely to be of 17th- or 18th-century date; a range of similar profiles has been found at Scalloway Castle (Lindsay 1983, fig 7, nos 45, 47, 50, 51). One dish, probably of 18th-century date, has an upstanding rim of wall-sided form (SF 791). Two sherds, possibly from the same vessel have a design of (probably alternating) spirals and radial zig-zag lines (SF 946, col illus 18 & SF 792, illus 86). This motif had widespread popularity in North Germany and Scandinavia during the 17th and 18th centuries (cf Steensberg and



illus 87
Fragments of repaired deep dish, SF 903; reproduced at 1/1.

Christensen 1974, pl 90, no 2). Identification of these wares is hindered by the size and condition of the sherds, but they were probably produced in northern Germany (these are not Dutch slipwares). One sherd (SF 818) is in a very hard fine red ware with cream decoration and a very dark brown glaze; this is similar to the 19th-century wares made in Sunderland, although similar wares were produced at numerous other centres.

Three dishes appear to have marbled decoration, although all are badly abraded. These differ from the above in that they have no flange and the upper rim edge is little more than a slightly raised lip (SF 822). Another rim of this form (SF 954) may also belong to this group, although this cannot be ascertained; unusually, this vessel also has slip on the outer wall. Marbled slipwares, which are usually dated to the early 18th century, were produced in a number of centres, including Gennep (Mars 1991, 92; Abb 73, nos 56, 60). Lower Rhenish marbled slipwares are known in Duisburg (Gaimster 1988a, 164, fig 10, no 4; Gaimster 1988b, 68, Abb 9, no 4) and from numerous sites in the Netherlands, mostly dated to 1700-1750, although some are of late 17th century date (Baart 1988, 159-60, Abb 2; Mars 1991, 92); a single dish, dated to *c* 1700-1725, has been found at the castle of Tilburg (Stoepker 1986, Afb.69b). Some examples travelled further afield; one Lower Rhenish dish is known from London (Gaimster 1988, fig 4, no 2), another from Bridlington (*ibid*, fig 2, no 5).

In the 18th century, marbled wares were produced in the area of Hannover and at Plön in East Holstein, but not at Preetz (Kruse 1987, 38, V50) and in Sweden (Elfwendahl 1995, 23; D Gaimster pers comm). The former may be the most likely source of 18th-century finds from Oslo (Molaug 1981, 95, fig 36, nos 4, 5) and Trondheim, and perhaps also Papa Stour, as they were exported through Bremen and Hamburg.

Finally, a few dishes have a plain overall coating of slip under a clear lead glaze; these include SF 945 (see above), which has an externally rounded hammer rim. *Sgraffito* decoration is present on one slip-coated vessel (SF 789, illus 86) which has an incised wavy line around the flange. Another sherd has an overall white slip with closely spaced stabbed arcading (SF 790). This semi-mechanical tooled decoration known as *Springfeder* (Hackspiel 1988, 258, Abb 7) or *Kerbstichdekor* was widely used in northern Germany and in Denmark; it is common on the 17th-/18th-century wasters from the Probstei (Kruse 1987, 21-5). Other findspots include Store Valby, Denmark (Steensberg & Christensen 1974, pl 90, no 7). This technique was also copied by potters in Trondheim.

COOKING POT/JUG

One large rod handle may be from a large cooking pot or *Grape*, or from a jug, SF 767. It has a distinctive method of attachment at the lower junction, where the wall of the pot has been pushed from the inside into the handle. The handle appears to have an overall slip-coating; the glaze which is very thin and has almost completely worn away, was clear mottled with green. This may be earlier than the pipkins described above. A large base sherd with heavy carbon deposits inside may also derive from a jug rather than a cooking pot (SF 887, illus 80).

DISTRIBUTION AND DATING

The distribution of the redwares is shown in table 14. Considering the horizontal distribution first, by far the largest group was found on the western side of the site in Trench K (143 sherds); these are mostly related to the Phase 5 dwelling-house. In Trench H, by contrast, only 13 sherds were found, most from the sand layer 8, which just predates the Phase 5 dwelling-house. The second largest concentration is from Trench E, where 91 sherds were found. 14 of these are from the Phase 4 building, but the majority (51) are from the uppermost levels. The next largest group is from Trench M, on the southern side of the site, (43 sherds), but these are poorly stratified. A total of 62 sherds was recovered from Trench J/L/P/R; this has some of the earliest stratified material with 10 sherds from Phase 3. Eight sherds were recovered from the area of the 19th-century Gørl (Trench L).

Turning to the stratigraphic distribution, over a quarter of the redwares (34%) were found in the uppermost levels of the site, Phase 7. The stratified material amounts to 186 fragments of which half is from Phase 5, mostly from the dwelling-house in Trench K (89 sherds).

The four sherds found in the natural subsoil are all intrusive. Those from Trench H (H10) are problematic, SF 781 (illus 81) being a form which is not present in the sample examined from the Archbishop's Palace, Trondheim or in the published material from Oslo. It has been classed as a type 4Ci pipkin, but is not impossible that it is of earlier date. It is probably derived from Phase 4, as sherds which are possibly from the same vessel were found in the Phase 4-5 layer H8, which in some areas directly overlay H10. Two small body sherds are from Trench J, layer J36; one is burnt, while the other is from a pipkin/porringer with internal slip decoration. These are probably derived from activity at the end of Phase 4 or in Phase 4-5.

The earliest stratified material comprises a burnt rimsherd from a cooking pot of EBG type 1B (SF 858, illus 81), and a small internally green-glazed sherd SF 856 (cooking pot/pipkin) from P2, the bank of the Phase 2 building; both could be of 15th-century date, possibly earlier. Phase 2, however, should be of 11th-/ 13th-century date. As the upper few centimetres of the bank were very disturbed, it is likely that the sherds from P2 were introduced into this feature towards the end of Phase 3 or in Phase 4.

Eleven sherds are from Phase 3 contexts, mainly in Trench J. These comprise a rim of EBG type 4Di (SF 904), found in a wall foundation

(J22); six sherds from a pipkin found in a wall (J13) (SF 898), and two tiny redware sherds from the wooden floor (J50), one of which is almost certainly from sherd SF 904. These sherds should date to the late 16th century, and are too late for Phase 3, which otherwise contains pottery of the 12th-14th century. However, this area was heavily disturbed, and it is likely that the redwares are derived from Phase 4, as sherd SF 898 joins with another found in the Phase 4 paving in Trench EJ (see below). A single sherd from a layer of stones in Trench H may also be intrusive; it is worn but may have had a thin white slip internally.

Three sherds were found in a peaty deposit (K86) assigned to Phase 3-4 (possibly collapsed roofing material from a Phase 3 building). These are from a pipkin of rim type 5/7 (SF 962) which should date to after 1600 (probably after *c* 1620: see above). If these were lost at the beginning of Phase 4, they suggest that it started in the early 17th century. If not, they must be intrusive.

The overlying clay floor (K44) of the Phase 4 building contained four sherds, three from a pipkin with rim type 4Ci (SF 817, illus 81). In Trench E, one pipkin sherd was found in a wall of the house (E65), while one is from a paved area at the junction of Trenches E and J (see above). The largest concentration, however, was in the spreads of collapsed roofing material in this trench (E41, E51, E68, E77) (17 sherds in all). These include a pipkin of rim type 5/7 (SF 914, illus 81) found in a layer of ash and peat (E41), and the first slip-decorated sherds: a pipkin/porringer (SF 921, illus 83), and part of a dish, found in layers E51 and E77 respectively. Both have internal decoration in yellow and green. If they were incorporated in the roofing material following the demolition of the structure, then it could have been burnt before *c* 1630. If so, its use must have been short-lived. If, however, the slipwares were used in the house, it must have been destroyed after *c* 1630, and this may fit better with the finds from Phase 4-5 and the dating of Phase 5. Also present in this group are several burnt sherds from a cooking pot, some joining (E51, E68 and E76) which may derive from SF 858 (illus 81) (see above, Phase 2).

Deposits and features assigned to Phase 4-5 yielded 26 assorted redware sherds. The seven sherds found in a sand deposit in Trench H (H8) include a pipkin of rim type 4A (SF 778, illus 81), a sherd which may be from the same vessel as SF 781 (see above), and a pipkin/porringer with internal slip-coating; this is very worn, and has just a tiny area of green glaze surviving. It is possible that this area was left open after the burning of the Phase 4 house. Six sherds were found in a layer of stones and peat in Trench K (K26). These include two dishes with internal slip-coating, and a pipkin which may have been slip-coated.

Similar slipwares and a few plain redwares were recovered from a pit fill (E64, E46) and from the overlying clay (EJ3). These include two internally decorated pipkin/porringers (illus 83, SF 936 and SF 1391 from the upper pit fill and clay deposit), and body sherds from two slip-coated vessels: a pipkin/porringer from the lower pit fill (E46) and a pipkin from the clay. It is possible that the backfilling of the pit and the clay layer were contemporary with the Phase 5 building in Trench K (although they are assigned to Phase 4-5).

Taken together, the pottery from Phases 4 and 4-5 (total 57 sherds) amounts to 30% of the stratified material and 16% of the assemblage as a whole, but by far the largest group is from Phase 5, most sherds being from the building in Trench K. The construction cut for the wall (K11 and K11x) contained sherds from two slipware dishes, one with *sgraffito* decoration (SF 789, illus 86), and one which may have had marbled decoration (thus possibly of 18th-century date); also present are sherds from two pipkins, including SF 826/840 (illus 81). The drain cut (K133) contained sherds from seven pipkins and a porringer. Pottery from within the building was mainly found in the occupation deposits (K5/10, K 25) and floor (K10), but was also present in the peaty deposits (K8, K15). Forms present comprise up to 16 pipkins (including illus 81, SF 836, SF 826/840, SF 197 and SF 874), five pipkin/porringers (illus 85, SF 874, SF 800, SF 762 and SF 766) and seven dishes (including illus 86, SF 791 and SF 790). Most of the pipkin rims found in this building are of EBG group 5, but a few are of group 7; dish SF 790 has tooled *Kerbstichdekor* typical of the late 17th and 18th centuries (see above). Together, these finds suggest that this building was constructed in the late 17th or early 18th century.

Very little pottery was found in Phase 5 contexts on other parts of the site, the only other fragments associated with a Phase 5 building being from Trench R, where six sherds were found (R916). These comprise a pipkin handle (SF 874) and two other plain pipkins, one sherd from a pipkin with external decoration (SF 874) and a dish decorated with concentric rings.

The pottery from Phase 6 comprises a mix of earlier and later wares; illustrated pieces comprise two plain pipkins (SF 857 and SF 860), a pipkin with internal slip decoration (SF 843/862) and a deep dish with hammer rim, slip decoration and repair holes (SF 903, illus 87). No forms were identified which were clearly different from the above, so that it is difficult to pinpoint the date of this phase from the redwares alone. Finds from Phase 7 are similarly mixed; pieces of note include a pipkin rim (SF 937), and a slipware dish with hammer rim (SF 792). Most of the pottery from the topsoil and other levels comprises sherds from pipkins, with two pipkin handles (SF 874 and SF 947), a porringer (SF 954) and four dishes. Of these SF 947 may be of Werra-type; SF 946a may be from the same vessel as SF 792; SF 946b and SF 822 both have repair holes.

DISCUSSION

Redwares similar to the above were already known in eastern Scotland and Shetland, but the finds from Papa Stour are of importance as they not only extend the known distribution but also they afford the opportunity to set the earlier finds in a context of pottery production and trade.

As demonstrated above, these redwares could derive from a number of sources within a geographically vast area. Fabrics are at present of little help in refining the range of possibilities, while definition of regional variations in form must await the publication of kiln assemblages. However, it would appear that the characteristic *stjertepotte* described above originated within the kingdom of Denmark, which once included much of southern Sweden and part of northern Germany, and that their use in Germany is concentrated in the eastern part of northern Lower Saxony (to the south and east strap-handle forms were more common, at least in the 16th century). The tradition was perpetuated in north Germany in the 17th and 18th centuries, when judicious marketing of these wares must be envisaged, in Norway if not in Sweden. The internally decorated sherds must come from a single source, perhaps by a non-commercial mechanism.

The largest group of north German/south Scandinavian redwares in Great Britain is that from Scalloway Castle, where the finds include 868 sherds from redware pipkins (including 150 rims and 45 handles), 194 from dishes and over 60 from other slipware vessels. Of the other findspots noted by Lindsay (1983, 567), the redwares from Pittenweem and Leith are probably of the same general origin; Kelso and Aberdour Castle may now be ruled out of this survey, while Shore Brae, near Aberdeen, may perhaps be added (G Haggarty pers comm); the assemblages from Breckin on Yell and Jarlshof may also contain some examples as they have imported slipwares. In addition, occasional finds have been noted from Edinburgh and Fife (Robert Will pers comm). However,

the type is absent from Stirling Castle (Haggarty 1980) and Fast Castle (Haggarty & Jennings 1992), while although such wares might be expected at Aberdeen, so far none have been published. In England, a pipkin or skillet handle is known from Black Gate, Newcastle (I Reed pers comm; not published in Ellison *et al* 1979), while a redware vessel from Skipworth Manor, South Humberside, published as Glazed Red Earthenware and assumed to be English, has a distinctive rim of EBG type 4A/B (Didsbury 1996, 17, 28-9, 31, fig 15, no 34); the feature in which it was found was dated to *c* 1600-1650.

Imported Weser and Werra slipwares are relatively common in most of the English ports. Werra ware seems to be extremely rare in Scotland, but a few sherds of Weser ware have been noted at Kirkwall (MacAskill 1982, 411) and Scalloway Castle (Lindsay 1983, 573); both types are absent from Fast Castle, while Aberdeen is an unknown quantity. Slipped wares from the Lower Rhineland and other sources in north Germany are much less common in Britain (for findspots see Gaimster 1988b). Examples have been noted among the slipped redwares from Scalloway Castle (Lindsay 1983, 571-2; Gaimster 1988b, 172); other sherds have been noted at Breckin on Yell (*ibid*: one porringer and three dishes) and at Jarlshof (*ibid*: one body sherd). All the Scottish finds were dated to the 18th century (1700-1760).

The redwares from Papa Stour may span up to 300 years. They follow a broad chronological progression. The earliest sherd, from the natural subsoil, is probably of 15th-century date. There are no definitely stratified 16th century forms, but intrusive material in Phase 3 may date to the later 16th century. Phase 4 seems to date from *c* 1620/30, Phase 4/5 to after *c* 1650, while Phase 5 should date from the late 17th/early 18th century. The assemblage as a whole is of interest in that it should derive from a single property, where cooking vessels were at least twice as common as table wares in most phases. The absence of jugs may reflect the use of other materials, or the rural setting.

Pottery probably reached the islands as an adjunct to trade in other commodities. At Papa Stour the number of repair holes and other modifications such as the grinding down of broken legs on the pipkins shows that pottery was not in regular supply, and the redwares were used to the limit of their usefulness. This may also have been the case at Scalloway Castle. The glazes on the Papa Stour sherds were almost certainly worn and friable when the pots were eventually discarded, and this has made them more susceptible to post-discard weathering, which was evidently severe. The impression is given that some at least of the material was initially discarded in middens and later redeposited, and/or buried in acidic conditions. Some sherds are also secondarily burnt.

CONCLUSION

Taking the historical background and the pottery together, it may be argued that the redwares found at Papa Stour have a central date in the 17th century, and that they are from Schleswig-Holstein or Lower Saxony; within the area bounded by Bremen, Flensburg and Lübeck. From the publications currently available, the most likely centres would appear to lie between Lüneburg/Hamburg, Preetz and Lübeck, but this may change with future work, which must include scientific analysis of material from kiln sites.

The distribution pattern of the *stjertepotte* and associated slipwares only partially coincides with that of the better known Weser and Werra wares, being confined to an essentially Scandinavian ambit which extends to Iceland. This reflects the activities and preferences of German traders and fishermen, who favoured the north-eastern seaboard of England, and the islands and the coastal regions of eastern Scotland (Lindsay 1983, 573), and must have its roots in trading patterns established by the Hanse and Norwegians. Contact between the source of supply and Shetland may have been direct, but may equally have been via Bergen, a Hanse depot which maintained strong connections with Lübeck and, increasingly, with Bremen in the 16th century and 17th centuries, and which may well have been a transhipment point for goods imported to Norway by German merchants. However, Shetland forms a convenient stopping point between Germany and Iceland or the Faroes, and in the case of Papa Stour, the situation is of particular interest since the pottery substantiates documentary evidence for the presence of German merchants on the island. There is a known connection with Bremen by *c* 1563, while by the early 17th century a merchant from Hamburg is mentioned, the numbers of merchants had increased and trade between Germany and the islanders was well established (chapter **2.5** above).

To conclude, although the number of stratified sherds is small, the Papa Stour assemblage is of importance firstly because it confirms that from the 16th century, if not earlier, Shetland was part of the general pattern of pottery use in Scandinavia and beyond, and testifies to long-standing contact with the region(s) in which these redwares were produced. Secondly, the finds help to tighten up the sources and dating proposed for redwares from Scalloway Castle and Kirkwall (which although following the same sequence, is rather later). Together, these sites and others noted here, indicate that further imported redwares can be anticipated on excavations or in the museum archives of Shetland and eastern Scotland; more work is required, however, before their dating and provenance can be further elucidated.

7.3.4 OTHER POST-MEDIEVAL AND MODERN CERAMICS

Robert Will

WHITE SLIP GREEN GLAZE

One sherd (SF 832) from a two-handled bowl or porringer has been identified as being of a type of early 17th-century Frechen/ Cologne slip-ware known as White Slip Green Glaze (WSGG) (S Jennings pers comm).

TIN-GLAZED EARTHENWARES

Eleven sherds of tin-glazed earthenware or Delft type wares were also found at the site. Due to the small size of the sherds and the lack of distinctive decorative motifs these vessels cannot be precisely identified as to countries of manufacture. All that can be said is that they belong to the general category 'Anglo-Dutch' and probably date to the 18th/19th century. Of these sherds only two fragments are painted and one sherd is pierced, possibly for repair. All except one sherd came from the west side of the site during Phase 4/5 to Phase 7. The majority of pieces were found in Phase 6.

MODERN CERAMICS

The modern material consists of a large variety of white and red earthenwares representing table wares: plates, cups, bowls, teapots etc, and kitchen/dairy wares: large bowls and colanders. In all 278 sherds were identified.

A wide range of decorative techniques such as hand painting, transfer-printing, sponging and all-over glazing in a variety of colours is noted in these sherds. Many of the vessels were machine-made but the small size of the sherds prevents the identification of individual factories. It would be expected that both English and Scottish factories are represented. Sponge printing was a Scottish speciality used extensively by factories at Kirkcaldy and Bo'ness. Its popularity on the site is shown by the large number of sherds of this kind found. Kitchen wares are predominately represented by heavy red earthenwares. One such category are slip-lined dairy bowls; wide and shallow bowls made at several factories throughout Scotland in the 19th and 20th centuries.

The majority of the sherds, as expected, were found in the upper levels of the site, in Phases 5, 6 and 7. Sherds found in earlier levels are the result of disturbance of the contexts such as the upper levels of pits, material falling in the trenches from baulks and the trench sides, and contamination from back-fill material.

7.4 OTHER SMALL FINDS CERAMIC, GLASS, METAL AND STONE

Beverley Ballin Smith
with Torben Ballin, Alexander Fenton, Anthony Newton, Julian Henderson and Denys Pringle

7.4.1 OTHER CERAMIC ARTEFACTS

CLAY PIPES

(table 7; illus 88)

A total of 18 fragments of clay pipe were found in the main area from Phases 4 to 7. The majority of fragments are plain and mainly from the stem. Only four fragments were decorated and only two were complete bowls. Most of the pieces (10) were found in Phase 5 associated with the dwelling-house at the West side of the site.

PHASE 4

One fragment of a rim of a plain bowl SF 289, came from the hearth [E47] of the Phase 4 dwelling-house in the centre of the excavated area (Trench E). The piece is too small to identify the bowl type or its likely date.

PHASE 5

Two complete pipe bowls SF 288 and 290 (illus 88) were recovered from the dwelling-house (Trench K). Both bowls are plain and of a very similar shape, but one, SF 288, has a milled line around the rim. The bowls are from *c* 1650-1670 (Davy 1987, 326-7). Another piece, SF 286, from the floor of the same building is decorated. This is the side of a bowl with a raised rosette of seven dots. It is possibly Dutch and from *c* 1640-1660 (*ibid*, 211-24). Five non-joining pieces of pipe stem came from within and around the same building. All are plain.

PHASE 6

A piece of pipe stem SF 868 (illus 88) with W. BEVE.. And ABERDEEN was found in topsoil in Gorl. It most likely represents the work of W. Beverage, Aberdeen from 1882-1913 (Murray 1982, 220-3).

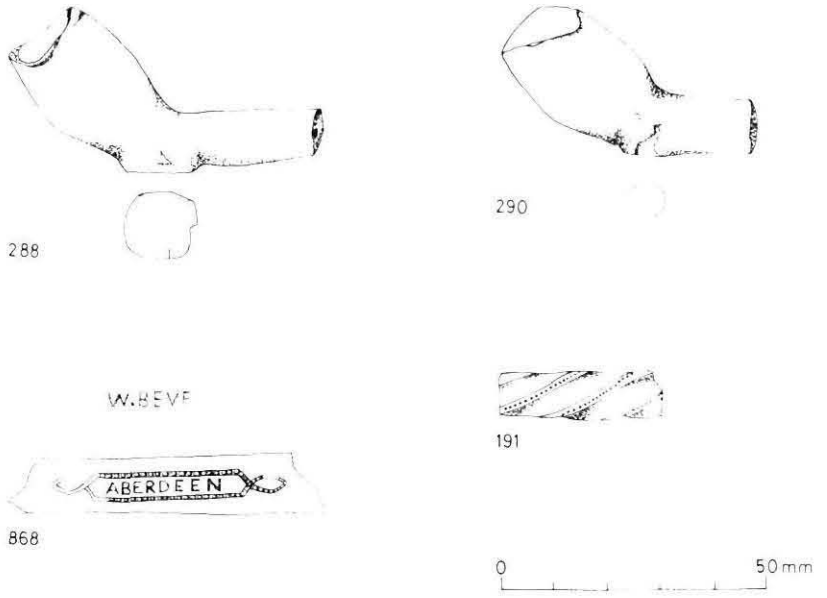
PHASE 7

A piece of pipe stem SF 277 stamped ..RISTIE and LE... but with no border, came from topsoil at the east side of the site. This is identified as being Christie of Leith. W. Chistie was a clay pipe maker in Leith from the mid 19th to the early 20th century, but the piece was probably manufactured after 1895 (*ibid* 24, 25, 31).

A single piece of twisted and decorated pipe stem SF 191 (illus 88), was found in the west part of the site. It is possibly Dutch (or in the Dutch style) and probably dates from *c* 1730 (Oswald 1979, 115, 118).

TILE

Seven fragments of unglazed tile, representing both land drain and roof tiles were found in Trench B in 1977.

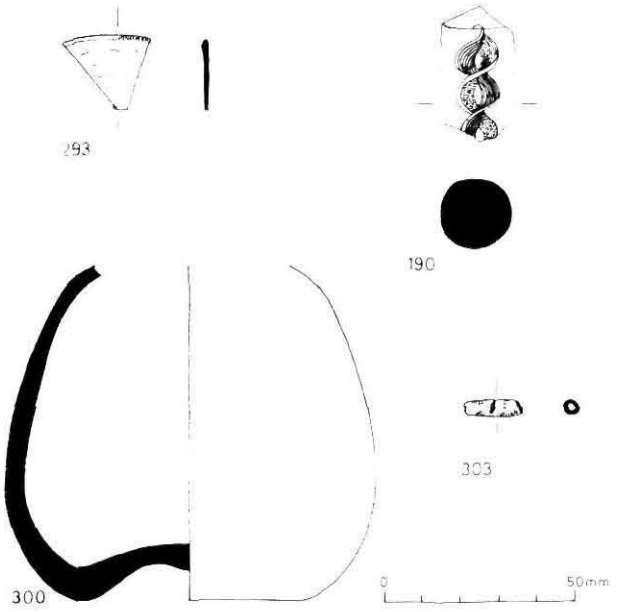


Illus 88
Clay pipes SF 288, SF 290, SF 868 and SF 191

7.4.2 GLASS

(table 7; illus 89)

A total of 70 glass fragments were found on the site, over 54% were found in Phase 7 contexts and 30% in Phase 5. Only six pieces came from Phase 4 and one from Phase 2 (see J Henderson below). The latter is considered an anomaly, as glass generally did not begin to occur at the site until Phase 4.



Illus 89
Glass: fragments of wine-glass rim SF 293; wine-glass stem SF 190; wine-bottle base SF 300; blue glass bead SF 303.

BOTTLE GLASS

Most of the glass (up to 47%) is fragments of green bottle glass, but only one piece is of sufficient size to be compared to dated material. Although from Phase 7, the fragment SF 300 (illus 89) is a wine-bottle base with a low kick. It was probably manufactured about 1727 (Noel Hume 1982, 64). One piece, SF 308, from Phase 5 contained a moulded 'EG'.

Blue glass accounts for 24% of the total and was prevalent in Phases 5 and 7. It largely represents fragments of square-bodied bottles of mid-18th-century date and medicine phials. Clear and brown bottle-glass fragments are considered to be modern. Blue glass was also used for beads (see below).

WINE GLASS

In Phase 7 a fragment of a thick wine-glass stem SF 190 (illus 89), broken at both ends, was found. It is of clear glass with an internal opaque ribbon-twisted spiral composed of 10 threads. The glass is possibly lead crystal, with the design imitating Venetian glass decoration popular in the 18th century (Calder 1989, 90). This type of thick-stemmed drinking glass with an opaque ribbon-twist is likely to date between 1760 and 1775 (Noel Hume 1982, 190-191). This piece is now lost.

From the hearth in the Phase 4 dwelling-house in the centre of the site (Trench E) is a piece of a thin rim of clear glass SF 293 (illus 89). It is a fragment of the rim of a wine glass which in itself is undatable.

GLASS BEADS

Two beads were found in Phase 7 and in an unstratified context, SF 299 and SF 303 (illus 89). Both are of blue glass and could be from any date between the 17th century to the present (Nöel Hume 1982, 54).

WINDOW GLASS

Only five pieces of window glass were found on the site, one from Phase 2 is discussed below; one came from the floor of the Phase 5 dwelling-house (Trench K); and the rest were from the topsoil.

FRAGMENT OF WINDOW GLASS FROM PHASE 2 (SF 292)

(table 15)

Julian Henderson

The fragment of translucent green window glass found on the site (SF 292) was scientifically analysed with the hope that its chemical composition might shed some light on the date of manufacture. The fragment is a mid-green colour with a thin iridescent layer of weathering.

TECHNIQUE OF ANALYSIS

A minute (1mm) sample of the glass was removed, mounted in epoxy resin and polished and coated with carbon. The sample was chemically analysed using a Cambridge M9 electron microscope with two wavelength-dispersive spectrometers. The system had been calibrated prior to use with a combination of geological standards and multi-element European Science Foundation and Corning Museum standards. The intensities for each element detected were corrected using a ZAF program. The analysis was carried out using a defocused electron beam of 80?m in diameter which minimises the loss of sodium during analysis. More details of the analytical conditions are given elsewhere (Henderson 1988).

THE RESULTS

The results are given in table 15. It can be seen that the glass is characterised by relatively high levels of silica (60.9%) and calcium oxide (20.6%) with a relatively low total level of alkalies (soda and potassium oxide) of 4.8%. The glass is further characterised by relatively high aluminium oxide (4.1%) and low phosphorus pentoxide levels (0.1%). The glass is coloured by a combination of manganese and iron oxides; it is likely that there is a preponderance of ferric over ferrous ions because it was manufactured in a more oxidised than reduced atmosphere producing a green colour.

INTERPRETATION

The glass is not typically of a Roman, early medieval or high medieval composition. Its high calcium oxide and relatively low alkali levels suggest that it is of a 17th-/18th-century date. From about the late 17th century a mixed-alkali glass was introduced with high calcium oxide levels. Although this glass does not conform to this, its low analysis total indicates that part of the alkali is probably missing from the composition due to weathering. In sum, it is most unlikely to have a date earlier than the 17th century.

The origin of the glass on the floor of the Phase 2 *dyngja* is probably due to contamination from backfill after the 1978 excavation.

Compound	expressed as weight percent oxide
Na_2O	4.0
MgO	1.4
Al_2O_3	4.1
SiO_2	60.9
P_2O_5	0.1
SO_3	0.2
CL	nd
K_2O	0.8
CaO	20.6
TiO_2	0.2
Cr_2O_3	nd
MnO	0.7
Fe_2O_3	2.2
CoO	nd
NiO	nd
CuO	nd
ZnO	nd
A_2O_3	nd
SnO_2	nd
Sb_2O_3	nd
BaO	0.1
PbO	0.1

Typical levels of detection in p.p.m (95.5% probability level) are: Na_2O 760, K_2O 250, CaO 170, Fe_2O_3 640, CuO 1200, PbO 200

nd = not detected

Table15
Electron probe micro-analysis of window glass fragment SF 292.

7.4.3 METAL

Additional information is by Dr DJ Bateson, Hunterian Museum, Glasgow.

COPPER ALLOY AND SILVER

(table 7)

Only 11 items of copper alloy were found on the site; a few items came from Phase 4 or later, with the majority found in topsoil.

PHASE 4

One, possibly two, pieces of silver SF 684 and SF 1590, were found in context J29, the upper fill of pit J55. The former is a corroded lump, the latter is lost.

PHASE 5

From the floor (K5/10) of the dwelling-house (Trench K) was a brass button SF 1431 with four holes in the centre. It is probably from 1800-1830 (Nöel Hume 1982, 90-91).

PHASE 6

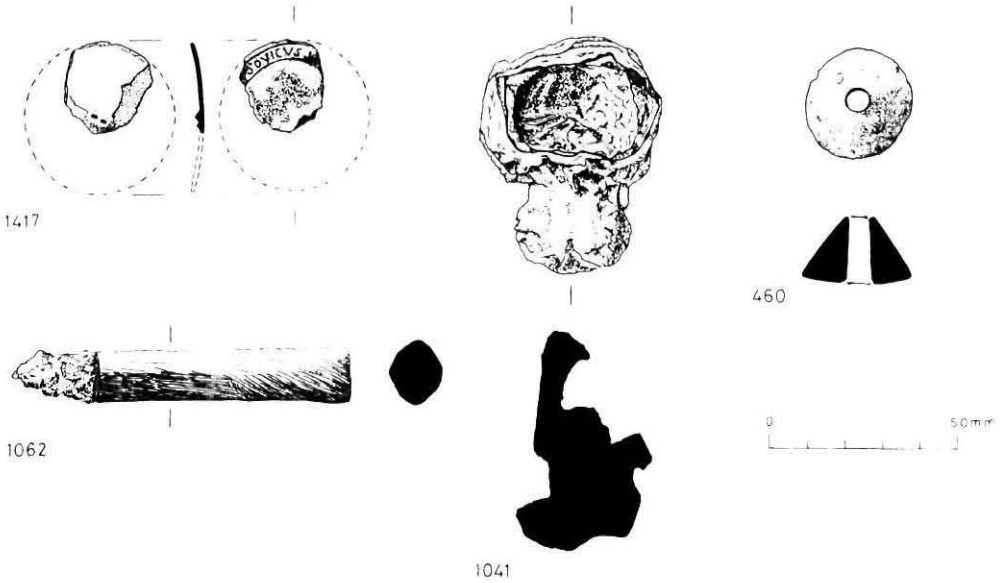
From this phase are a token and a disk. The disk, SF 1065, is most probably a token but has no surface decoration surviving. SF 685 has been identified as a tea merchant's token inscribed with PROVIS....|OUS (Provision Warehouse) CATHCART STREET. It is of the late 18th century produced by Malcolm McFarlan of 61 Cathcart Street in Edinburgh (Pers comm Dr DJ Bateson; see also Dalton & Hamer 1967, 430).

PHASE 7

Another disk, SF 1063, is probably a perforated gasket head.

UNSTRATIFIED

From the 1977 trenches and Trench S are one rectangular buckle SF 628 with rounded ends, probably from a horse harness; SF 627 a square buckle with pin and slip ring; a plain disk SF 1064, possibly a button



illus 90
Metal disc SF 1417, iron knife in horn handle SF 1062, nail/rivet SF 1041 and lead spindlewhorl SF 460.

with the remains of a securing bar on the reverse, and a fragmentary disk or button. The latter, SF 1417, (illus 90) has an impressed design around the edge SOVICVS...

LEAD

(illus 90 & table 7)

Only two pieces of lead were found on the site.

PHASE 2

An undecorated conical perforated spindle whorl SF 460 (illus 90) came from peat in the western half of the site (Trench K). The weight of the whorl, 42g, suggests that it was used to produce a thick heavy yarn or more likely used for plying threads (Øye 1988, 54).

Steatite is by far the more usual resource for spindle whorls in Norway, as seen in finds from Bergen and Oslo where some lead whorls, usually conical, were present but they were few in number. They are dated *c* 1170 to 1413 in Bergen and to approximately the beginning of the 13th century in Oslo (Øye 1988, 50; and Molaug 1991, 102).

Three lead whorls a little smaller than SF 460 were found at the Brough of Birsay, Orkney, from the lower and middle Norse horizons (Curle 1982, 79, 117). A smaller hemispherical lead whorl was found in Phase 2 during the Brough of Birsay 1974-82 excavations, dated to the end of the 10th to the beginning of the 11th century (Hunter 1986, 177, 183). Another, possibly of 10th-century date is from the Viking farmstead at Jarlshof, Shetland (Hamilton 1956, 126).

The location of the whorl in Phase 2, suggests that a 10th- to 12th-century date is most probable.

PHASE 6

An irregular but fragmentary cylinder SF 207, identified as a modern fishing weight.

IRON AND SLAG

(table 7)

This category includes slag (not necessarily all of iron), corroded iron lumps and iron objects. There was no indication of iron working on the site.

SLAG

A total of 22 lumps of slag were found at the site from Phase 2 to 7. 68% of the slag came from phases 2 and 3, from the burnt deposits over the oven in the *skáli* (Trench H), from the hearths J108 and J109, and floor of the Phase 2 *dyngja*. All these pieces are very small and are most likely 'cramp'; the result of burning peat or turf at low temperatures causing the fusing of silicates in the fuel (Fleet 1975, 46-48).

Other pieces of slag (iron slag) came from a peat layer H12, in Phase 4 on the west side of the site, and from phases 6 and 7. The latter may partly be the result of burning coal on the domestic hearth in the Gørl (see below), and of earlier material, possibly cramp, found in disturbed contexts in the centre of the site.

IRON ARTEFACTS

In total there were 58 iron artefacts, of which 34 were corroded and largely unidentifiable lumps. They were recovered from Phases 2 to 7 with the majority coming from Phase 5.

NAILS, RIVETS AND SPIKES (15 pieces)
Fragmentary nails/nail heads, including several pieces in wood were present in all phases with the majority found in Phase 5. It was difficult to distinguish between nails and rivets because of corrosion and incomplete shafts. Of the nail heads that were visible, round, sub-rounded and rectangular pieces were found between 6-18mm in diameter or width. The shanks lay between 3-10mm in thickness and were mostly square, although a Phase 7 example, SF 1030, was possibly round.

The length of the fragments (all were incomplete) generally lay between 11-52mm with the longest 80-88mm considered as spikes.

KNIFE BLADES
SF 626 is part of the blade and tang of a knife, which was triangular in section. It was found in Trench M.

From Phase 3 is a probable knife blade SF 1025, which is heavily corroded and fragmentary. It was found on the wooden floor of the *stofa*.

SF 1062 (illus 90) came from Phase 4 and was found in the fill of a pit (L35) dug into the *stofa* at the east side of the site. The blade is very fragmentary and survives only 21mm in length. It however lies within an oval-cylindrical plain horn handle (see also 7.7 Horn report).

SF 1060 is a partial tanged blade, found within Phase 7 deposits within the Gørl. The blade has a triangular section and is probably a modern piece.

CANNONBALL
A single cannonball SF 1036, was found in the destruction levels of the Phase 5 dwelling-house. Its weight is 4lbs 6oz or 1988g.

MISCELLANEOUS
Other pieces include a fragmentary pony shoe SF 1022 from between phases 4 and 5. From Phase 5 were 9 pieces of fragmentary metal plate or strap, some of which were contemporary with the use of the dwelling-house at the west side of the site. Lastly, a small piece of iron came from the topsoil in Phase 7.

Corroded Iron Lumps
From phases 2, 2-3 and 3 from all buildings came rounded corroded lumps of iron. They were found on the floor and possibly in the fire-pit of the Phase 2 *dyngja* , as well as in destruction levels of the *skáli*. Several fragments were possibly a large rivet SF 1048, or a round-headed nail SF 1055. These may have derived from the roofs of the buildings.

The Phase 4 material (three pieces) was unidentifiable apart from a possible nail head SF 1028, from the destruction of the Phase 3 *stofa*. Also found in Phase 4 was a single iron lump, and a possible nail/rivet SF 1041 (illus 90) from Trench K of this phase.

Four lumps came from Phase 5 and are identified as a possible nail SF 1044, a small cylindrical piece SF 1045 and another possible nail.

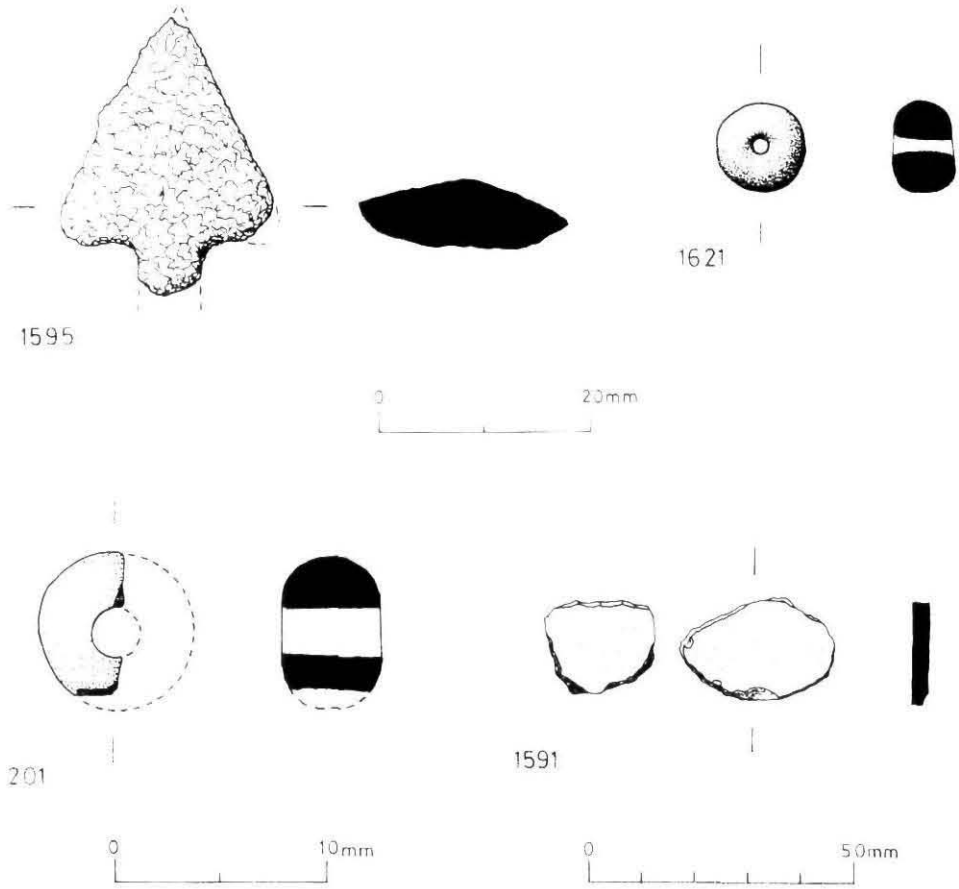
A single corroded lump came from the Phase 7 topsoil.

7.4.4 STONE

AMBER

(table 7)

Four samples of highly fragmented amber were found on the site in Phases 4, 5 and 7. Described here are three beads and two fragments of a plate 3.5mm thick. One of the beads SF 201 (illus 91) from Phase 5, was circular but the other two were too fragmentary for further investigation. Of the latter, SF 204 came from the Phase 4 destruction (J25) of the Phase 3 *stofa* and SF 202 was unstratified. The plate fragments SF 1591 (illus 91) were found in the fill of a shallow feature (PL164) at the east side of the site between phases 4 and 5. They are possibly burnt and may have been used as inlay (pers comm Ailsa Mainman).



illus 91
Quartz arrowhead SF 1595; jet bead SF 1621; amber bead SF 201 and amber plate pieces SF 1591.

Amber is found around the Baltic coast and was traded often in the form of amulets in the Viking period from such places as Wolin, Poland, where there were workshops from the 9th to the 12th century (Roesdahl & Wilson 1992, 295). Amber also occurs along the west coast of Jutland, Denmark, and as small pebbles on east coast beaches of England. It was found as amulets and beads made from imported amber, in excavations in Viking York and Dublin. Half the amber beads found in the 1990 excavation at Birka, Sweden were annular, and it is thought they come from the final occupation of that centre (Ambrosiani 1995, 59). The late medieval occurrence of amber at the Biggings may be due to Hanseatic trade around the Baltic and North Sea areas.

COAL AND JET

additional information is by Ailsa Mainman, York Archaeological Trust.

Samples of coal and jet (five in total) were found from Phase 4 to Phase 6, with three pieces from Phase 5. Apart from three samples of coal, a four-sided faceted jet bead, SF 311, was found in Phase 5 on paving (J20) at the east side of the excavation. It is a common type with 18 irregular facets: it is also worn and cracked. The cracking is occasionally a feature of soft jet which can occur after working. If this bead is of soft jet, a late date for it could be confirmed. Another worn but spherical jet bead SF 1621 (illus 91) was found in Phase 6.

Jet from Whitby, Yorkshire, England, has been exploited since the Bronze Age (Shepherd 1981, 43) and is the likely source of the Biggings beads. The only other European source is in Spain (Roesdahl & Wilson 1992, 334).

FLINT

Thirteen samples of flint came from Phase 4 to Phase 7, with a single piece from Phase 1. The occurrence of rounded pebbles and irregular flint blocks from Phase 4 suggest that it probably derived from ballast, and came to the site at the same time as, for example, the Continental Redwares. None of this flint was worked, although some had been shattered. Almost all of it was found outside the buildings or in their destruction levels. The only exception was SF 1007 from Phase 1, from within a pit J110 at the east side of the site.

FLINT FLAKE SF 1007

This is a fragment of a very small flint flake with the right distal corner of the piece made into an acute-angled point. This has been achieved by the simple retouch of the two converging sides. It was possibly a small borer and of prehistoric date (pers comm Torben Ballin).

QUARTZ

Nine samples of quartz (14 pieces) were collected from Phase 4 to Phase 7. Both quartz pebbles and fragments were found and none were worked except SF 1595 an arrowhead. The majority of unworked pieces came from the west side of the site.

TANGED ARROWHEAD (SF 1595)

Torben Bjarke Ballin

A single, tanged arrowhead, SF 1595 (illus 91), was found in the topsoil of the Gorl in Phase 7. The find's circumstances impede a closer dating, but the following will try to place the arrowhead in its correct setting from its typological and technological details.

The arrowhead, measures *c* 19mm x 24mm, and is made on a milky-white, relatively homogenous quartz. By the use of flat flaking it is shaped into a straight-sided triangle with two barbs and a blunted tang at the base. The arrowhead is largely intact, but is believed to have had the extremities of the tip, tang and one barb broken off.

Quartz is commonly considered more difficult to work than other forms of silica, and this is primarily due to differences in the crystalline structure. Where flint, chert, jasper etc, have a micro-crystalline structure and good flaking abilities, quartz has a coarser crystalline structure and a tendency to intricate cracking (Broadbent 1979, 48ff).

When quartz is used it is often as a good local adaptation to an inadequate access to sources of good raw material. Flat flaking (pressure flaking using a pointed antler) on quartz, as seen here, is quite extraordinarily complicated, and one would normally connect quartz with the much simple bipolar technique (the use of a hammerstone and anvil). This latter technique has, by way of an example, been used to a great extent on mainland Orkney, where there is also a striking insufficiency of raw material sources. Here pebbles of beach flint were used primarily. The technique dominates the worked silica accessions within Tankerness House Museum, Kirkwall.

The flat flaking technique has occurred intermittently from the change over between the Middle and Upper Palaeolithic until today, although in Great Britain the technique is known only from the Neolithic and Bronze Ages.

The morphology of the arrowhead makes it possible to narrow down the dating extremities, as the form in question with tang and barbs was introduced during the Beaker culture's middle phase (Mercer 1977, 73ff) or Phase 4 according to Lanting and Van der Waals (Lanting & van der Waals 1972; Shepherd 1986, 24ff). The estimated date for the artefact is therefore late Neolithic to early Bronze Age with a TPQ *c* 2100 cal BC.

Although found in topsoil, the arrowhead is most likely to have derived from peat-cutting west of the Hill Dyke and brought to the Gorl with the peats. In this area, which is the larger part of the island, are the remains of copious prehistoric houses.

JASPER

Jasper is a variety of cryptocrystaline silica and can be regarded as a mineral. Its reddish-brown colouring comes from iron within its structure and it is rarely found as large pieces (Whittaker 1994, 71). Like flint and quartz it is a resource that could have been utilized in the prehistoric period for tool working. However there is no indication of this from the Biggings material where the pieces were small and with one exception, unworked.

All the pieces are fragmented pebbles, probably originating as glacial erratics (see chapter **1.2**) which were either found close to the site or brought to it. The majority of the jasper was found on the west side of the excavation, where a large pebble may have shattered.

30 samples (144 pieces) from all phases were collected. Only one irregular piece SF 976, from Phase 7 at the east side of the site, showed any signs of working. This stone has a polished surface.

GROOVED LINE-SINKERS

These stone weights are characterised by one or more linear grooves around the body of the artefact and occasionally around the long axis. They were not perforated by a suspension hole. The grooves were required to hold a rope for the securing of fishing lines or nets. Of the 12 artefacts from the Biggings only six were located in the main excavation area, the rest are from the 1977 trenches. The earliest weights are from Phase 5, with the remainder from Phase 7. The location of the stones indicates that they were all found outside the buildings, but were from disturbed or very late contexts.

ROCK TYPES AND SIZE

Rock types used are fine grained metamorphosed, sandstone and micaceous sandstones, usually in the form of beach cobbles. Steatite examples also exist (see Section **7.2.4**) but these were also perforated. All except two are complete, with SF 692 being a stone fragment containing a central groove, and SF 1447 which is shattered laterally.

The stones weigh from 610g to 1330g, the average weight being 1043g. The size of the cobbles is fairly consistent with the maximum length lying between 155mm-180mm, the width between 58 and 89mm and a thickness of between 36-62mm.

FORM

All the cobbles have a roughly elongated oval shape, the narrowest part of the cobble forming the tip, and the widest part the base. Only one artefact (SF 599) from Phase 7 shows evidence of it being altered by pecking and chipping to conform to the elongated oval shape. This weight was chipped at the base and pecked over most of its body. In fact, this may have been originally an ard or hammerstone that was later adapted to be a line sinker or weight.

Although other stones such as SF 697 from Phase 5 exhibit peck marks generally, this may be a result of post-groove finishing of the tool.

GROOVES

The Biggings weights have one to five grooves on the body of the stone. Formed by pecking with the use of a pointed stone or metal implement, a shallow linear indentation was produced into which a fine rope or fishing line could be tied without slipping off the stone. Grooves are not normally deeper than 2-4mm, but their width varied between 7mm and 22mm. The average width was *c* 13mm.

The main groove is horizontal and lies below the mid-point of the cobble, towards the basal end (about a third of the way up the stone from the base). Where the groove met the side of the tool a wider pecked notch was noticed. Although in some cases this could have been the result of wear, eg SF 696 from Phase 7.

Five of the weights, which had only the single horizontal groove, exhibited other signs of wear on the cobble body, usually at the tip. Four examples, SF 598, SF 694, SF 696 and SF 1438 from Phase 7 and unstratified contexts had slight pecked indentations or notches at the tip, one up to 3mm in depth and forming the beginning of a groove. SF 599 was chipped at the tip and had subsequent wear marks. The indentation at this point was necessary for the attachment of a rope or line at right-angles to the one in the lower horizontal groove.

Of these cobbles only SF 599, SF 694 and SF 696, all from Phase 7, showed additional shallow pecked areas on the sides of the body below the tip, but these side notches were not a complete second horizontal groove. On SF 696 one notch was cut, possibly by a knife, and then abraded by wear. These pecked areas were no doubt thought necessary for the additional security of the line around the stone.

The remaining cobbles SF 693 from Phase 5, SF 695 and SF 697 from Phase 7, SF 698 and SF 722 unstratified, had in addition a complete or near complete vertical groove running from the tip to the basal horizontal groove. This appeared on both surfaces and extended the notch at the tip, as described above. The vertical groove was often narrow, possibly indicating that it was secondary, but the notch at the tip of these stones could be as much as 6mm in depth, thus indicating that the weight had had prolonged use.

SF 696 from Phase 7 had in addition 3 shallow pecked notches down one side.

SF 697 (illus 92) was from a pit (J pit 3) in Phase 5 and is the most elaborately grooved of all the weights. In addition to its horizontal basal groove and its vertical groove which extends around the notched base, the stone has three further horizontal grooves. Two are close to the tip and there is an additional one towards the base. The body of the stone is also generally pecked.

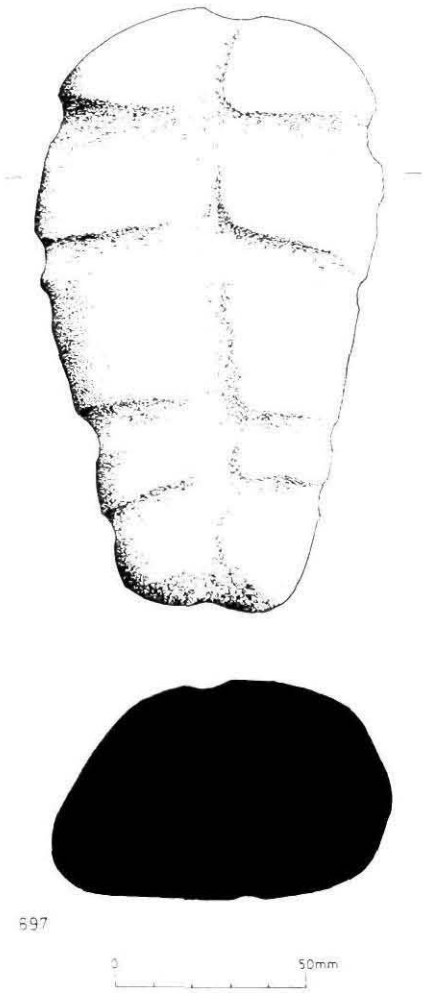
COMPARISONS AND DATING

None of the Biggings grooved line-sinkers were from secure stratigraphic contexts except for SF 697, the most complex weight, found in a pit. The rest are mainly from Phases 5 and 7 or are unstratified. The Phase 7 example SF 696 is one of the simplest weights. It is however impossible to suggest with certainty and with such small numbers of artefacts, whether the weights became simpler over time.

The distribution of the stones tells us little apart from the fact that they may have been in use at the site from the early 17th century to modern times, and also that their original locations were disturbed contexts. Their occurrence indicates that some repairs to fishing gear, either to the stones themselves or to the lines and nets they were attached to, took place on or close to the site.

The weight of these stones, at little more than 1kg, suggests that they are 'cappie-stones' from the old Norse *'køppu-stein'*, used to anchor 'Haff' fishing lines. These lines were used for deeper sea fishing for cod, ling & tusk, where the anchor stones (grooved line sinkers) may have weighed more than 1000g (Fenton 1978, 577). In contrast, sinkers for handlines were traditionally made of steatite and later lead, and weighed approximately 680g (*ibid*, 528, 594).

Grooved line sinkers were also found through out all the Viking/Norse phases at Jarlshof made of both schistose rock and steatite (Hamilton 1956, plate 34, 182). Steatite examples of 13th-/14th-century date found at Sandwick, Unst, were usually perforated and grooved (Bigelow 1989, 188).



illus 92
Grooved stone line-sinker SF 697.

PERFORATED STONES

This category contains both flattened beach cobbles and other flat stones with usually a single perforation. There are in total 41 stones from almost all phases of the excavation. Only three were from the early phases: two came from over the floor of the Phase 2 possible *eldhus*, and one from the hearth in the *eldhus* in Phase 3. A further 10 stones were found below the floor of the westernmost building in Phase 4 and from the dump (K98) associated with it. Another nine stones from this phase were located in pits at the east side of the excavation, specifically pit J55. Two others came from a Phase 4-5 pit (L41) also at the eastern end of the site. In contexts belonging to phases 5-7 again at the east side of the site, another eight stones were located; six were related to the Phase 6 Gørl.

The prolonged occurrence of these stones from Phase two to Phase 7, suggests a continued used of this type of artefact until recent times, as indicated by 2 roofing 'slates' SF 658 (unstratified) and SF 665 from Phase 7. The majority of the stones were used as simple weights, probably as loom weights.

ROCK TYPES AND SIZE

The predominant stones used were mica-schist, micaceous sandstone, a fine-grained metamorphic rock and sandstone: the latter in the form of beach cobbles (25). For the more irregular stones (13), micaceous sandstone was the dominant resource used. Steatite was also used, as two examples indicate (**7.2.4** above). The roofing slates are of micaceous sandstone and mica schist, as is a perforated whorl, SF 668, from Phase 6. All these rock types are present on Papa Stour or on the adjacent mainland (**1.2** above). Utilization of beach and cliff resources would account for the majority of these artefacts. Of the beach cobbles, 68% are complete, in contrast to the more irregular stones where only 25% are undamaged.

The average weight of the beach cobbles is 582g lying between a range of 312g and 786g, with only a single stone heavier than 1.5kg. All stones have a length of 107-178mm, width of 54-142mm and thickness of 13-65mm.

FORM

BEACH COBBLES

These stones are largely unaltered cobbles, except for the occurrence of a single perforation. They required little further adaptation for the use to which they were put, as suspended weights. Only SF 607 from Phase 2 has an area of pecking on its edge below the perforation. Other nicks and chips on the body of the stones, eg SF 664 from Phase 6 and SF 673 from Phase 4, are considered accidental or post-depositional occurrences.

The area which was consistently altered was the edge of the stones, closest to the perforation. Here tooling by pecking, chipping and subsequent wear is apparent on 52% of the stones. Often the tooling appears as a rough level area above the perforation eg SF 666 Phase 7, or in the examples from Phase 4 of which SF 677 has a notch 4mm deep, and SF 661 with one 9mm deep. The wear from the edge to the perforation on SF 674 is almost a groove while SF 676, although incomplete, has a single notch on the edge below the perforation.

It would appear that in general the altered area above the perforation was not intended to be smooth, but roughened to hold the thread or line securely to the stone and prevent slippage. The wear seen on SF 674 is, however, most likely the result of prolonged use. The notching or roughening of the stone at its apex is not dependent on the type of stone used, nor on the phasing, as altered and unaltered weights appear in the same phases.

OTHER STONES

The fragmentary state of stones other than beach cobbles, which were used as weights, makes general observations on their form difficult. Of the three complete stones, only two are worn, pecked or notched above the perforation. Other surfaces and edges of the stones have not been altered manually.

PERFORATIONS

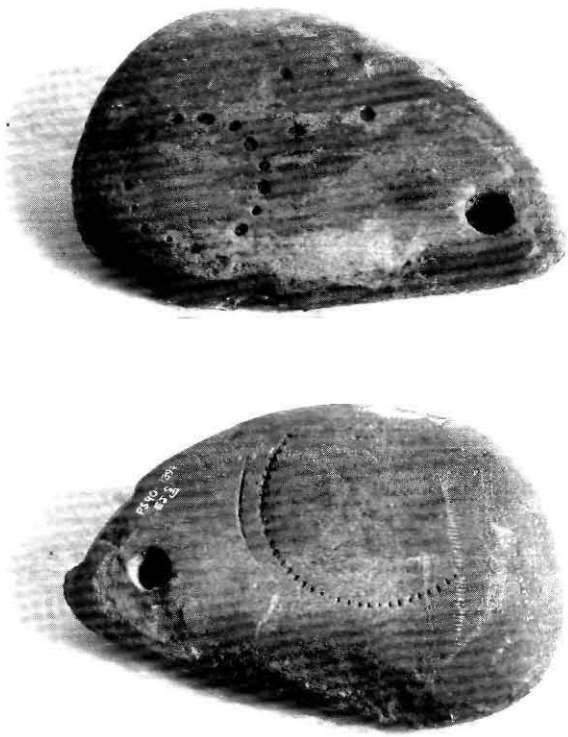
Perforations are usually located towards the narrowest end of the stone, and lie between 19mm and 50mm from the nearest worn edge. The majority lie *c* 40mm from the nearest edge so that in suspension the greater mass of the stone is below the perforation.

The single holes were made by a fine pointed pick, as gouge-marks can be seen on the sides of many of the holes eg SF 654 Phase 3, and around their splayed edges. They were made from both sides of the stone, revealing the accuracy needed to cut the hole precisely, although SF 608 from Phase 5 shows a misalignment of the hole. Others such as SF 609 Phase 2, have an elongated hole, although this may be due to use, and SF 655 Phase 6, may have a natural elongated hole which was subsequently utilized.

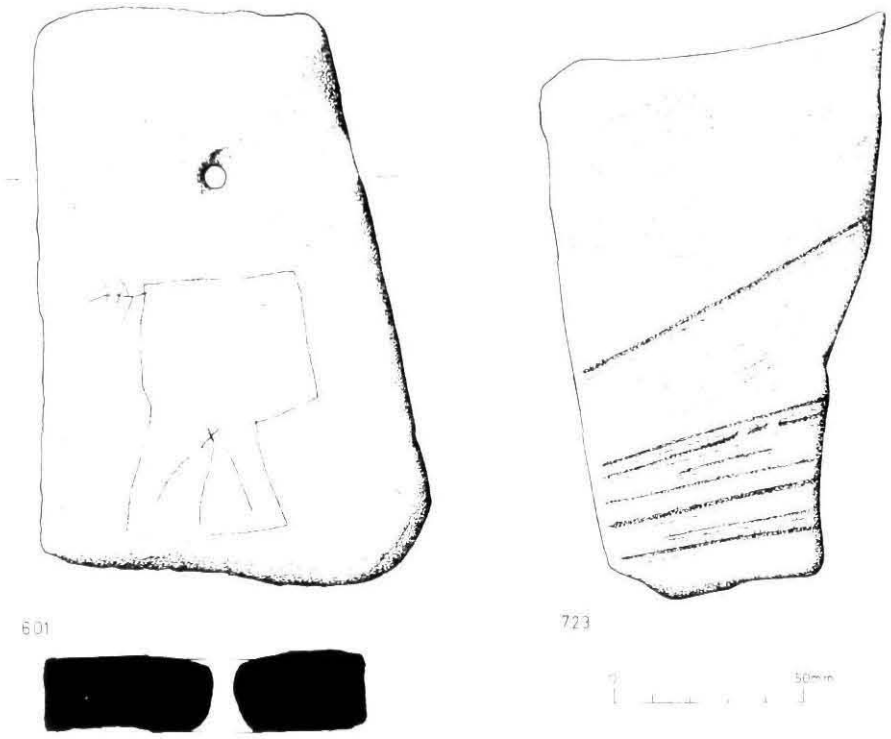
In general perforations were not ground smooth afterwards. The exceptions are SF 1394 from Phase 4-5, and SF 601 Phase 6, which have drilled holes. The average size of the hole is 7.3mm although the size of the perforation can vary between 4mm and 18mm. The surrounding splay is on average *c* 19.5mm in diameter.

DECORATION

Only four stones are decorated. They are three irregular stones and one beach cobble and weigh between 528g and 620g. The beach cobble SF 1394 Phase 4-5 (illus 93), is from the centre of the excavated area found in Trench EJ. It has not only a drilled perforation but a machine executed design on both faces. On one face is a semi-circle of fine machine slots, as if from a cog wheel, and other similar faint marks. The other face has a group of four dots in a square and a circle of 15 dots towards the base of the stone. This design may have been unfinished.



illus 93
Perforated and decorated beach-cobble weight SF 1394; reproduced at 1/2.



illus 94
Perforated and decorated stone weight SF 601 and whetstone SF 723.

SF 601 from Phase 6 (illus 94) is from the Gorl floor and has a single irregular 7-sided incised linear design with a rough equal-armed arrow at its base. This decoration lies below the perforation on one face.

Also from Phase 6 is SF 679 (illus 95), from Trench E. It has on one face two designs which lie either side of and below the perforation. One appears to be an incised buckle, or the mould for one, and the other is a depressed circle.

From an unstratified context is SF 1471 (illus 96). On one face is a centrally placed, roughly inscribed cross, perhaps worn or unfinished, with wider terminals to the ends of the arms. On the reverse is an incised square 23mm x 25mm with another partly formed cross lying between the square, the perforation and the edge of the stone. The cross is similar but smaller than the one already described.

Although a few decorated weights exist, the vast majority are plain. It is suggested that the decorated ones, which are all on micaceous sandstone, are a late introduction to the site, perhaps from the 17th century.

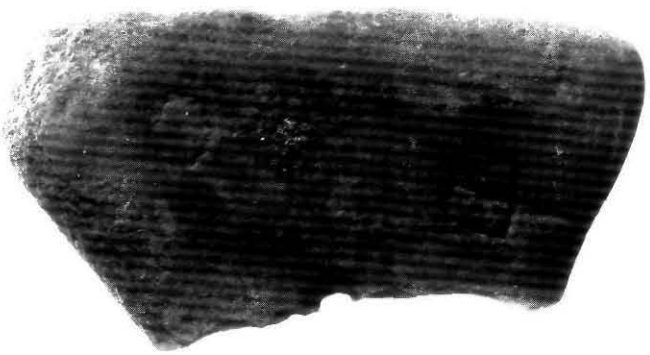
WEIGHTS

WEIGHTS FROM BELOW THE FLOOR OF THE BUILDING IN TRENCH K IN PHASE 4

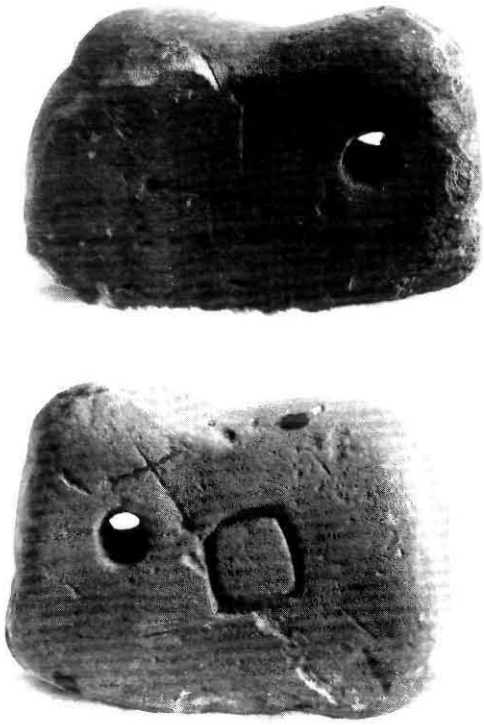
There were six weights in all, from context K75, a levelling layer. They are all beach cobbles which weigh between 288g and 670g and are of metamorphic rocks, mica schist and an unidentified rock type. All are complete except one. SF 659 has possible wear marks and SF 674 is notched and almost grooved above the perforation. These stones are of similar size: maximum length 106-138mm, maximum width 54-107mm and maximum thickness 18-30mm.

WEIGHTS FROM PIT JL55, DUG INTO THE PHASE 3 STOFA DURING PHASE 4

These 9 weights were found lining the pit. Six were broken at the perforation the other three were complete. They were exclusively of micaceous sandstone and sandstone. The complete stones weigh 476g, 1110g and 1552g, suggesting on average that they would have been



illus 95
Perforated and decorated stone weight SF 679; reproduced at 1/2.



illus 96
Perforated and decorated stone weight SF 1471; reproduced at 2/3.

heavier than those from the west side of the site. Six were slabs of stone, the remainder are cobbles. All the complete stones with the addition of one broken example, show evidence of notching, flaking or wear above the perforation. This part of the stone was missing from the other examples. Using the complete dimensions, the stones were *c* 128-178mm long, 94-142mm wide and 18-65mm thick. They appear to be slightly larger than the examples from the west side of the site.

ROOFING 'SLATES'

As previously mentioned there are two fragments of roofing slate, from Phase 7 and an unstratified context, SF 658 and SF 665. They are differentiated from the perforated weights by their chipped edges, and that their perforations were made from one side only.

PERFORATED WHORL

SF 668 from Phase 6, from the Gørl's topsoil, is a round whorl with a drilled hole. Its weight of 74g and its diameter of 47-55mm suggest this is a drill whorl rather than a spindlewhorl.

DISCUSSION

Excepting the roofing slates and the perforated whorl the remainder of the artefacts in this category can be described as loom weights.

Loom weights are probably one of the most ubiquitous artefacts found on Viking and Norse sites although they have their origin in the prehistoric period. In some parts of the Viking world such as Denmark and Gamlebyen, Oslo, these weights were primarily made of clay. The Shetland Isles offer a contrast in that stone was a more common, and probably a more easily worked resource than clay in unskilled hands. Not a single clay perforated weight has been found on Shetland. In early Norse times steatite was the preferred stone on Shetland sites eg, Sandwick and Jarlshof, but beach pebbles replaced it early at the latter site (Bigelow 1985,106).

Steatite cobble weights with a single perforation, and reused perforated vessel fragments occurred at the Biggings from Phase 2 onwards (**7.2.4** above). Comparison of their distribution with the other loom weights is difficult because of the disturbance of contexts in which they were found and the reuse of steatite. However, it is possible that in Phase 4, both types were used together.

Stones chosen for weights were those nearest to hand and those which could be perforated the easiest. Stone was also used in Viking-Medieval Reykjavik as loom weights, but alteration of the stone was kept to the minimum (Nordahl 1988, 66).

It is suggested by Rui (1991, 128) that loom weights have only one hole as they are used to tauten warp threads. Weights are normally found together and *in situ* on the floors of buildings, and those from the Biggings lie within the weight ranges most used for weaving. Their presence also indicates that the inhabitants at the Biggings were using a warp-weighted or vertical loom. Comparison with the detailed accounts of the Bryggen weaving equipment (Øye 1988, 58-70) is interesting in that it forms the most direct parallel in shapes, size and weight of stones. The additional use of sandstone on Papa Stour offers the main contrast, otherwise loom weights from the Biggings differ little from their Norwegian counterparts. However, textile production at the Bryggen declined from the first half of the 14th century onwards because of the take-over by German Hansa merchants of the properties excavated (Øye 1988, 144 -5).

The occurrence of perforated stones beneath the Phase 4 western most building suggest that they originated in Phase 3, possibly from the *skáli*. The largely broken weights lining the Phase 4 pit (J55), possibly from the Phase 3 *stofa*, also indicate that they could have an earlier origin or were simply discarded and reused during Phase 4 (**8.4** above). The earliest dating of these weights is from approximately the mid 13th century to the beginning of the 15th century and they were also found in contexts which could be as late as the early 17th century. These dates are very late in comparison with the Oslo material, where the horizontal loom began to replace the warp-weighted loom in the 12th century.

Consideration of other textile evidence, such as steatite spindle whorls and textile and fibre samples, suggest that the warp-weighted loom did in fact persist much later in Shetland, and at least into Phase 4 at the Biggings, to possibly as late as 1650. In Sweden and Denmark the warp-weighted loom had already been replaced by the horizontal loom during the 13-14th centuries, but in Iceland and the Faeroes the warp-weighted loom persisted as the most common loom until the beginning of the 19th century. There is evidence from western Norway that the warp-weighted loom survived until the 1950s, where it was used for special needs and wide weaves (pers comm Kristina Andersson Sulley; Nylén 1968, 119-124).

PUMICE

with an additional report by Anthony Newton

Twenty two pieces of pumice (not illustrated) were recovered from the site, and from Phase 2 onwards. The majority of pumice pebbles came from Phase 7 or were unstratified. The pumice is of two types, a light grey frothy pumice (six pieces) and a darker vesicular one (15 pieces). Half the pumice (10 pieces) was unworked, which included the earliest piece, SF 192, from a Phase 2 context on the west side of the site. On average the unworked pumice was of smaller pieces than the worked. No pumice pebble was larger than 90mm x 60mm x 46mm.

THE ARTEFACTS

SPINDLEWHORL OR RING

From the Phase 3 *skáli* hearth (context E48) came half of a spindlewhorl or ring SF 441 of white pumice. The piece had been roughly rounded to *c* 50mm in diameter, with the faces flattened and the sides smoothed. It had broken at the perforation.

WORKED PIECES

These include brown/grey pumice pebbles which have been mainly altered by wear. The use of the pumice for rubbing or smoothing resulted in pebbles with extensive areas of wear as in SF 273 from Phase 7, or in pebbles with more limited areas of alteration. In the latter category is SF 270 from Phase 2-3, an irregular pebble with a flattened surface and a chamfered edge, and SF 189, Phase 4, a fragmentary pebble with knife trimming at one end. Pebbles with limited alteration occur in Phases 3 to 5.

Brown/grey pumice pebbles with extensive alteration

SF 269 Phase 6, is a fragmentary pebble which has been flattened on one surface with a concave indentation. The other surfaces have been trimmed and faceted.

SF 273, Phase 7, is a rectangular block, hollowed smooth on two opposing faces, and with random hollows on the other faces. Both its ends are smoothed and one is slightly bevelled. This has been a rubbing tool.

SF 276 Phase 6, is a rectangular piece with all surfaces smoothed. This was probably used as a rubber.

SF 623, unstratified, is an irregular shaped pebble which has been smoothed on one surface and worked/used on both edges and at its pointed end.

SF 624, unstratified, is also smoothed on one surface but has a linear indentation on the adjacent surface.

REPORT ON THE PUMICE

Anthony Newton

INTRODUCTION AND BACKGROUND

Pumice has been found around the coasts of the North Atlantic on both natural raised and present day beaches and in archaeological sites (Binns 1972; Newton unpublished). These deposits are very widely distributed, including sites in Arctic Canada, Greenland, Iceland, Svalbard, Russia (the Kola Peninsula), the British Isles, Norway, Sweden, Denmark and Germany. In areas with well developed raised beach sequences the deposits range in age throughout most of the Holocene. The earliest deposits are found in Svalbard, where pumice is found on beaches in excess of 8000 years old. Norway also has pumice on beaches over 7000 years old. Coastlines with poorly developed or buried raised beaches have nonetheless produced pumice from numerous archaeological sites. This is particularly true of Scotland, with the earliest pumice pieces being found in Mesolithic deposits on Jura. Pumice is found in archaeological sites throughout the Neolithic, Bronze and Iron Age deposits right through to modern times. The largest concentration of finds has been in the Western Isles, Orkney and Shetland. Pumice has also been found on mainland Scotland and Ireland.

The vast majority of these deposits consist of either black or brown/grey pumice. This pumice is dacitic in geochemical composition and was mostly erupted from the Katla Volcanic System, on the south coast of Iceland. From here, the pumice was transported to the coasts of the North Atlantic by ocean surface currents. Due to the temporal spread of the deposits and the presence around Katla of up to 12 tephra layers of similar geochemical characteristics to the pumice (Newton & Dugmore 1995), it seems likely that several eruptions were responsible for the production of the pumice. It also appears that some of the pumice found on Svalbard was produced by an eruption from Jan Mayen, to the north of Iceland.

Some white pumice has also been found at the Biggings and this is much rarer. In Norway, white pumice has been found on a raised beach over 10,000 years old and is of unknown origin (Newton unpublished). Much younger white pumice has also been found on Shetland (Dugmore & Newton unpublished). This pumice was produced by a large eruption of Öræfajökull, south-east Iceland, in AD 1362. Pumice from this eruption could have been transported by ocean surface currents, but there is also the possibility of human transport with trade with Iceland.

Pumice would have provided the local populace with a useful abrasive tool. Many of the pieces found on archaeological sites show obvious signs of wear, with grooves and holes produced by sharpening antler, bone or wood. Larger pieces with flattened sides are also found, where they would have been used for rubbing various materials, including skins and wood, for example. Pumice also was, and is still, used as floats for fishing nets and lines. The pumice may have been recovered from a contemporary beach or a raised beach. It is also possible that pumice may have been taken from an older settlement site, perhaps from a midden or some abandoned building.

PAPA STOUR PUMICE

Most of the pumice found at the Biggings can be loosely classified as brown/grey pumice but SF 188, SF 274, SF 441, SF 616 and SF 617, are rarer white pumice pieces. This pumice is far more vesicular than the brown pumice, and is therefore less dense. It is also possible to attribute the white acidic pumice deposits to specific eruptions in Iceland and, therefore, use them as a dating tool.

Brown/grey pumice

This type of pumice is found in coastal archaeological sites throughout Scotland (Binns 1972; Newton & Dugmore 1995, and forthcoming a and b). Despite the lack of geochemical analyses it is possible to correlate this pumice to the most common types found on raised beaches in Scotland, north-west Iceland and Norway. At present the geochemical composition of this dacitic pumice does not allow individual eruptions to be identified. This unfortunately limits the potential of using this type of pumice as a dating tool.

White pumice

Although the only other white pumice found in the British Isles, at Scalloway in Shetland, was produced from the AD 1362 eruption of Öræfajökull, it was necessary to analyse the Papa Stour pumice to check that it was not reworked material from an earlier eruption of Öræfajökull or another Icelandic volcano. Major element electron probe microanalyses were carried out on pieces SF 188, SF 274, SF 441 and SF 616 (details of the microanalysis and the resulting table can be found in the archive). All of the pumice shows similar geochemical characteristics to the tephra produced by the June eruption of Öræfajökull in AD 1362 (see Thórasinsson 1958). Only SF 188 has slightly different geochemical characteristics which are insignificant.

The Papa Stour material provides a useful dating tool as any secure context containing a piece of this pumice cannot be older than AD 1362. It is not possible, however, to stay how soon after the eruption the pumice reached Papa Stour. Much of the pumice produced during this eruption reached the sea and could have been transported by ocean surface currents. There are no written records of this pumice reaching the shores of north-west Europe. Of course, this does not mean that some pumice did not become washed up on the beaches on Shetland, and if this was the case, it would have occurred within a few weeks or months of the eruption. The other possibility is that pumice was brought from Iceland by human activity.

QUERNS

Fragments of rotary querns, used for grinding corn, were found in all phases of the site except Phase 1. In total, 22 stones were recovered, the majority came from Phase 7 (four) or from unstratified contexts (seven).

LOCATION

The Phase 2 *skáli* (Trench H) contained two querns (SF 681 and SF 1744), from the flue and its capping (Hi7, Hi14). In Phase 3, one (SF 1745) was found behind the oven. Also in Phase 3, a quern fragment (SF 1103) came from the floor of the *stofa*, but this was most likely used as a patch on top of the decaying wooden floor. Another fragment (uncatalogued) was found discarded in the sump of the same building. In Phase 5 two querns (SF 1104 and SF 1106), were found in disturbed

contexts around the dwelling-house. Other fragments were generally distributed around the site, external to the buildings. None were found *in situ*.

ROCK TYPES

As far as can be ascertained, the majority of stones were made from mica-schist and only one of garnetiferous mica-schist (up to seven querns were left at the Biggings and were not fully catalogued). These are rock types local to Shetland but not to Papa Stour (**1.2** above).

FORM

The majority of the stones are considered to be upper stones, but their fragmentation and breakage at the central perforation has made identification difficult. Post-depositional abrasion has led to the loss of the worn surface on eg SF 1389 from Phase 4-5, or other surfaces eg SF 1108 (unstratified). None of the stones are circular, more often irregular in shape, but their edges had usually been pecked or chipped to smooth the overall shape. Finishing by pecking was often difficult to distinguish because the mica-schist laminated when eroded. Only one stone, SF 1100 from Phase 6, showed evidence of all-over pecking.

Six stones produced evidence of their central perforations which measured 27-70mm in diameter, but only one, SF 1100, had a collar around the hole, identifying it as an upper stone. Four stones have evidence of additional handle sockets, eg SF 681 Phase 2 and SF 1100, which were 27-37mm in diameter and thus also identified as upper stones. The socket in SF 1100 was wedge-shaped in profile.

Although fragmentary it was possible to ascertain that some of the stones measured between 300-407mm in length and up to 245mm in width. The thickness of the stones varied between 25-60mm, but most lay towards the thinner end.

WEAR

Most of the wear patterning, where it survived, showed that the surfaces of the stones were often worn into a concave shape, eg SF 1100. Radial striations on the worn surfaces of three fragments (SF 1106 from Phase 5, SF 1109 Phase 7 and SF 1110 unstratified), showed that prolonged use tended to form grooves in the mica-schist. On other stones ie SF 681, the worked surfaces was ground completely smooth, especially along the edge of the stone, or the centre became highly polished as in SF 1100. In this type of schist, especially after burial, surface retooling was impossible to see.

QUERN RUBBER

The only stone in this category which was not of rotary type was SF 1385, from a clay layer over a Phase 4-5 pit (EJ2) in the centre of the site. It may have been found and brought to the site during the collection of clay to cap the pit, as clay is not found in the immediate vicinity of the Biggings.

The stone is identified as a sub-circular quern rubber *c* 197mm in diameter, from a non-rotary (prehistoric) quern. It is complete with chipped edges (possibly damaged) and an upper surface which is pecked. Its lower surface is polished with wear and is slightly concave. There is also evidence of possible repecking.

DISCUSSION

Querns were an important aspect of the economy, indicating the cultivation of corn and its processing for flour. Querns have been in active use from the Neolithic period till modern times. The shape of the quern has varied over time, from the saddle-querns of the prehistoric period to the introduction of the rotary quern during the Iron Age. The latter stayed in use until the 19th century in the Northern Isles (see Fenton 1978) with little variation in form from the Iron Age.

The querns found at the Biggings are not in themselves datable. There would have been little notable change in querns at use on the site from Phase 2 through to Phase 7. They simply reflect the perpetuation of a long tradition which was the mainstay of all domestic economies in rural areas.

RHYOLITE

Like jasper, rhyolite (liparite) has also a cryptocrystalline structure, but it is a harder substance. It is also found widely on Papa Stour (**1.2** above). Some of it contains minute sperulites (Mykura 1976, 53) which are minute radiating spherical crystalline fibres. Although rhyolite forms the bedrock beneath the Biggings only six pieces were collected as worked or unworked samples.

One of the pebbles, came from Phase 2 and one from Phase 3, both were polished. A further pebble was found in Phase 4 and one was an unstratified fragment. Two additional rhyolite samples were collected from Phase 3.

POLISHED PEBBLE SF 995

This pebble was found on the floor of the Phase 2 *dyngja* dated *c* AD 1050-early AD 1200. It is a flattened oval, highly polished on one side, and is slightly convex in two planes. Both faces are slightly faceted and have polished areas in their centres. From the hearth of the Phase 3 *eldhus* is a similar polished wedge-shaped pebble of spherulitic rhyolite, SF 994 (illus 97) dated *c* AD 1250-1400. The piece is highly worn, has slightly convex sides and is partly faceted at both ends. SF 965 is a small blackened rhyolite pebble, possibly burnt, which was found in peaty deposits in Phase 4. A fourth pebble, SF 997, is fragmentary and unstratified. Although it is slightly larger than the two artefacts described above it is also highly polished, and in addition has longitudinal striations on the areas of polish.

illus 97
Polished rhyolite pebble SF 994; reproduced at 2/1.

DISCUSSION

Alexander Fenton

Plough pebbles used as anti-wear devices on the land sides of ploughs that are more subjected to hard contact with the soil are well known. Numerous examples have been found, especially in Denmark where peat bogs have preserved wooden plough parts with pebbles still in the plough-bodies. Pebbles continued in use on ploughs in Jutland (and the Auvergne district of France) till the beginning of the 19th century. In Scotland, plough-pebbles have been found in Roxburghshire (especially at Newstead), in Midlothian, in East Lothian, in Wigtownshire, in Bute, and at Jarlshof in Shetland (Fenton 1963, 276-9; Clarke 1972, 50-51). A more recent study has reviewed such anti-wear devices in Ireland (Brady 1988, 47-60).

In Scotland, the earliest dating of a plough-pebble has been for one of the two from Jarlshof in Shetland, from the filling of a Norse outhouse of 12th- or 13th-century date (Fenton 1963 278). Excavations at Whithorn in south-west Scotland have also produced plough pebbles, the earliest dated to the 5th-6th centuries (Hill & Nicholson 1997, 464-6). This

evidence points to a broad spread in time from the post-Roman to the monastic period of the 12th-13th centuries, and in Denmark and France the plough-pebbles continued in use until the early 19th century.

The Papa Stour pebbles, although of contemporary date, do not correspond in form to the undoubted plough-pebbles with convex faces with parallel striations. The Papa Stour specimens have flat, polished faces. There are, however, close equivalents from Newstead with flat or only slightly curved faces, also highly polished and with striations running short-ways across them. One of the Newstead pebbles (possibly also of rhyolite) has a flat, oval form and is like a smaller version of the Papa Stour examples.

The Newstead examples, found as they are amongst plough-pebbles, suggest a presumed association. In Denmark examples of pebble-studded wooden axles have been found, originally assumed to have come from the wheeled fore-carriages of medieval ploughs. These pebbles have flat, polished faces; many have deep striations, suggesting heavy duty, with a sharp leading edge and a more amorphous trailing edge. Current research in Denmark, however, appears to suggest that pebble-studded axles did not belong to the fore-carriages of ploughs, but more likely to wagons. The question of how the wear was produced has not, however, been satisfactorily resolved, for pebble rubbing against wood should create erosion of the wood (Lerche 1994, 39-41; Schovsbo 1987, 109, 219, 244). Could they have been rubbed against iron?

The problem of the Papa Stour pebbles, therefore, is not clearly resolved. Pebbles with flat, polished faces are not from the bodies of ploughs, and it is unlikely that they are from the axles of the wheeled fore-carriages of ploughs. They may however, be from wagon axles, or from something else altogether. What seems certain is that they were held in a firm frame, as when embedded in wood, in such a way that movement to create the smooth, polished faces was in one direction only. The two faces of the Papa Stour pebble SF 994 could be due to its having fallen out of its frame, and being replaced the other way up. But the incipient face on SF 995, not yet flat and smooth, remains a puzzle, as does the employment of similar pebbles in general. It is possible that these two pebbles were introduced into the buildings of the Biggings in old plough-wood destined as fuel.

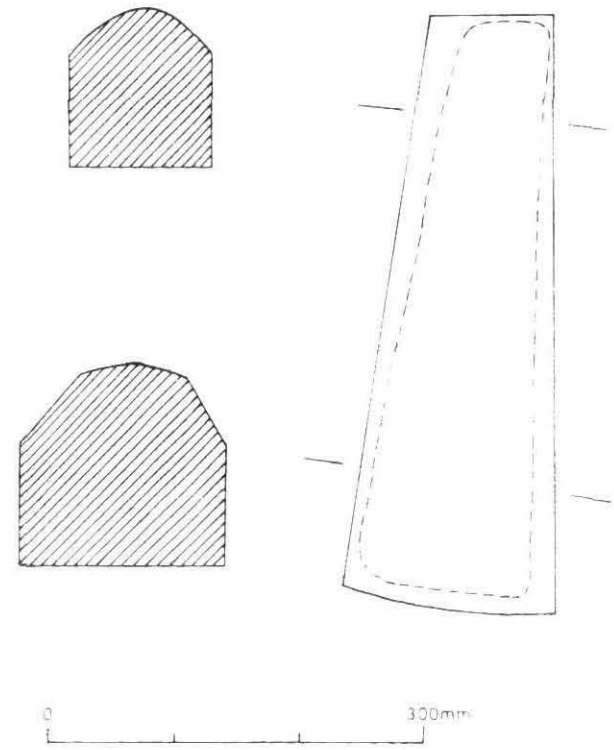
RUSTICATED STONE VOUSSOIR

Denys Pringle

The stone was found in 1990 in upper layers to one side of the Norse house. It is a piece of sandstone, cut with the bedding plane parallel to the face, and measuring 0.466-0.48m long, 0.10-0.17m wide, and c 0.10m deep with a raised boss 0.65m high on the face. The stone appears to have been a voussoir from an arch. Its longer sides are smooth and straight and show signs of tooling; the extrados is rounded and also smooth, but the intrados is flat and somewhat rough, perhaps as a result of later damage. Its shape indicates that it came not from a regular semi-circular arch, but from an arch whose intrados had a different profile and centre-point to its extrados. Depending on what the position of the voussoir was in the arch, the arch might have been either flat, pointed or stilted, with a rounded extrados (illus 98).

Simple doors and gateways with rusticated jambs and voussoirs are a feature of Scottish Renaissance architecture from the late 17th century. Dated examples in domestic buildings are recorded at the Mansion House, Greenock (1674; now destroyed), Wallyford, Midlothian (1672), and Elliston House gateway, Linlithgowshire (1665), and an undated example apparently of the same period is found at Old Bishopton house, Renfrewshire (MacGibbon & Ross 1887-92, III, 485, 490; IV, 65, 87).

In the Northern Isles surviving houses of this period are few. At Smiddy Bank in St Margaret's Hope, South Ronaldsay, however, there survives a re-erected gateway surmounted by a heraldic stone apparently celebrating two marriages, with respective dates of 1633 and 1693. The gate has smoothly rusticated jamb stones, and a lintel carved to appear like a flat arch with smooth rustications (MacGibbon & Ross 1887-92, IV, 404-405; Royal Commission 1946, III, no 839, pl 87).



illus 98
Rusticated stone voussoir.

The stone from the Biggings may quite possibly have come from such a door or gate of the late 17th or early 18th century. If so, it is obvious that the gate no longer exists. In 1812, however, Hibbert recorded that the Mowats had their arms displayed on 'the gateway of an old mansion' at Northhouse across the bay from the Biggings (1891,). The heraldic stone still exists, though not *in situ* (RCAHMS 1946, III 1705, illus 12 above). It is not impossible that this was the provenance of the voussoir.

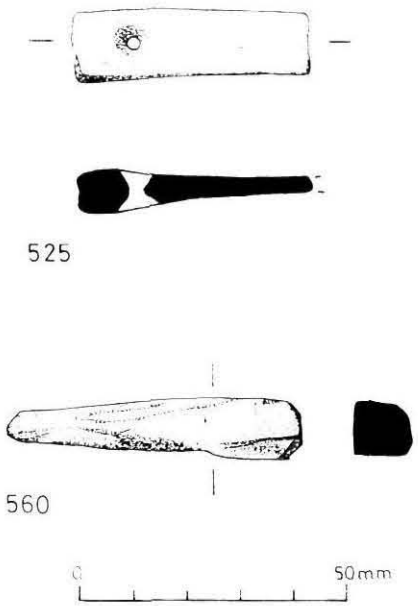
WHETSTONES

with John W Allen

One of the commonest artefacts found at the Biggings was the whetstone, hone or sharpening stone, used principally for the sharpening of iron or steel knives. A hone is defined as a smooth, hard but fine-grained stone for sharpening instruments, whereas a whetstone is a stone which is used to sharpen by rubbing, or a stone for sharpening edged instruments (Chambers English Dictionary 1989). The term 'whetstone' will largely be used for these stones and in total there were 77 found at the site.

ROCK TYPES

Except for two modern hones (SF 570 from Phase 7 and SF 594 from an unstratified context), the majority of whetstones are of two types of rock: 55% are a fine-grained metamorphic schist which is foliated and therefore easily split, and 39% are micaceous sandstone probably originating as beach stones. Three others are of an unidentified fine-grained micaceous rock. Micaceous sandstone is found on Papa Stour but fine-grained schist can be located on mainland Shetland (**1.2** above). It would appear that there is no distinct pattern as to what type of stone was used in a particular phase as both types of whetstone appear in all phases.



illus 99
Whetstones SF 525 and SF 560.

FORM (illus 99)

Whetstones of fine-grained schist are usually long and thin, while those of micaceous sandstone are usually larger beach cobbles or blocks. The length of the stones has not been included in the analysis of whetstone form as they are often fragmentary, and often it is difficult to determine if there was an old break or if the end of the stone remained unfinished. No joins were found between any of the artefacts.

The fine-grained schistic whetstones have dimensions of between 8-42mm in width, rarely to 47mm, with a thickness of 4-28mm, to as much as 35mm. On average they were rectangular or square in section. Sandstone whetstones are larger with widths of 11-105mm and thicknesses of 11-40mm. The latter type are distributed evenly across their range of measurements while those of schist cluster at the fine end of their range lying between *c* 10-22mm in thickness and 11-18mm in width. In addition there is a complete overlap in the measurement distribution of the two types. This suggests that although the elongated tools of fine-grained schist were preferred, that micaceous sandstone was equally as effective as a sharpening stone even though it produced a larger and therefore heavier tool.

WEAR PATTERNS

Many of the fine-grained schistic whetstones have undergone severe wear, and are therefore much altered from the original form of the stone. When quarried, the schist would have been split into long bars (Myrvoll 1986, 161-80) which may have been broken into suitable lengths for use. Several of the Biggings tools are much reduced in size and shape, and have become very thin, especially at one end, eg SF 1618, SF 561 and SF 531. Their tapered appearance often lead to further breakage. The haunched appearance of some of the stones (the haunch being the part of the stone which was held but was not a formalised handle) indicates the probable original width and thickness of the stone.

The wear is usually on all four sides or faces of schistic whetstones, giving each side a concave appearance. On others the wear can be restricted to only two or three faces. Convex wear is rare due to the action of sharpening metal on the stone. Many of the larger schist whetstones are also well worn. In contrast the sandstone tools generally show little sign of wear or alteration, and certainly the wear is not as pronounced as on schist. Wear has been restricted to areas of polish on one face, such as SF 551 which has two polished areas on one slightly concave face; SF 563 which has been used along one edge and possible on one face, and SF 723 which exhibits wear in the form of grooves towards one end of one face. Other sandstone tools have small areas of pecking, to modify one end or a side.

PERFORATED WHETSTONES

There is only one stone with a perforation or a suspension hole, SF 525 (illus 99) from J pit 2 in Phase 4. The stone is only 44.5mm long, and it broken at its distal end, where long use reduced it in thickness to only 3-4mm. A single splayed hole was bored, from both sides, and lies approximately 1cm from the surviving end. The hole has a maximum diameter of 8mm and shows little sign of wear. This may suggest it was suspended by a soft thread or a piece of leather from a belt. One face in particular shows signs of concave wear, while the remaining face and both sides are smooth.

LOCATION

The earliest whetstones were found in Phase 2 associated with the floor and hearths of the *dyngja* (Trench J). There were six whetstones from this phase, three of schist and three of sandstone. In Phase 3, the highest numbers were again from the *stofa* and its contemporary *eldhus*; three were of sandstone and five of schist. By Phase 4 the greatest number of whetstones were no longer *in situ* and both schist (11) and sandstone (8) were found largely in the Trench K dump (98), in levelling layers associated with the dwelling-house at the west end of the site, and occasionally in pits. Although sandstone cobbles were still in use, and remained so till the end of the site, sandstone blocks were noticed for the first time in this phase.

Two schist whetstones in Phase 4-5 were from pits, and two from levelling layers as were the two sandstone tools. In Phase 5 the majority of whetstones (11) were still of schist and largely related to the dwelling-house on the west side of the site. In addition there were three sandstone tools. Schist tools (six) still dominated over sandstone (one) in Phase 6, although half were associated with the Gørl, the rest were found in disturbed contexts across the excavation. In Phase 7 there were six sandstone whetstones, four of schist and a modern hone fragment. Only one schist, three sandstone blocks and a modern hone were unstratified.

The distribution clearly shows that schist and sandstone whetstones were both in use together at the site, and from Phase 2 onwards. Although the highest numbers of schist tools were found in Phases 4 and 5, they were largely recovered from disturbed contexts. The minimum schist whetstones per phase was three and the maximum 11. In contrast sandstone cobbles remained in small numbers of between one to three whetstones per phase. Sandstone blocks (five) as already mentioned were found for the first time in Phase 4 but from the dump (K98) at the west side of the site. They dwindled to one per phase in Phase 4-5 and 5, but five were found in the topsoil.

Although there does not seem to be any difference in function and distribution of schist and sandstone cobble whetstones, schist was the preferred material. Sandstone blocks form a contrasting pattern, forming two concentrations in contexts associated with Phase 4 and 7. Their use may have been for larger implements or agricultural tools rather than the smaller domestic knives.

DISCUSSION

Whetstones have been found from the Iron Age onward, on rural as well as urban sites, and are a commonly found tool. In the late Germanic Iron Age in Denmark, sandstone whetstones are usually of local production, and were replaced in the Viking period by schist bars (Jensen 1990, 123). Although schist was imported from the beginning of the 8th century, export from the Eidsborg quarry in Telemark Norway began in the early 9th century, enabling light or grey schist whetstones to became the dominant type throughout the Viking and early Medieval periods. Known as *brynestein* (Norwegian) or *hvæssesten* (Danish), the schist

bars from Eidsborg were between 300-350mm in length. Eidsborg whetstones have been found at York and other places in Northern Europe (see Myrvoll 1986, 176; Roesdahl & Wilson eds 1992, 249, 328) during the period AD 900-1100 perhaps to as late as the 13th century, but none of the Papa Stour (or Shetland) examples have been found to come from this Norwegian source. Faeroes, examples from Toftanes (Sturman Hansen 1990, 48) reveal that at least two different schists were in use, and one is most likely to have originated at Eidsborg.

The variety of metamorphic rocks on Shetland and in other parts of Scotland produced a resource (schist) which was exploited to emulate the whetstones from Norway. However, unlike the industrial exploitation of Eidsborg, exploitation of the Shetland material was more likely to have been intermittent and serving the needs of a domestic market. It may not have even been an organised exploitation. However, schist whetstones were found in nearly all phases from the beginning of the Viking period at Jarlshof in the 9th century to the 13th century, the majority of which were haunched and exhibited signs of being well worn (Hamilton 1956).

Schist whetstones were easily transportable, and small enough to be carried about the person suspended from a belt, hence the preferred use for this tool from the Viking period onwards. The larger sandstone blocks found at the Biggings were a purely local response to a local need. Their function may have also varied from that of the schist whetstones in that the sandstone blocks, from Phase 4 onwards, may have had fixed positions such as on benches and were used for grinding and sharpening the metal edges to larger tools. The areas of polish on the examples from the Biggings show the additional actions of rubbing and smoothing. The use of whetstones persisted during all the phases at the Biggings, until both schist and sandstone were replaced by the importation of the mechanical grinding wheel in more recent times.

MISCELLANEOUS STONES

This category includes all other types of stone artefact not considered above. It also includes stones identified on site as being worked but subsequently during post-excavation analysis, judged to be natural. The latter includes stones from Phases 2 to 7.

ARD

This pre-Viking tool type was found in a Phase 6 context in the centre of the excavation and is a fragment of an ard tip, the stone tip of a prehistoric plough. The tool is of micaceous sandstone, with a polished lower surface. There are striation marks on its sides and areas of possible repecking on the base, sides and tip. The stone broke across its middle, 92mm from its tip.

This stone is typical of those found on prehistoric sites on both Shetland and Orkney and was certainly in use until the late Bronze Age - early Iron Age, indeed if not beyond. Many house sites have yielded ards such as the settlements at the Scord of Brouster (Rees 1986, 75) and a possible Bronze Age house at Catpund (Ballin Smith site report). As with a few other artefacts from the Biggings assemblage, this stone was possibly found on the west side of the island and brought back to the Gørl with the peats.

COBBLE TOOLS

Metamorphosed rocks and sandstone were used for larger hand tools, especially in the prehistoric period. The five examples found at the Biggings are from Phases 6 and 7 or from unstratified contexts. They are all beach cobbles, with the exception of SF 690 a split beach pebble. All are large hand-sized stones which weigh more than 700g.

SF 611 is unstratified but displays complex wear by having hammered ends, peck marks along its sides and opposing lateral pecked notches. Parts of its surfaces are polished and its narrower end is also grooved. This stone may have served both as a line sinker and rough hammer.

SF 690 from Phase 6 is a split peach pebble, chipped along its edges. It is uncertain whether this is manmade or natural due to erosion.

SF 706, Phase 7, has a polished surface where it was used as a whetstone, but has additional, deep peck marks down its sides, at both its ends and on the non-smoothed surface. The stone is also fractured.

SF 1112, Phase 6, is a large rounded cobble with a natural hollow on one surface. The hollow may have been enlarged for the stone to function as a pivot stone.

SF 1429 is an unstratified, largely unaltered cobble, except for slight peck marks at its ends and on one surface. It also has two fracture scars.

DISCS

Two discs of micaceous sandstone were found at the site. SF 618 from Phase 3, from behind the NE bench of the *stofa* was a thin roundel, roughly chipped around its edges. SF 691, unstratified, was slightly larger at 50mm diameter, and was totally smooth. One surface was highly polished.

Half a stone disc SF 1384, with a diameter of 16mm was identified as a slate button or washer with a central perforation. It was found between Phases 4 and 5 in a pit (EJ2).

LAMPS

One example of a possible lamp is a sandstone block, SF 687 from Phase 7, with a *c* 150mm deep hollow in one surface. It is an irregular block of stone which has broken at the depression. The hollow and the area immediately around it is slightly blackened and burnt.

Another artefact, SF 1098, from Trench F excavated in 1977, is a sandstone block with a flat base. Its upper face is slightly hollowed and burnt, while the edges of the stone reveal evidence of pecking. The stone has broken at the hollow and it is uncertain whether this represents a lamp fragment or simply a piece of burnt stone. The shaping by pecking may suggest that the former interpretation is more likely.

7.5 LATE NORSE AND MEDIEVAL WOODWORKING, WOODEN ARTEFACTS AND PRODUCTS

Carole Morris

This report brings together wooden objects and samples collected over five seasons of excavation between 1977 and 1990. These objects represent by far the largest collection of domestic and utilitarian wooden material ever excavated in Shetland at any period. Taken together with the ceramic and stone domestic vessels and utensils, they give us a rare glimpse of late Norse, medieval and post-medieval household life.

Each object is identified, where possible, in terms of function, species and conversion, (ie, how the timber was converted from roundwood raw material into the finished

product), and uses the terminology outlined in English Heritage's guidelines for recording waterlogged wood (Morris 1990, 12-14, fig 2). Most of the objects were made from wood which had been converted radially, but some staves and other small objects were made from tangentially converted pieces. The species identification was by the late Camilla Dickson.

7.5.1 WOODEN ARTEFACTS

DOMESTIC VESSELS AND IMPLEMENTS

On most of mainland Britain, any Anglo-Saxon, Celtic, Viking period or Medieval household, whatever its social scale, would have had a large range of wooden vessels and utensils for storing, preparing, presenting and consuming food and drink, and many other household purposes. From the extensive study of surviving wooden artefacts from excavations, it is certain that on most mainland sites, nearly all one-piece, open-topped, circular wooden vessels (ie bowls, cups, dishes, etc) were lathe-turned rather than carved, and would have been obtained from a specialist woodworking craftsman (Morris 1984, Ch 8). The larger vessels were usually used as dairy and kitchen wares, whilst the smaller ones were used mainly as tablewares.

Many different kinds of stave-built (or *coopered*) wooden vessels would also have been found among the range of containers used for food and drink preparation. These were made of narrow staves of wood bound together in a circular form by either wooden or metal bands. Stave-built vessels complemented the lathe-turned wooden bowls and cups, the wooden spoons, ladles and spatulae, the pottery jars, jugs and cooking pots, and the metal cooking vessels in the complete household range, and stave-built containers were also used for commercial purposes, especially the transportation of goods.

Such a comprehensive use of wood depends on it being a widely available resource to exploit, with the craftsman being able to choose the right form of wood, whether green or seasoned, and the most suitable species for any particular task, and the consumer having a wide choice of wooden vessels and tools. The resulting social pattern book of vessels and utensils (at any given period) includes exactly the right sort of vessels for a particular task, whether they be made of wood, ceramic, metal or various other materials such as horn, leather or even glass.

The serious shortage of renewable and manageable timber on the Northern Islands, and especially Shetland, in the time of the Norse and medieval settlement, means that the social pattern book of vessels and utensils used in Shetland, and the materials they were made from, differs greatly from most mainland British sites and even most sites in Norway. The vessels found at the Biggings were mainly wooden stave-built containers of oak and pine, complemented by coarse local hand-made and imported wheel-thrown pottery vessels, some steatite vessels and baking plates (**7.2** and **7.3** above). Even on the mainland, wood as a raw material for making vessels was never a cheap substitute for other materials and each seems to have been used for the tasks it was best suited for. In Shetland, however, wood was almost certainly an imported luxury item.

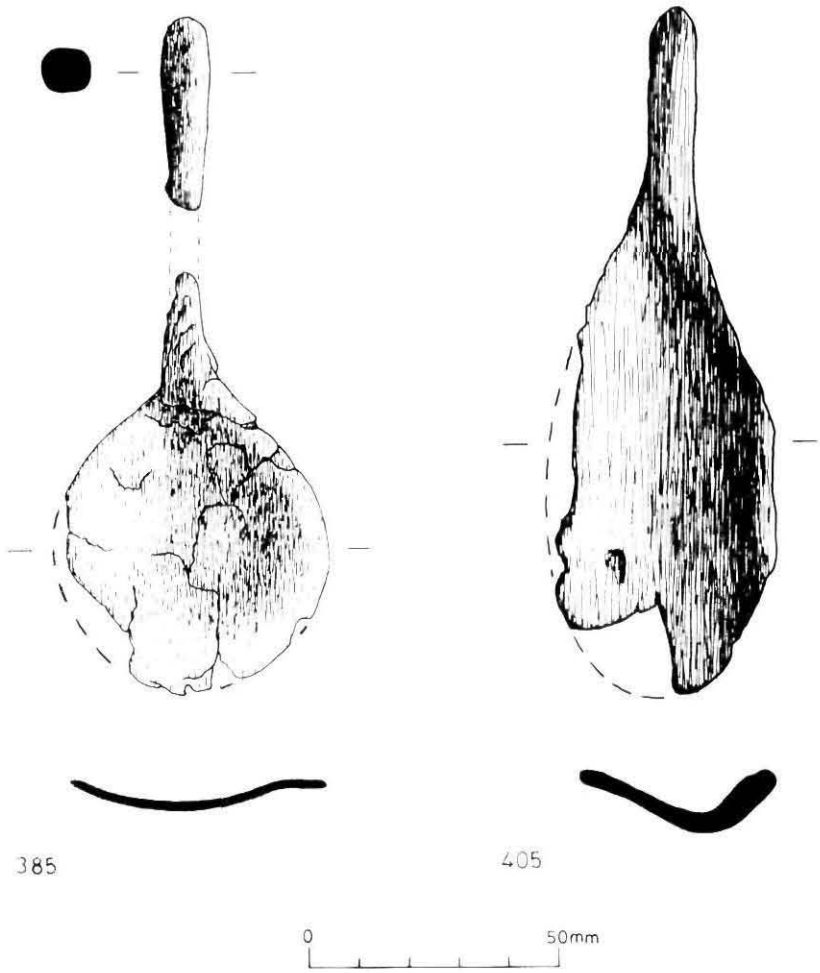
The soil conditions at the Biggings allowed organic materials such as wood, horn and textiles to be well preserved, but little bone or metal has survived. Even with such excellent wood preservation, it is clear from the entire assemblage that there is definitely no evidence at any period for lathe-turned vessels or their manufacture. This is not surprising as the craft of turning vessels requires plentiful supplies of renewable unseasoned wood of species such as alder, ash, field maple or fruitwoods, of between 100 and 300 mm diameter (cf Morris 1982; 1984, Ch 8 and Morris 1985 for a history of lathe-turning and techniques in Britain; cf especially Morris forthcoming a, for a detailed study of lathe-turning in Viking period York, contemporary with the earlier settlement at the Biggings).

There are plenty of examples of wooden tools and stave-built vessels at the Biggings, however, most of which must either have been made from imported seasoned raw material, or imported as finished products, probably from Norway or the Scottish mainland (**6.3** above). Some consumable commodities may have been imported in stave-built containers, then the empty containers re-used either complete, or stripped down for raw material. Stave-built vessels need to be made of seasoned timber, and large staves could have provided flat boards of seasoned oak or pine to be made into smaller vessels or other objects.

SPOONS AND SPATULAE

(illus 100)

Wooden spoons would have been the main Norse and medieval eating and cooking utensil after the knife. Since soil conditions at the Biggings site were not particularly suitable for preserving iron, it is not surprising that few knives have survived, however common a find they may have been on most medieval sites in Britain. The two spoons SF 405 and SF 385 (illus 100), both from Phase 4, however, are a welcome addition to a growing body of wooden utensils which have only been found in quantity in recent excavations.



illus 100
Wooden spoons SF 385 (*Pinus cf sylvestris*) and SF 405 (*Pinus sylvestris*).

Wooden spoons had a greater variety of bowl shapes than metal ones, and although it is possible to classify medieval non-ferrous spoons according to their bowl shape (eg. Ward Perkins 1940, fig 41a-c), this is inappropriate for wooden ones since each was individually carved, not cast in a predesigned mould. Wooden spoons from British sites show no apparent chronological variation in their bowl shapes. The oval bowl, SF 405, from Papa Stour is similar to those of a 12th-/13th-century spoon from Dublin (O'Brien 1978, 61), 11th- and 13th-century spoons from Lund, Sweden (Blomqvist & Mårtensson 1963, fig 153; Nilsson 1976b, fig 185), a 14th-century example from Kings Lynn (Clarke & Carter 1977, fig 171,1), and two 13th-century finds from Cork, Ireland (Hurley 1982, fig 16.2, 1 & 3). The round bowl of SF 385 is rarer and is reminiscent of medieval bronze, latten and pewter spoons (Ward Perkins 1940, fig 41b).

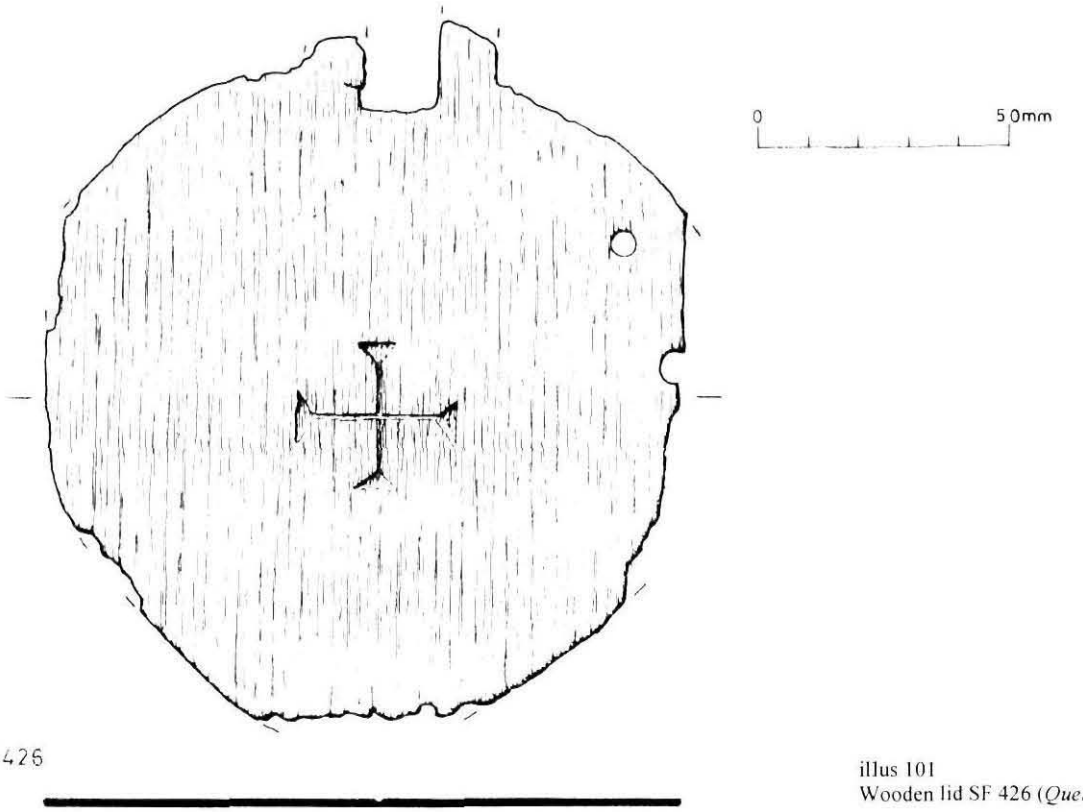
Like recent English and Welsh spoon carvers, the makers of the two Papa Stour spoons seem to have chosen split sections of roundwood of suitable length, used an axe to cut an appropriately-shaped roughout spoon, then completed the final bowl-and-handle shaping with knives, and hollowed out the bowl with gouges, chisels or perhaps a hollowing knife. The oval spoon SF 405 could have been a home-made item, but SF 385 required a greater degree of skill and craftsmanship to make. Some finely carved spoons from York, Dublin and Haithabu were almost certainly made by specialist craftsmen (Morris forthcoming a) and 12 spoons from Trondheim, Norway were also the products of specialist carvers (Fuglesang 1981, 23-5, pls 5-11). SF 405 is probably an imported finished product.

Spoons such as SF 405 and SF 385 had straight, thin handles with wider hollowed bowls. SF 383 (Phase 3), SF 1577 and SF 399 (both Phase 4), on the other hand, are termed spatulae here since each has a flat cross-section without genuine hollowing of the blade to form a bowl. The distinction between the two can often become blurred, especially when items were home-made and intended for similar tasks in the kitchen, such as stirring, scooping and spreading. Spatulae can vary considerably in size and shape, and were presumably intended for different household tasks in cooking and food preparation. Spatulae of various species, sizes and dates have been found at sites such as York (Morris forthcoming a), Newbury, London, and Norton Priory, Runcorn (Morris 1984, fig 69, M44, M42 & M45).

WOODEN LID

(illus 101)

SF 426 (Phase 6, the Gørl) is the hinged lid of a type of stave-built container which looked like a tankard but was made in various sizes. It was often called a *tigg* and was common in northern Europe from the 16th century onwards but may occur earlier. Many examples of tankard-like tiggs have been excavated from the wreck of Henry VIII's ship *Mary Rose* which sank in 1545, and an illustration of a complete container of this kind can be seen in Amman & Sachs' *Ständebuch* (Book of Trades) first published in 1568 (Rifkin 1973, 51). A smaller but thicker lid similar to SF 426 was found on the Queen Anne House site in Shrewsbury (Morris forthcoming b), probably dating from the 15th/16th century. This had one surviving lug perforated by a peg on which it had hinged, fastened to an upstanding stave on the vessel. The



illus 101
Wooden lid SF 426 (*Quercus*)

lugs on SF 426 are very fragmentary, and the object itself was very flattened and compressed when found. Although it has the same leaf-shaped outline as the lid from Shrewsbury, it comes from a bigger vessel, perhaps a milk container, whereas the Shrewsbury tigg was nearer the size of a large tankard.

Similar lids can be found on other northern European stave-built vessels, such as Icelandic porringers and Norwegian butter moulds (eg Pinto 1949, 104, pl 128 & 108, pls 136-7), but the latter were often more elaborately decorated.

Of great interest is the cross incised in the upper surface of SF 426. Although it could possibly be an owner's or maker's mark as are sometimes found on the base of lathe-turned bowls, in this case it is much more likely to be a symbolic mark or device to protect the contents of the vessel and to keep away the evil eye. There is a considerable body of evidence from throughout Europe which supports the idea that the cross symbol has a long history as a protective device to ward off evil and to bring good luck (Brears 1989, 26). There are two striking parallels for the Papa Stour symbol: a cross on a late 10th-/11th-century lid from Exeter (Allan & Morris 1984, fig 174, 16) which had incised lines across the ends of the arms instead of triangles, and was incised into a bucket, pail, tub or keg lid along with a pentacle; and a deeply incised cross with expanded triangular ends on a medieval lid fragment from Oslo (Weber 1990, fig 47). Both lids had one or two opposing notches in their circumferences to fit around raised staves on their vessel.

Other examples of wooden containers with cross symbols on their lids are a medieval stave-built vessel head from York which has an elaborate saltire-like cross with the ends of its four arms cut by semi-circles made with a compass (CA Morris forthcoming a 1981-2 22, SF 347), a rectangular box lid and a 10th-century circular potlid from York (*ibid*, 1976-81.7, SF 2486 & SF 13664), and a late 13th century churn lid from Southampton (Platt & Coleman-Smith 1975, fig 227, 1619). The symbolic protection could have been thought particularly necessary if the contents were, for example, a dairy product such as milk or cream which could easily spoil. The Papa Stour, Exeter and Southampton vessels may all have been used with dairy products.

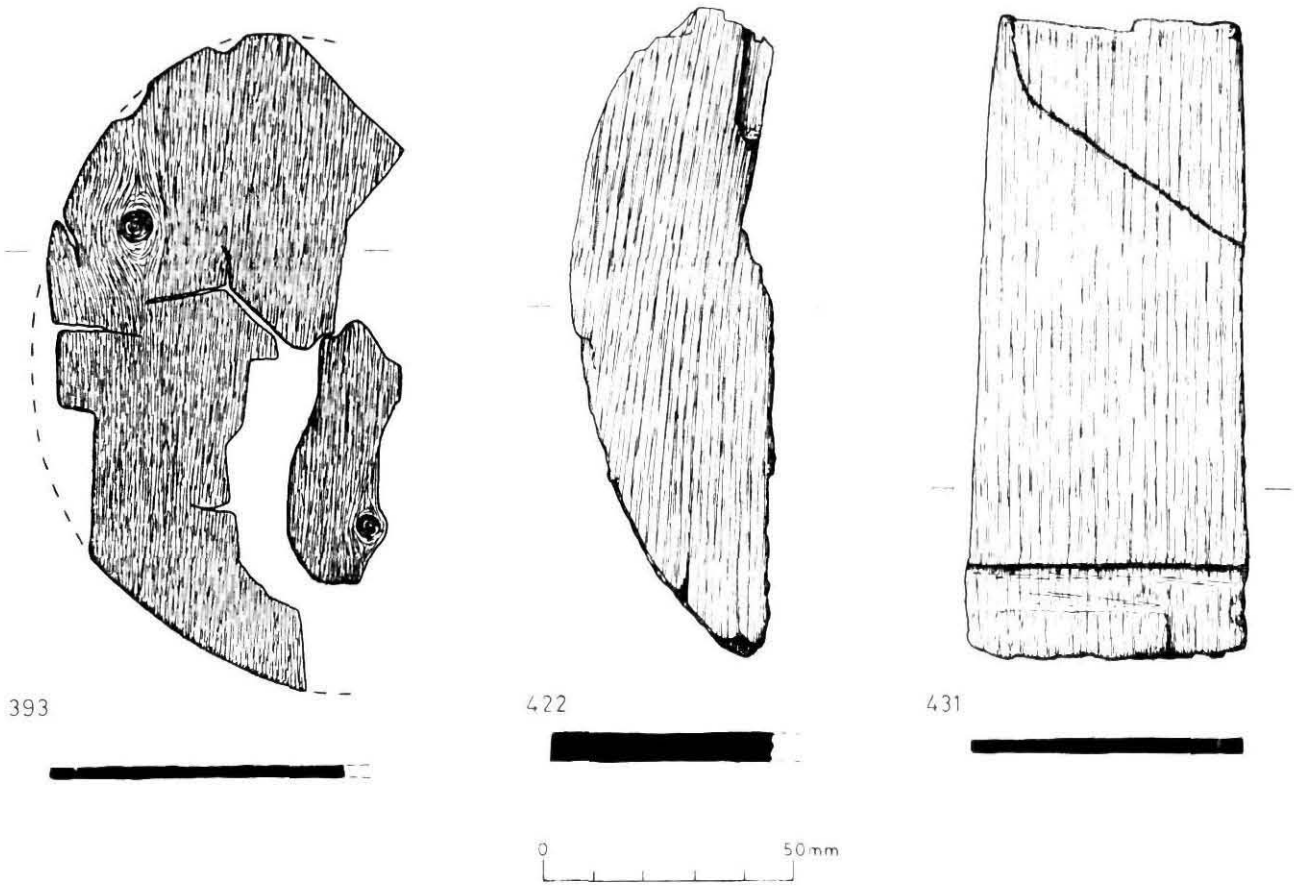
STAVE-BUILT VESSELS

There were no amateur coopers (Kilby 1971, 15). Coopering, or the manufacture of stave-built vessels, is a skill which is acquired gradually by experience, and a craft which has to be taught and learned. As such, all the stave-built vessel fragments found on Papa Stour were either made by a cooper on the island from raw material imported as timber or larger staves to be cut down, or they were imported as finished products from Scandinavia or mainland Britain. All the pieces found at the Biggings were only discarded components of vessels. No complete vessels were found *in situ*. They were probably from open-topped buckets, pails, tubs etc, and different sizes of casks.

SF 431 (Phase 5) (illus 102) includes an almost complete stave from a small open-topped bucket or smaller vessel, perhaps even the sort of vessel which had a lid similar to SF 426 (Phase 6). SF 1582 (Phase 4-5) is a stave of a larger open-topped vessel such as a large bucket or tub. Similar staves from open-topped buckets and tubs have been found at many sites in northern Europe, including 9th-/11th-century Haithabu (Elsner 1990, 25, fig 4), 9th-/11th-century York, ranging from vessels as small as 132mm high (as Papa Stour SF 431) to some nearly 600mm high (Morris forthcoming a), Viking period Dublin (National Museum 1973, pl 12), 12th-to 16th-century Tønsberg, Norway (Marstrander & Sjøvold 1979, 110-111), medieval Oslo (Weber 1990, figs 45-6 & 50), 13th-century Lund, Sweden (Mårtensson & Wahlöö 1970, fig 73) and medieval Novgorod (Kolchin 1989, pls 29-32), to name but a few.

Bases of buckets, or heads of casks (although it is impossible to tell which) are represented by SF 393 (Phase 3) (col illus 13), SF 422 Phase 6 (illus 101), SF 423 (Phase 5) and SF 348a Phase 7. SF 437 (Phase 4) is probably a bung or spigot from a cask's bunghole or venthole.

More characteristic pieces of large caskheads are SF 1589 and SF 1579 (both Phase 4). The latter could have functioned either as a caskhead or a removable stave-built cask lid with a batten. Similar battened heads have been found in 10th-century Winchester (Keene 1990, fig 298, 3428), 10th-century York (Morris forthcoming a; SF 13201 & SF 7761), 11th century Dublin (Morris 1984, fig 111, C271 iii) and 13th-century Exeter (Allan & Morris 1984, fig 178, 72). These battens



illus 102
Bucket base/cask head SF 393 (*Pinus cf sylvestris*), SF 422 (unidentified) and stave SF 431 (*Pinus sylvestris*).

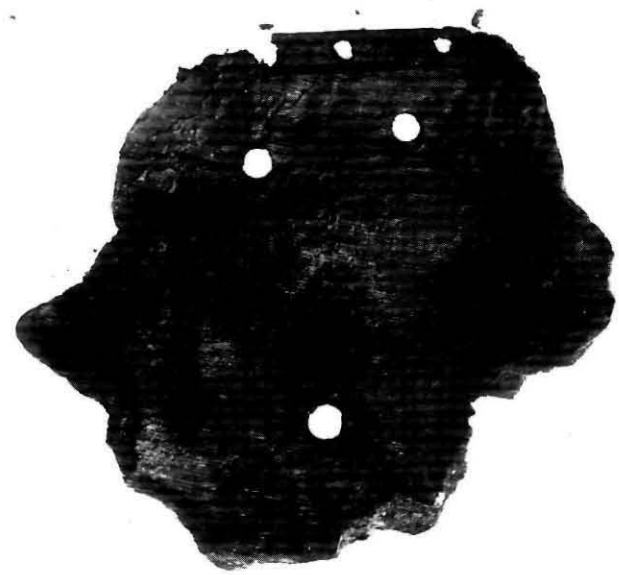
are not repairs and medieval illustrations often show them *in situ* on casks in use. An English medieval illustration of *c* 1325-30 in the *Holkham Bible Picture Book* shows two casks with two-piece caskheads across which are fixed two rectangular battens (BL Add MS 47682 fo 9). These casks have ventholes and spigots (such as SF 437) in their heads, and bungholes in side staves. Most illustrations of casks with battens seem to be wine casks resting horizontally. It is possible that the battens were originally used as strengthening devices to reinforce heads on casks which were often used in this position. Battened caskheads removed whole from the cask could be reused as lids.

Staves from indeterminate vessels are represented by SF 1575 (Phase 5), SF 391 (Phase 6) and SF 1581 (Phase 4-5). SF 1581 and SF 1582 (Phase 4-5) may have ended their lives as floor planks.

BARK VESSEL

(illus 103)

These fragments of bark SF 1469 Phase 3, may be part of the walls of a lath-walled box, a type of container which had no metal or other fittings and was constructed entirely of wood and/or bark. In some northern European countries they are often referred to as chip boxes. This type of container has been found on sites dating back to the Iron Age, for example at Hallstatt (Kromer 1960, taf 2). Examples found in Viking period levels in York, and other sites in England, Ireland and northern Europe are made from several pieces, each often a different form or even species of wood, due to the individual properties of each.



illus 103
Bark vessel SF 1469; reproduced at approx. 2/1.

Box bases are often flat circular or oval pieces of solid wood which form a rigid support for the walls. No such piece survives with the Papa Stour fragments SF 1469, but it may originally have been a radially split piece of a species such as oak, as was found on the 9th-/10th-century box from Haithabu (Schietzel 1970, Abb 6.1), an almost identical 9th-/10th-century box from York (Hall 1984, 93, fig 100; Morris forthcoming a), and other single finds, for example from Oslo, Norway (Weber 1990, fig 38).

Box walls can be various heights and are usually formed of a single thin lath of wood or a strip of bark. The species used must be strong, pliable and flexible. The York and Haithabu boxes already mentioned had ash lath walls, a 14th-century box from Kings Lynn had birch lath walls (Clarke & Carter 1977, fig 172, 60A-C), a 13th-century box from Lydford, Devon had willow lath walls (Saunders 1980, fig 27, 1) and 12th- and 14th-century boxes from Novgorod, Russia had birch-bark walls which were used in the same way as the laths (Kolchin 1968, fig 41, 1 &2; 1989, pls 70-73). The Papa Stour bark walls were probably used in a similar way to those from Novgorod, although unlike the latter, they were undecorated. Sometimes walls were decorated with incised designs, for example those from York, Haithabu and Novgorod. Other decorated walls were found in the Oseberg ship burial and in Oslo (Weber 1990, fig 401 a-b).

The laths or bark were bent (perhaps around a block) to form a circle or oval shape, and the overlapping ends pegged or sewn together. The rebate on the Papa Stour bark fragments shows that the ends of the bark were probably overlapped at this point, and pegged together by wooden pegs, two of which survive. The walls of the York, Haithabu and Oslo boxes were stitched together. It is not certain what the larger holes through the Papa Stour bark walls were for, although they were purposefully made and countersunk, suggesting they were originally pegged in some way. (Fragments of the walls of a birch-bark box with similar holes are displayed in Stavanger Museum (S2584n)).

7.5.2 TOOLS AND IMPLEMENTS

TEXTILE TOOL

SF 1588b from Phase 4 could be a pinbeater, threadpicker or similar textile tool. Its rough upper end shows signs of it having been held in the hand, whilst the smooth almost polished pointed end would be ideal for work with threads on a loom. Such tools are illustrated in use in 18th-century drawings of Icelandic warp-weighted looms (Hoffman 1964, 126). They were used for pushing up the weft threads and rearranging displaced warp threads. A smooth, polished working end is essential. Anglo-Saxon and Viking period pinbeaters are common finds, but they are usually made of bone, for example from Southampton (Addyman & Hill 1969, 76, pl 7b), Birka (Graham-Campbell 1980, pl 79) and Århus, Denmark (Andersen *et al* 1971, III,CEC). Wooden examples were found in Haithabu (Schietzel 1970, fig 8.4; Graham-Campbell 1980, pl 78).

ROPEMAKING TOOL (SF 1066)

(illus 104 and col illus 21)

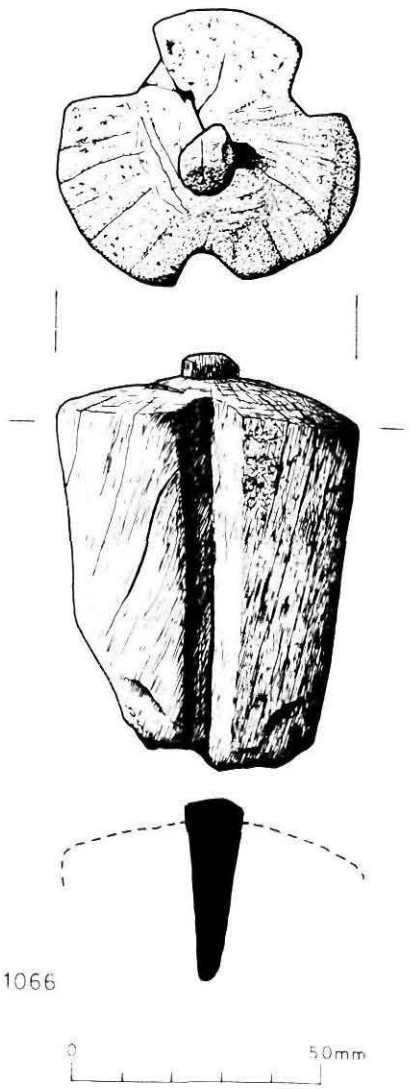
SF 1066 from Phase 4 (illus 104), is a ropemaker's 'top' or strand-layer repaired with balsa (**6.3.3** above). A 'top' is a conical wooden block, scored with three or more grooves (such as SF 1066), used in the rope-making process to ensure that the strands being made into a rope were laid evenly together, and that the rope did not become a knotted tangle. The number of grooves is related to the number of strands being laid–three in the case of SF 1066. At the Biggings it could have been used to make ropes from straw, hay, heather, rushes or various grasses. It is the only example of a strand-layer which has been found on any archaeological site in the British Isles. Rope-making in the Northern Isles using various species of natural fibres is discussed by Fenton (1978, 264-9, figs 113, 119). Various names have been given to the conical strand-layer used in the process, including *snott* in Shetland and *snudder* in Orkney, both of which are related to the Norwegian dialectical *snud*, twisting, the Swedish dialectical *snod*, a twist in a thread and Old Norse *snudr*, a turn (*ibid*, 269).

DISCUSSION OF THE ROPEMAKING TOOL SF 1066

Christopher Harris

There is no doubt that this object is a tool used in the ropemaking process and in the English language literature on ropemaking it is usually termed a 'top' (see references in Harris 1986).

The top is used towards the end of the ropemaking process, when many fibres have already been spun into long yarns and these in turn are twisted into thicker strands which are laid to make the rope. Three or four strands are twisted or laid together using a combination of tools,



illus 104
Ropemaker's top/strand layer SF 1066 (*Betula*).

one of which is the top. Usually three strands are attached to a single hook at one end of the narrow area used for ropemaking -either an open or covered-in ropewalk- while the other ends of the three strands are each attached to separate hooks at the other end of the walk. The top is placed between the strands at the one-hook end of the walk, the strands resting in the grooves of the top. When this hook or cranking-iron is turned, the top ensures that the strands are given an even lay, ie each strand is kept equidistant from the central axis of the rope being formed behind the top. The hooks at either end of the walk are turned in opposite directions so that while the twist is taken out by the single hook, it is put back by the turning of the three hooks at the other end. If the process is successful an equilibrium is reached and the final rope will not entangle itself when released from the hooks.

The ropemaking process uses simply-made tools in a skilful and complicated craft. The ropemaker's top is one of the tools which ensures a good final product. The process using the top needs no less than three people, one at either end of the walk to turn the hooks or cranks, and one to hold the top as it is pushed towards the three hooks by the single rope which is formed behind the pointed or narrow end of the conical top (see fig 7 in Fenton 1961, of a 'tuimikin' from Shetland).

Although the top is pushed along by the twisting behind, the person holding the rope can brake the process by holding it back slightly. In some literature on ropemaking there has been a misunderstanding about the top. It is said that the roper's assistant pulls the top up the walk towards the three hooks, when in actual fact the rope can be pushed quite rapidly by the force of the twisting behind. If the top moves too quickly the rope being laid will be too slack. By holding back the top, the amount of twist is increased in the rope formed behind the top. In the larger commercial ropewalks, from the 18th century onwards, where the thick ropes needed large tops, sometimes supported on their own sledges, a braking system had to be developed, usually applied to the runners or wheels. Another braking system was to wind shorter pieces of rope round the top and rope being formed. These were then wound round a so-called *woolley* stick which was used rather like a tourniquet. As well as acting as a brake, these pieces of rope also polished the finished rope behind the top. Although these braking processes belong to the commercial ropemaking of modern times, the polishers do seem to have been used in smaller country roperies and on some farms. Usually there are handles or lugs on either side of the top and the rope-breaks are wound round these. The handles were also used to hold the top. However, no such handles or lugs have been noticed on the smaller tops such as the one from Papa Stour or the one from the excavations in Tønsberg, Norway.

The top is one of the ropemaker's tools which is so functionally complete that it may not have developed typologically much in form since the middle ages, or even earlier. The top found during excavations in Tønsberg, and dated between AD 1250 and *c* AD 1400, would not have looked out of place on a Norwegian farm in the late 19th century (Lindh 1992, 193, 194). Indeed many of the tops which are illustrated in the literature on ropemaking in the 19th century are strikingly similar to SF 1066 from Papa Stour.

There are very few known illustrations of ropemaking from the middle ages and none of them show a top. The earliest illustrations of laying a rope are from the very late 17th century, and come from the Netherlands; but even here the top is not shown. There are a number of seals from ropemakers' guilds from the 16th century and especially the 17th and 18th centuries. Only on the seal from the guild in Bergen, Norway (1754) is there anything which could be interpreted as a top. The earliest pictorial description of a top is from the Faeroe Islands, and is illustrated in JC Svabo's *Foroyaferdin 1781-1782* (Torshavn 1924). The ropemaking tools are said to be 'very simple and very old' in 1781. The encyclopaedias which began to appear from the last two decades of the 18th century, all show the fully developed set of ropemaker's tools, including the top.

In spite of the fact that there are no illustrations of tops before the 18th century, there is no doubt that the tool must have been in widespread use in the middle ages in Europe. Ropers making hempen rope in Bridport, Dorset, from the 13th century and possibly earlier, would have used a top, and ropers in the major Hanseatic cities would have been using tops to produce hempen ropes for their trading ships.

It has to be said that the paucity of information about the tops is not special for ropemaking tools. There are many crafts where the tools are not to be seen on illustrations and where they are first illustrated in the 18th-century books on crafts and manufacturing industries. However the lack of concrete information about these tools make the finds from Papa Stour and Tønsberg immensely important. SF 1066 is the only example of a ropemaker's top which has been found on any archaeological site in the British Isles. A number of conical wooden objects have been found in the major excavations in Trondheim, but as yet none of them have been identified as ropers' tops.

ROPEMAKERS' TOOLS, MATERIALS AND USAGE

The tops known from the post-18th century have almost always been of hardwood when used in commercial roperies. The top suffered a great amount of friction as it was pushed along and the grooves would easily become worn if a hard fibre was being used. It does not appear that the wood used for the Tønsberg top has been identified other than as deciduous (?). None of the other tops from Norwegian museums have been studied in detail and there is no information on the types of wood used.

A top the size of the one found at the Biggings could presumably be replaced easily once worn, as long as the raw materials were available, and it would not necessarily require hardwood for the tool. The Papa top has been worn and repaired, perhaps made necessary by the shortage of wood, whereas it would have been replaced elsewhere. The use of balsawood in the repair remains an enigma. Another enigma is the perpendicular hole with an oak plug in the top, for which there is no apparent use.

This top would have been used with a variety of fibres, especially for the domestic ropemaking associated with farm production. A variety of fibres from plants (and trees in other areas) was used, as well as hair from horses and other animals. The commercial roperies used hemp without exception, until new and more exotic fibres were introduced in the second half of the 19th century (Harris 1986). From the 17th century, hemp was undoubtedly the best fibre to use for ropes used at sea, and the bulk of the hemp was imported from the Baltic countries.

There is a substantial amount of literature on non-commercial ropemaking in Britain and in the Nordic countries, using wood fibres such as bast; and straw, heather and reeds. At the Biggings the top could have been used to make ropes from straw, hay, heather, rushes, various grasses and animal hair. Rope-making in the Northern Isles using various species of natural fibres is discussed by Fenton (1978, 264-9, figs 113, 119). Reference is also made to flat strand-layers or strand-separators as well as the conical tops. In the Nordic countries, it appears that flat strand-separators were used predominantly for fibres other than hemp, but there were exceptions. For the time being we do not know what raw materials were used with the ropemaking top from Papa Stour.

The ropes made using a top could have a number of uses and it is not possible from the tools to say exactly what products were made. It has been suggested that the Tønsberg top may have been used for making thin ropes or lines called *telner* ie the upper and lower lines on fishing nets. But it could equally have been used for producing ropes necessary for the construction of churches and other buildings. Ropes were needed in agriculture as well as for fishing and shipbuilding.

SUMMARY

The ropemaker's top from Papa Stour is very special. It is probably the second oldest example of this tool known in Europe, and the only one found on an excavation in the British Isles. In spite of its relatively simple appearance, it makes a valuable contribution to the history of the ropemakers' craft.

It is a tool used in the laying of the strands, towards the end of the ropemaking process, and it would have required at least three people to make a rope using this as one of the tools. This top would have produced a three-strand rope or line, but it is not presently possible to say for what purpose the rope would have been used. The repair with balsa wood and the oak plug are just two enigmas which have yet to be solved.

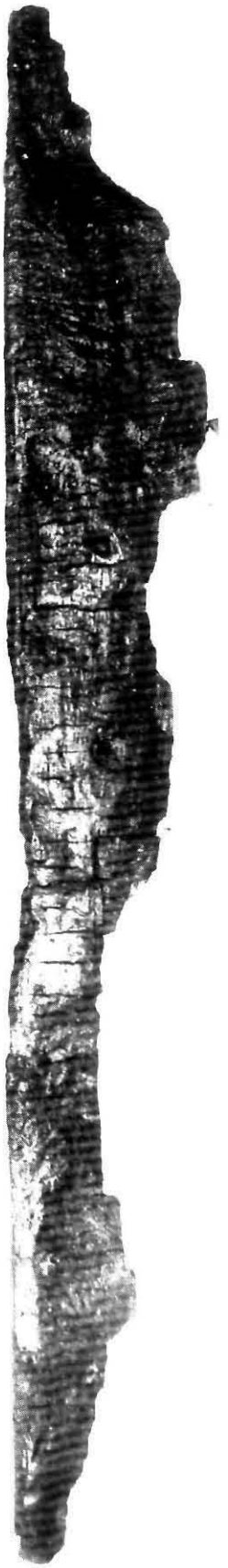
7.5.3 WOODWORKING AND WOODWORKING TOOLS

WEDGES AND PLANKS

Axes and wedges for felling, hewing and splitting were used by all woodworking craftsmen to prepare suitable pieces of wood for use in both the building trades and the crafts which made small domestic objects. The axe has always been the woodmaker's basic tool, and a master craftsman could fell a tree, split sections of roundwood, roughly shape pieces of timber and smooth planks by using only an axe (although felling and shaping were usually done with different types of axe). Although no axes were found at the Biggings, there is evidence of their use in the toolmarks found on various floor-planks, and especially on objects such as SF 436 and SF 1586 (offcuts/miscellaneous, both Phase 4).

Wood, especially unseasoned oak but also pine, can be split easily along the principal planes of weakness which follow the medullary rays, ie radial splitting (Edlin 1949, pls 91-2; Darrah 1982, 220), or by splitting tangentially across the grain. Splits are normally started by driving seasoned oak wedges into the side of the trunk near one end and continued by driving in wedges further along (*ibid*, 221). In radial splitting, half-sections are then split into quarter-sections, quarters into eighths etc, using wedges. The wedge SF 438 from Phase 4 (illus 105), could have been used for small-scale splitting of roundwood into sections suitable for staves or boards. Thirteen wooden and four iron

illus 105
Wedge SF 438 (*Pinus sylvestris*); reproduced at 2/1.



illus 106
Plank SF 1583 (*Quercus*); reproduced at 1/5.

wedges were found in York (Morris forthcoming a), whilst others to compare with that from the Biggings come from 6th-/9th-century layers at Ballinderry Crannog 2, Ireland (Hencken 1942, fig 26, W9), from a 9th-century well at North Elmham, Norfolk (Wade-Martins 1980, fig 108,19-20), and 11th-century deposit at New Fresh Wharf, London (Pritchard & Morris 1991, fig 3, 130, 384) and at Århus in Denmark (Andersen *et al* 1971, 155, EVQ).

The unstratified plank SF 1583 (illus 106) shows the characteristic wedge-shaped cross-section achieved when radially splitting planks. SF 1584 from Phase 4 and SF 1587 (unstratified) are other good examples of planks split radially; SF 1589 and SF 1579 also from Phase 4, are examples of staves made from boards split tangentially.

AUGERS

Augers for making circular holes in wood had iron spoon- or twist-bits to fit in a transverse handle, a brace or a breast stock. The unusual survival of SF 1617 (Phase 4) (illus 114 below; see also section **7.7**) in an almost complete condition give us a rare example of an iron twist-bit in a transverse handle. Spoon-bits are the most commonly found type of bit; twist-bits are rare. Two twist-bits from York (Morris forthcoming a; SF 2267 & SF 1561, one Viking period, the other medieval), a 13th-century twist-bit with a barrel-shaped lathe-turned transverse handle from Dublin (O'Riordan 1971, pl X, B) and SF 1617 from the Biggings are not true twist-bits which remove shavings from the cutting point, but gimlets for making starting cuts for spoon-bits to enlarge into holes. Other Viking period twist-bits have been found in Norway (Rygh 1885, 417; Petersen 1951, fig 124).

PEGS AND TRENAILS

Wooden pegs are essential elements of timber technology where wooden planks, boards, blocks or beams need to be fastened together. Pegs were often used in large quantities as components of larger objects or structures, but are generally found singly or in small groups on archaeological sites, unassociated with the object or structure with which they were used, a fact which can be a problem when trying to identify a specific use. All the pegs found at the Biggings were headless (illus 107). Headless pegs were used for fastening planks and timbers and component pieces of smaller wooden objects. None of the Biggings pegs can be assigned a particular use. Similar ones (of various sizes) have been found at sites such as York (Morris forthcoming a), Oslo (Weber 1990, fig 61), Shackerley Mound, Shropshire where they were used in the construction of a wooden bridge (Morris 1987, fig 10, 1-4), in Hull (Watkin 1987, fig 124, 353), Beverley Eastgate (Morris & Evans 1992, fig 94, 632-4 & 636-8) and Beverley Lurk Lane (Foreman & Hall 1991, fig 124, 970 & 971A), where they survive in two oak joints.

STRUCTURAL COMPONENTS

All the floor planks examined from the Biggings were radially split from oak or pine roundwood. They could have been imported either as roundwood or split planks. Most of the planks are very worn and abraded from years of wear, but pieces in better condition such as SF 1583 (unstratified), suggest that the planks could have been originally 20-30mm thick or more.

The floor in the *stofa* in Phase 3 (fragments recorded but not recoverable are therefore not included in the catalogue) was constructed using flat floor planks laid parallel to each other across narrower floor joists set perpendicular to the planking (illus 108). The planks ran parallel to the possible benches on either side of the structure, whereas the joists ran perpendicular to them, originally stretching across the entire room space from one *moldbenk* to the other.

illus 107
Examples of wooden pegs found at the Biggings.

illus 108
Detail of the wooden floor, Phase 3; scale in 0.1m intervals; from W.

Excavated wooden floors in structures on mainland British and Irish sites are rare at any period. The best surviving example to compare with the planked floors from the Biggings site was found in a 10th-century Viking period sunken-featured building at Coppergate, York (Hall 1984, 72, pl 77). Here, floor planks were laid parallel to each other across more substantial floor joists set perpendicular to the planking above. The edges of the planks nearest the timber walls were cut to fit snugly around upstanding wall timbers. Parallel planking laid on perpendicular joists was also found in house VI on the PK banken site in Lund, Sweden (Nilsson 1976a, fig 32), and it was also a regular feature of medieval log-built houses in Novgorod (Koroshev & Sorokin 1992, 142.5, figs IV, 25-9). Floor planking has also been found in certain areas inside at least three 10th-/12th-century buildings in Dublin (eg Wallace 1992, pl Xb & figs 138-140). In these buildings, it was noticeable that the planking was placed in a restricted area just inside the door, and well away from the central hearths which were located further into the buildings between the side benches. This pattern can also be seen in the 11th-century house I in Lund, where floor planking was positioned just inside a side entrance of a longhouse (Nilsson 1976a, figs 21 & 23; see also illus 137 below).

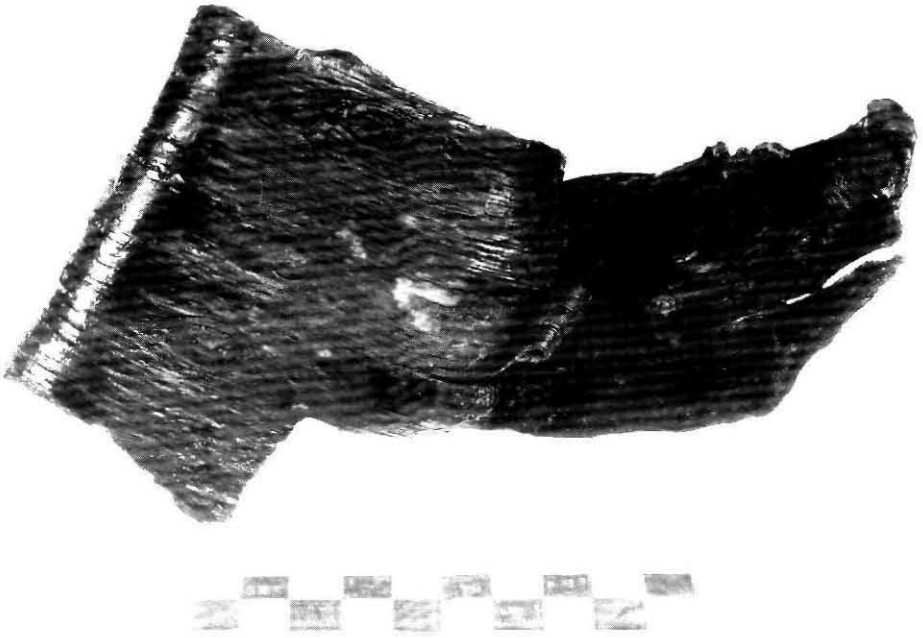
OFFCUTS AND MISCELLANEOUS FRAGMENTS

Offcuts such as SF 427 (Phase 4-5), worked and unworked roundwood such as SF 1586, SF 1593 (both Phase 4), SF 1594 (context unknown) and even bark fragments from the site suggests that woodworking at either a primary or secondary conversion stage (or both) was being carried out on or near the sites. Pegs and offcuts in this wood assemblage strongly suggest some aspects of timber construction was carried out on or near the site at some periods. The charring observed on pieces such as SF 436 (Phase 4) is to be expected when small fragments of wood have been lying around on a site where there are hearths, and where many woodworking waste products and worn out wooden objects which could not be reused ended up as fuel.

7.5.4 BIRCH-BARK ROLLS AND FRAGMENTS

Small fragments of birch bark (*Betula* sp.), larger sheets of birch bark and small strips of tightly-rolled birch bark have been found in most areas of the site dating to all periods (see table 16), although never in large quantities or in any particular concentration in one context. Birch timber may have been imported to Papa Stour from Norway (see **6.3** above). Some or all of the pieces found may be waste products of debarking birch timber in advance of converting it into useable pieces and working it into objects such as the rope top SF 1066. However, the bark of other species such as oak and pine, which were also widely used on the site over a long period of time to make small artefacts and structural work, does not occur in the same way. It is more likely that birch bark was collected (and possibly imported) for a number of particular uses.

Birch bark can be readily peeled from the tree in thin strips and used in various ways. In medieval Novgorod in Russia, wide strips of birch bark were used to make different sizes of round and rectangular containers with or without lids (Kolchin 1989, 75-6, pls 70-3) in a similar way to lath-walled boxes (see Biggings SF 1469 Phase 3), and also for documents where letters were made by pressing a hard pointed instrument into the soft fibre of the bark (Thompson 1967, 55-63, figs 55-66). Birch bark has also been used for insulation, roofing material and making canoes (Edlin 1949, 41 & 45). It is possible that some of the larger flatter sheets eg. SF 382 Phase 5, (illus 109), SF 134 (illus 44) and SF 1578, both Phase 4) could have been intended for roofing material.



illus 109
Birch-bark sheet
SF 382.

SF No	LAYER	PHASE	DESCRIPTION	ML(mm)	MW	MT
37	M7	-	3 bark rolls	-	25	-
62	E66	7	bark	45	30	-
65	E68	4	bark	45	15	-
71	E66	7	bark	40	25	-
81	J71	5	bark	50	25	-
102	L16	6	bark	45	25	-
113	K10(8)	5	bark	45	40	-
122	J24	3	2 bark rolls	35	18	-
				45	22	-
123	E40	4	bark	80	33	-
125	E40	4	bark	55	15	-
126	K7	7	bark	-	-	-
129	H12	4	bark	-	-	-
130	E?	9	bark	90	65	-
131	K34(17)	4	bark	17	17	-
133	E78	4	bark roll	85	70	-
134	E78	4	bark, large piece two edges show deliberate cuts at right angles	110	80	-
135	E	?		64	27	-
137	E66	7		40	30	-
138	J81	4-5		62	40	-
139	E	?		34	20	-
140	E71	4		58	25	-
142	K72(44)	4		45	21	-
				36	18	-
200	E21	6	roll	42	35	-
226	H9	4	piece	115	90	-
228	L4	6	bark	20	10	
229	K10(8)	5	bark	25	19	-
231	K7/10(8)	5	bark	22	10	-
233	K8	5	bark	180	11	
234	E30	6	bark	40	35	-
243	E44	4	piece	135	46	-
245	E44	4	bark	10	6	-
251	K8	5	bark	30	16	-
264	K7	7	bark	40	17	-
382	L32	5	roll/strip	310	100	6
406	E78	4	bark	-	-	-
452	H13	3	bark	-	-	-
1359	JL5/11	4-6	bark (ex SF 226)	30	15	-
1360	JL5	6	bark	40	20	-
1477	E4	6	large piece, unworked	190	140	-
1578	JL51	3	fragment of originally flat rectangular piece (reconstructed 150 x 92mm)	92	40	-

Table 16
Birch-bark rolls and fragments (*Betula* sp) from the Biggings.

However, three of the most probable uses for birch bark in the settlement at the Biggings were the same as for most of the birch-bark fragments and rolls found in York (Morris forthcoming a) ie either as a tanning material, for burning as a light source or for making glue. As late as the 19th century in Scotland, birch bark was harvested and used for tanning hides, sails, nets and cordage where the inner bark was whittled from the

wood and chopped up into little pieces to be sold to the tanner, and when dried and twisted into a rope, birch bark would also function as a candle (Edlin 1949, 45). Birch bark also contains a high proportion of pitch, and rolled pieces such as SF 122 Phase 3 (illus 45), would have burnt with a clear flame. If the pitch is extracted and prepared, it can be made into a resin-like glue (Taylor 1981, 47).

7.5.5 DISTRIBUTION OF WOODEN ARTEFACTS AND BIRCH-BARK REMAINS

Beverley Ballin Smith

(table 17)

PHASE 3

No wooden artefact survived before Phase 3, but a total of five came the Phase 3 *stofa* and a single one from the adjacent building (Trench E/EJ). The latter was the bark vessel, SF 1469. On the wooden floor of the *stofa* birch bark (SF 1578 and 122), a spatula (SF 383) and a stave-built vessel base or head (SF 393) were found. The latter was situated close to the sump/well (col illus 13), but was too small to have been its cover. In addition, there was a piece of birch bark (SF 452) from the possible destruction deposits (H13) of the cookhouse.

PHASE 4

Thirty-six artefacts of all types were recovered from this phase. From the destruction levels of the Phase 3 *stofa* came a spoon (SF 385) and a spatula (SF 399). The largest group of artefacts (12) came from pit JL55 dug into the Phase 3 *stofa*. It included a spatula (SF 1577), pieces of caskheads (SF 1579) and a stave (SF 1589), the ropemaker's top (SF 1066), a bodkin (SF 1588), three pegs (SF 1577 & SF 1588) as well as pieces of floor planking (SF 1584-85 & SF 1587) and miscellaneous wood (SF 1586 & SF 1593).

Another peg (SF 428) was found in separate pit dug into the remains of the Phase 3 *stofa*, pit L29.

The remaining artefacts are associated with the buildings on the western side of the site. From beneath the building in Trench K was a piece of pine (SF 436); birch bark (SF 142, SF 129, SF 131 & SF 226) was found on its floor and in surrounding peaty contexts. The latter may indicate survival of roof material from this building and earlier structures on this part of the site.

Several artefacts were found in the dwelling-house (Trench E/EJ) which replaced the Phase 3 *stofa*. The wedge (SF 438) was found just below its floor, and a peg (SF 123) and several pieces of birch bark (SF 123, SF 125, SF 133, SF 134, SF 243, SF 245, SF 406) on the floor. A single piece of birch bark (SF 65) was found in immediately overlying deposits, possibly from the roof of the building.

PHASE 5

In a pit (L32) on the eastern side of the site were pieces of stave-built vessels (SF 384 & SF 423) and a birch-bark roll (SF 382). In and on the paving of the eastern building were other staves (SF 531 & SF 1575), a peg (SF 398), fragments of planks (SF 1580) and a piece of birch bark (SF 81).

Other plank fragments (SF 394) were found just below the floor of the new dwelling-house (Trench K) as well as a peg (SF 430). Several birch-bark rolls (SF 113, SF 229, SF 231, SF 233, SF 251) were also found on the floor of this building.

PHASE 6 & 7

In the last building on the site, the Gørl, a wooden lid (SF 426), a fragment of stave-built vessel (SF 422) and birch-bark rolls were found. The distribution of other staves, pieces of wood and birch-bark suggest the disturbance of earlier levels as well as the use of wooden artefacts up to the present day.

PHASE	3	3-4	4	4-5	5	6	7	u/s	Total
Spoons	-	-	2	-	-	-	-	-	2
Spatulae	1	-	2	-	-	-	-	-	3
Box lid	-	-	-	-	-	1	-	-	1
Stave-built vessels and bung	1	-	4	2	6	4	1	1	19
Bark vessel	1	-	-	-	-	-	-	-	1
Bodkin and roper's 'top'	-	-	2	-	-	-	-	-	2
Wedge	-	-	1	-	-	-	-	-	1
Pegs and trenails	-	-	5	-	2	-	1	1	9
Planks	-	-	3	-	9	-	-	2	14
Offcuts and misc	-	-	3	1	-	-	-	1	5
Birch-bark rolls	4	-	14	2	7	6	5	6	44
Totals	7	-	36	5	24	11	7	11	101

Table 17
Wooden artefacts from the Biggings by phase.

7.6 TEXTILE, YARN AND FIBRE FROM THE BIGGINGS

Penelope Walton Rogers

The excavation at the Biggings yielded a number of torn fragments of textile, together with spun yarn and clumps of unprocessed animal fibre. Altogether there were 64 separately itemised finds of textile, representing over 200 fragments, with 30 examples of yarn and 47 of fibre, all of which are described in full in the archive catalogue. Unfortunately only a few of these finds came from the securely dated lower levels in the main area (trenches J/L/P). Most of the remainder were from trenches (E/EJ/H/K) which had seen considerable disturbance and, to judge from the pottery evidence, these later finds may belong anywhere in the late medieval, post-medieval or early modern periods. Detailed analytical work, in the form of dye, fibre and fleece-type identification, was therefore concentrated on the more firmly dated earlier pieces from trenches J/L/P, together with a few selected items from the later material.

Most of the woven fragments are coarse tweed-like fabrics, typical of peasant clothing over a long period of time. Although the farmstead was for a time the property of a Norwegian duke and the residence of his bailiff (Crawford 1985), there is nothing in the collection to suggest an aristocratic or wealthy owner. There is no silk until the modern period and the small amount of patterning in the woven pieces is based on natural fleece colours; dyed textiles are rare. Knitted goods are well represented in the upper levels of the site, but, again, these are plain fabrics, with none of the fancy stitches for which Shetland knitting is nowadays famous. The general flavour of the collection is of simple workaday fabrics without luxury or ornament.

Copies of the catalogue of textiles (archive table 1) and table of fleece types (archive table 2) can be obtained from Textile Research Associates, 8 Bootham Terrace, York YO30 7DH.

7.6.1 EARLY FINDS FROM THE *STOFA* - PHASES 1, 2 AND EARLY PHASE 3.

Three fragments of textile (SF 1623, SF 1624 and SF 1626), a bundle of yarn (SF 1628), a thick spun strand of wool (SF 1629), and some parts of a fleece (SF 1633), were found below the 12-/13th-century wooden floor of the *stofa*. A further textile (SF 1625), some yarn (SF 1627), and clumps of wool, cattle- and goat-hair (SF 1630-1632 and SF 1634), lay just above, or on the same level as the floor.

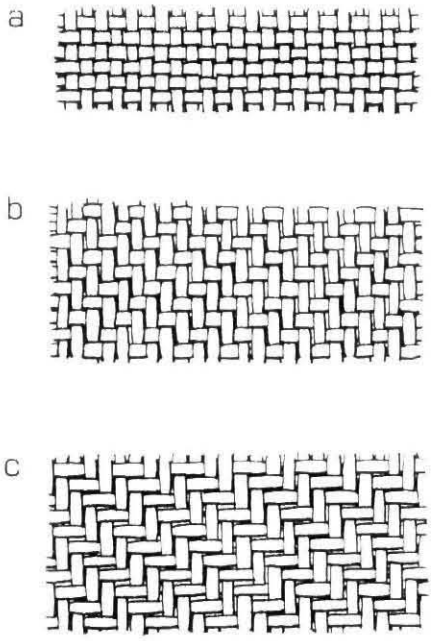
FIBRE

Some of the wool is still in the original locks of fibre, or 'staples', in which it would have come from the fleece. In one case (SF 1633), the staples are 75-80mm long and pointed and in another (SF 1634), a single staple is approximately 150mm long, pointed and wavy. All the finds from the Biggings are heavily stained by humic acids, but microscopy has shown that the earliest raw wool originally had a fine white underwool, with a percentage of coarser black or brown fibres (archive table 2). The coarser hairs protrude beyond the undercoat, to give a dark fringe to the wool. This is typical of the native sheep of the Northern Isles (discussed below in the Comment **7.6.4**) and the wool described here may well represent wool from the island's own sheep. The cattle and goat hair may also come from local livestock.

On farms where wool is immediately to hand, wisps of fibre are often used as a makeshift string. The long staple (SF 1634), has been tied in a loop with a tight triple knot; and the thread (SF 1629) seems to be two wool staples which have been teased out lengthways and then twisted together. Wool was evidently also being spun into weaving yarn in the farmstead. Spindle whorls for suspended spindle spinning were found scattered about the site and the fibre, SF 1631, is almost certainly spinner's waste. The wool has been partly processed and includes half-spun ends of yarn, typical of the oddments discarded by a hand-spinner.

TEXTILES

The raw wool and the spun yarn are almost identical with the wool and the yarn in the tabby-weave textile, a good quality medium-weight fabric (SF 1623) (illus 110a; archive table 2). Simple fabrics such as this may have been made at the farmstead, as weaving was still largely a domestic craft at this time and discarded weights from a warp-weighted loom were found as part of the stone lining of a Phase 4 pit in area J1.



illus 110
The weaves of the textiles from the Biggings: a) tabby; b) 2/1 twill; c) 2/2 twill

(Crawford 1987, 4). The piece of 2/1 twill (SF 1626), however, is made from entirely white wool (illus 110b; archive table 2). While native flocks could sometimes yield all-white wool, this textile would also fit comfortably in any 12th-/13th-century collection from mainland Britain. At this time urban weavers were producing clothing fabrics woven in 2/1 twill with a felted weft face (Crowfoot 1979; Walton 1989, 385-6 & unpublished data) and drawing on white wool similar to that in SF 1626 (Ryder 1983a, 473; Walton 1991, 320). Further examples of this fabric-type are included in the later material, discussed below.

The two 12th-/13th-century textiles woven in 2/2 twill (SF 1624 and SF 1625) are heavy fabrics with a smooth warp yarn made from a Hairy type of wool (illus 111; archive table 2) and a softer weft yarn which has felted in places. SF 1624 has a dark grey warp and a flecked grey/white weft and SF 1625 has a pale grey warp and a white weft, the use of the different colours emphasising the diagonal line of the twill weave (illus 110c). Fabrics such as these were current in the Nordic world from the 10th century onwards, fragments being recorded as far apart as the Norse settlement at Narsaq, Greenland (Walton Rogers 1993) and Anglo-Scandinavian levels of Coppergate, York (Walton 1989, 324). All examples in which the wool has been studied have proved to have a Hairy wool in the warp, which is often darker than the weft. This may have been achieved by using wool from a coarser, darker fleece for the warp, or, perhaps, by combing the wool intended for the warp in order to remove some of the fine white underwool; the difference between warp and weft wool is too great to be explained by summer- and winter-grown fleeces (Schjolberg 1992, 153). These 2/2 twills are almost certainly examples of the fabric known as *wadmal* (discussed further below).

7.6.2 THE LATER MATERIAL - LATER PHASE 3, PHASES 4, 5, 6 & 7.

The large collection of later material consists of wool and hair textiles, 16 woven in tabby, 24 in 2/2 twill, five in 2/1 twill and five knitted, together with 24 examples of cords and yarn and 41 of raw fibre. As already described, few can be given any firm date from the archaeological evidence, although some of the textiles themselves can help with dating. Knitting, for example, was a relatively late arrival in the Shetlands and can be used to give a post-16th-century date to any woven textile found in close association.

FIBRE

To the naked eye, most of the clumps of raw fibre from later levels appear similar to those of the 12th/13th century. Three representative samples from JL51 (SF 1719-1721) were sent for specialist examination by HM Appleyard and did indeed prove to be cattle hair and sheep's wool of the same sort as in the earlier group. A fourth, unusually short-fibred, specimen was also sent for study and proved to be fur, possibly from stoat.

The winter coat of the stoat is better known as ermine, a fur used in the medieval period as a garment trimming. The example from the Biggings was found in close association with a heavily felted twill (SF 1676) and may represent a fur lining or edging for the fabric. The function of the other raw fibre is less clear. Much of it was loose fibre, but some of it had been worked into spongy oval pads, eg SF 1719 and SF 1721, SF 722 and SF 1730. Similar pads of fibre have been found as caulking in boat timbers (Walton 1988, 78) and may also have been used to block holes in drafty timber buildings. Other pads of fibre have been recovered from cess-pits in Anglo-Scandinavian and medieval York, where they are assumed to have been used as latrine wipes (Walton 1989, 311). Significantly, some of the pads of fibre from the Biggings were recovered from a Phase 4 pit in Trench JL, tentatively identified by the archaeologist as a latrine.

The intact wool staples (SF 1703, SF 1712 and SF 1721) are pointed and 90-120mm long. As before, all the raw wool, whether in staples or otherwise, includes significant numbers of naturally coloured fibres. The pigment is largely concentrated in the coarser fibres, except in SF 1721, which is entirely brown or black. The underwool of the dark-woolled fleece is coarser than in the other samples, but even so it falls in the same category of 'fleece type' as the other raw wools from the site (archive table 2). The evidence from the Biggings suggests that the local fleeces were all much the same in type, but that their variety lay in the range of colours.

WOOL 2/2 TWILL

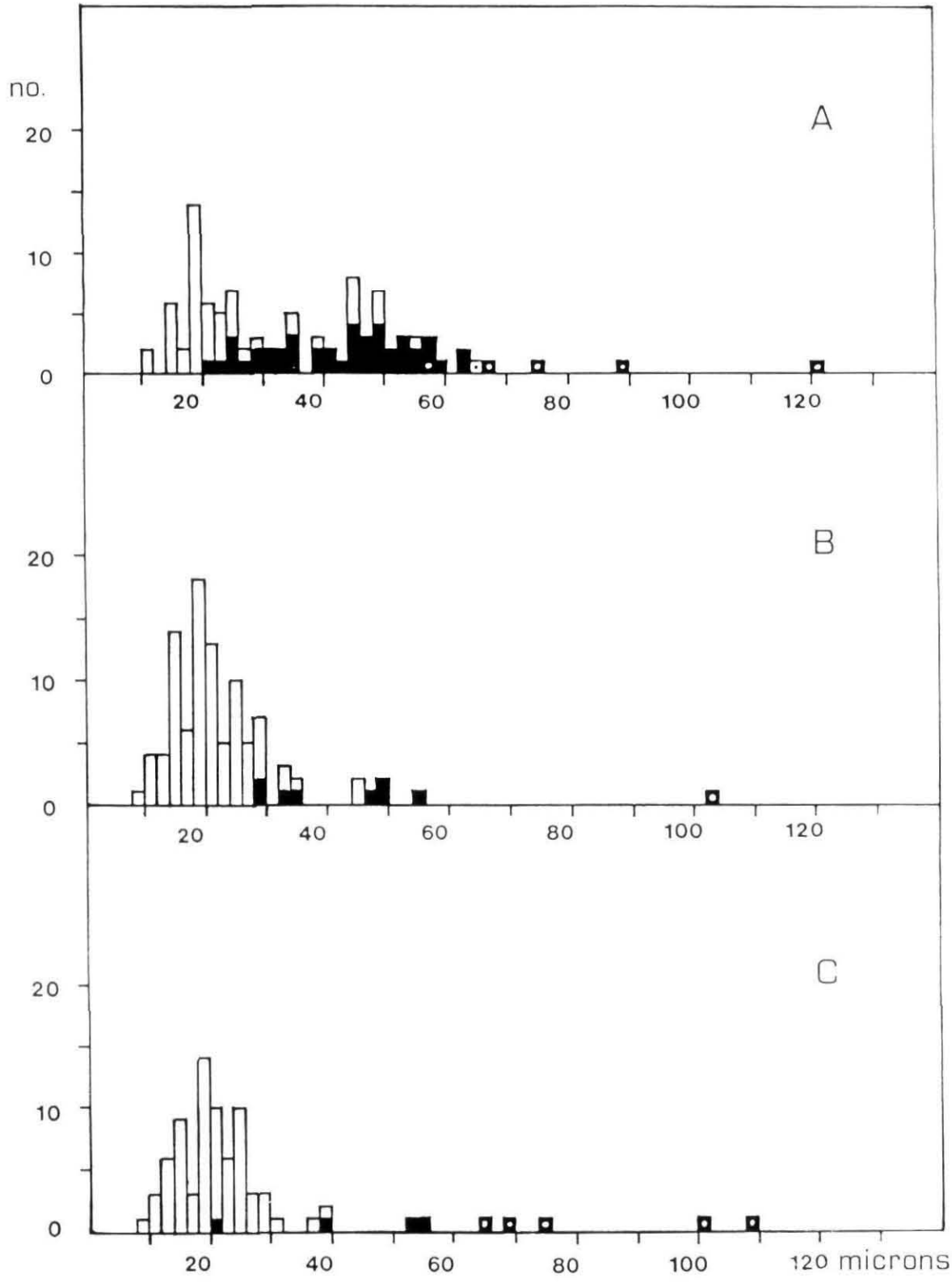
The textiles woven in 2/2 twill are coarse and medium-weight fabrics, ranging from 5 x 4 threads per cm to 12 x 10 per cm. Some, such as SF 1646, have a thin warp and a thick weft, while others, such as SF 1661i/ii, are more balanced fabrics. Most commonly the warp yarn is Z-spun and the weft S-spun (Z and S indicate the lie of the fibres in the yarn, reflecting the direction in which the spindle has been turned) but Z x Z (SF 1654) and S x S (SF 1643 and SF 1671) fabrics are also known. Some pieces are felted, presumably as a result of fulling the fabric in water after weaving, while others have been left without any obvious finish.

The most significant feature of these twills is the extensive use of naturally coloured wools. Some, such as SF 1656, were made from a dark brown or black wool throughout, but most would have been mottled shades of grey or brown; white textiles such as the fragment SF 1646, seem to have been rare. Six examples have a dark warp and a pale weft (SF 1659, SF 1661ii, SF 1663i, SF 1665, SF 1667 and SF 1669i) in the manner of the 12th-/13th-century 2/2 twills and three of these later examples were in close association with knitted goods (SF 1661-1663 and SF 1669), which suggests that the fabric type persisted into the post-medieval period at least.

The presence of dye seemed unlikely where naturally coloured wool had been used, but four Z x S fabrics (SF 1644, SF 1669ii and SF 1669iii, SF 1676) were tested by solvent extraction followed by absorption spectrophotometry (Walton & Taylor 1991); a visibly coloured piece of S x S twill with grey-green warp and red weft from upper levels of Trench L, SF 1671 Phase 7, was also tested. The coloured sample proved to have been dyed with at least one synthetic dye, indicating that it was made some time after the 1850s. Three of the others had no evidence for dye, but one, a heavily felted piece, SF 1676, showed a trace of an orange colorant. This was difficult to identify, but it was clearly not any of the commonly used medieval and post-medieval dyes. It may have been some local plant or lichen dye which has not yet been fully characterised. This fabric was the one which seems to have had a fur trim.

Heavy and medium-weight 2/2 twills such as those from the Biggings, especially those made from pigmented wools, are comparatively rare in medieval and post-medieval textile collections from towns of north-west Europe. The few examples found in English ports, Newcastle upon Tyne, King's Lynn and London, are regarded as imports from the northern world (Crowfoot 1977; Walton 1988, 81-4; Crowfoot *et al* 1992, 39-40). In Scotland and Norway the weave is better represented, but in diminishing numbers over time. At Oslo the 2/2 twill weave represents 25% of all excavated textiles from the 11th century, 24% from the 12th, 15% from the 13th%, 9% from the 14th and 5% from the 15th (calculated from data in Kjellberg 1979 and Kjellberg & Hoffmann 1991); and at Perth, Scotland, the weave forms 18% of the 12th-century collection, 9% of the 13th and 8% of the 14th (from data in Bennett unpublished).

Such fabrics are, however, more common in the Norse settlements in Iceland (Hoffmann 1974, 210, 213-4, 218, 367) and Greenland. The best evidence comes from Herjolfsnes in southern Greenland, where a



illus 111
The fleece types of the wools from the Biggings; a) Hairy warp from 2/2 twill SF 1624; b) Hairy Medium weft from 2/2 twill SF 1624; c) raw wool SF 1632. Measurements are of fibre diameters in microns.

small isolated community lived with little contact with the outside world until about AD 1500. Several garments excavated from the churchyard there proved to be in the fashions of Europe in the 13th, 14th and 15th centuries, but made in local fabrics (Norlund 1924, 87-191; Østergård 1982). These were predominantly 2/2 twills, on average 10Z x 10S per cm (Norlund 1924, 190). They generally have a dark brown or grey warp and a paler weft, the colour depending on natural pigment in the wool, although in some instances it may have been topped up with brown dye (*ibid*, 90; Østergård 1982, 273). The clothing fabrics from Herjolfsnes can be easily matched with the 2/2 twills of the Biggings.

It has been shown that on Papa Stour at least these fabrics continued well into the period in which knitting was in use -in other words, well after Norwegian control of the Shetlands had come to an end in AD 1472. This is supported by evidence from Gunnister on Mainland Shetland, where a man was buried in the late 17th century, wearing a long coat, breeches, shirt and outer jacket all woven in 2/2 twill and all except the shirt in natural wool colours (Henshall & Maxwell 1952). Similar types of fabric were probably current elsewhere in the Scottish islands. A man who died at Arnish Moor, Lewis, in the Outer Hebrides in the early 18th century was also wearing a jacket, shirt and undershirt of 2/2 twill (Bennett 1975), again in naturally pigmented wool (Ryder 1983a, 515-6). On Hirta in the St Kilda archipelago, the village community was still using similar textiles in the late 19th or early 20th century, although by this time dyes were more commonly in use and the heavy twills lay alongside modern machine-woven fabrics (Walton unpub). These textiles may therefore have had an unbroken period of use in the Scottish islands from the Norse occupation to the 20th century.

CHECKED 2/2 TWILL

One large fragment from the upper levels of the *stofa*, SF 1675i, is a handsome broad check, worked in natural wool colours. Burial in the peaty Shetland soil has given it a warm honey and brown tone, but originally the check would have been greyish brown with natural white. The alternating bands of light and dark are 56Z threads wide in one direction and 32S or 30S threads wide in the other. Check patterns in natural wool colours first appeared in the Iron Age (eg Henshall 1952, 8) but they disappear from view in post-Roman collections. They may have re-emerged with the early tartans which were being worn by Highlanders by the 16th century (Scarlett 1987). Most tartans are, of course, dyed, but the Shepherd Check, a traditional plaid of the border counties which Sir Walter Scott made popular as a trouser fabric, was made in a smaller check of natural charcoal grey and white (Gulvin 1973, 70-5; Ponting 1987, 79-81). Sir Walter's trousers were probably a more lightweight fabric than the examples from the Biggings which are more like a heavy winter dress or shawl material.

WOOL 2/1 TWILL

The small number of 2/1 twills (SF 1638, SF 1645, SF 1655i, SF 1657ii/iii, SF 1658ii, SF 1674) are similar grades of fabric to the 2/2 twills, from 6 x 5 to 12 x 8 threads per cm, and the yarn again Z x S. Unlike the 2/2 twills they are made from white wool and most are felted on one face. As already described, technically these fabrics could have been woven locally, but they are more likely to have been imported.

The first appearance of 2/1 twills of this sort in any numbers was in the 10th/11th century (Crowfoot 1979; Pritchard 1982); by the 12th and 13th centuries they were established as the main clothing fabrics in towns across north-west Europe (Crowfoot *et al* 1992, 27; Kaminska & Nahlik 1960; Tidow 1982; Vons-Comis 1982; Lindstrom 1982). By the mid 14th century their use was beginning to decline in England and they had all but disappeared by the 15th (Crowfoot *et al*, 1992, 28; Walton 1981 and unpublished data), although in Norway 2/1 twill seems to have continued for a century longer (Kjellberg 1979; Kjellberg & Hoffmann 1991). In the 17th century the 2/1 twill weave re-appeared in England in lightweight worsteds (Walton 1983) and in Scotland as a ground for checks (Henshall 1952, 21-4), but at this stage it was generally worked from Z x Z yarn. It is difficult to be certain that no 2/1 twills similar to those from the Biggings were woven in the post-medieval period, but on balance it seems more likely that they are dated somewhere between the 12th and 15th centuries. If this is correct then it provides a rough dating for the sock made from one of these fabrics (see below).

WOOL TABBY

The textiles woven in tabby weave are much more variable than the twills, in thread-count, weave, yarn-type, raw material and finish. Some of the coarser pieces such as SF 1647 and SF 1659, are Z x S fabrics made from pigmented wool, with warp darker than the weft. These are clearly relatives of the 2/2 twills already described and may have been woven locally. A further coarse piece made from Z x Z yarn, SF 1642, probably belongs to the same group. At Herjolfsnes coarse tabby-weave textiles such as these were used for hose, in contrast with the 2/2 twills which were used for dresses and other garments (Norlund 1924, 88).

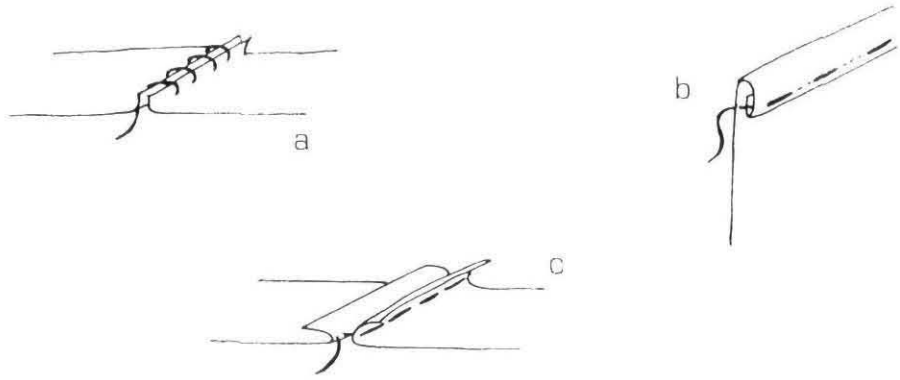
Three fragments, SF 1640, SF 1641 and SF 1664, are more likely to have been professionally made and imported into the Shetlands. These are thick fabrics, felted on both faces and SF 1641 and SF 1664 lightly teaselled and sheared; SF 1640 and SF 1641 are both spun S x S and SF 1664 is Z x S. Analysis of the wool in SF 1640 showed it to be different from the wool in the native fabrics (archive table 2) and all three proved to have been dyed red. Alizarin and purpurin were detected by analysis (Walton & Taylor 1991) which indicates the presence of the red madder dye, from roots of *Rubia tinctorum* L. In England heavy fabrics with a nap on both faces are more common from the post-medieval period onwards. The dye, wool, spin direction, weave and finish can all be matched with 16th- and more especially 17th-century tailor's offcuts from Newcastle upon Tyne (Walton 1981; 1983). Similar fabrics may have been produced in Norway and Scotland at the same time, but they are typically a product of specialist craftsmen and it is highly unlikely that anywhere in the Northern Isles had the expertise or the raw materials to make them. Their use was probably as jacket or coat material. A further tabby SF 1637 has also been dyed, in this instance brown or black, and has yarn spun S x S. Although this piece does not have a teaselled finish, it may belong with the same group.

Another easily identified fabric-type is the coarse tabby from SF 1670, woven from plied yarn. This is poorly preserved, but it is clearly made from some coarse animal hair. Textiles of this sort, generally made from cattle or goat hair, less frequently of low-grade wool, are regularly recovered from medieval levels of ports in Norway, Sweden, Germany and Great Britain (Schjolberg 1984; Walton 1988), where they are assumed to represent wrapping fabrics for merchandise. The piece from The Biggings came from lower levels of area K, which would conform with a medieval date.

One further fragment of tabby, SF 1636, has plied yarn in one direction, presumably the warp, and single yarn in the other. Textiles which blend plied yarn with single are known from 15th-century Oslo (Kjellberg 1979), but these are coarser fabrics than at the Biggings. The use of plied yarn in finer textiles is more common in machine-woven textiles and this piece, from upper levels of area E is perhaps intrusive and modern.

SEAMS AND SEWING THREAD

Many of the woven fragments show signs of wear and were probably already rags when they were buried. Some include remains of seams of different sorts (illus 112). The sewing yarn is always 2-plied from smooth glossy wool yarn and is relatively coarse at 1.2-2.5mm diameter. A large number of similar plied threads were found, together with spun weaving yarn, in levels close to the 17th-century floor in area E. This suggests that sewing yarn was being made or used in the dwelling-house at this time. It is impossible to identify the garments from which the fragments have come, except in the case of a foot covering SF 1655, probably the foot part of some hose.



illus 112
Seams used in the garment fragments from the Biggings.

WOOL SOCK OR HOSE

(illus 113)

When the foot covering SF 1655 from Trench K, context 8, was first excavated in 1978, it was examined by Dr Helen Bennett, who wrote the following description:

> Foot of a sock or stocking, incomplete, composed of two different textiles, one forming the toe and the other the heel section; 310mm x 113mm.
>
> i. Toe section of light/medium weight 2/1 twill, reddish brown, woven from smooth evenly spun yarn (for technical details see table 1 in archive). The section is formed from a single piece, folded and seamed under the foot.
>
> ii. Heel section of a heavier, more open and even fabric, tabby (ie plain weave), reddish brown (see archive table 1). This section is considerably damaged and it is no longer clear whether it was constructed from one or more pieces of fabric. It is joined to the toe with a circular seam and a second seam runs under the foot and up the heel. As far as can be seen the sewing thread is the same in all seams, suggesting that the toe is part of the original rather than a repair, but the piece is too incomplete for this to be certain.

The levels from which the foot covering SF 1655 was excavated (K8) included 17th-century Continental redware pottery as well as undated coarse wares and fragments of steatite vessels (**5.6.6** above). The ZS 2/1 twill with one face felted is, however, typical of the 11th-15th centuries (see above) and it is tentatively suggested that the sock is re-deposited from a medieval context.

Dr Bennett's report continues:

> Despite the fragmentary condition of this piece its identification seems reasonably certain. There are no comparable survivals from medieval Scotland but parallels are offered by the Herjolfsnes site from which were recovered a variety of cloth hose in various states of preservation (Nørlund 1924, 183-190). *The seam under the foot seems an uncomfortable arrangement* but is repeated in at least two of the Greenland examples. Nørlund also comments on the practice of cutting the leg and foot separately, the leg and heel being in one, which is likely to have been the structure of this piece. The finding of a cloth stocking is appropriate to the medieval period as knitting is unlikely to have reached north-west Europe until the late 15th century. Until that time coverings for foot and leg were either worked direct from the yarn by *sprang* or *nålebinding* or, more frequently, made from woven cloth (Hald 1953). Even after the introduction of knitting, cloth stockings continued to be preferred in some areas into the 17th and 18th centuries (eg Bennett 1975, 176; Henshall 1952, 26).

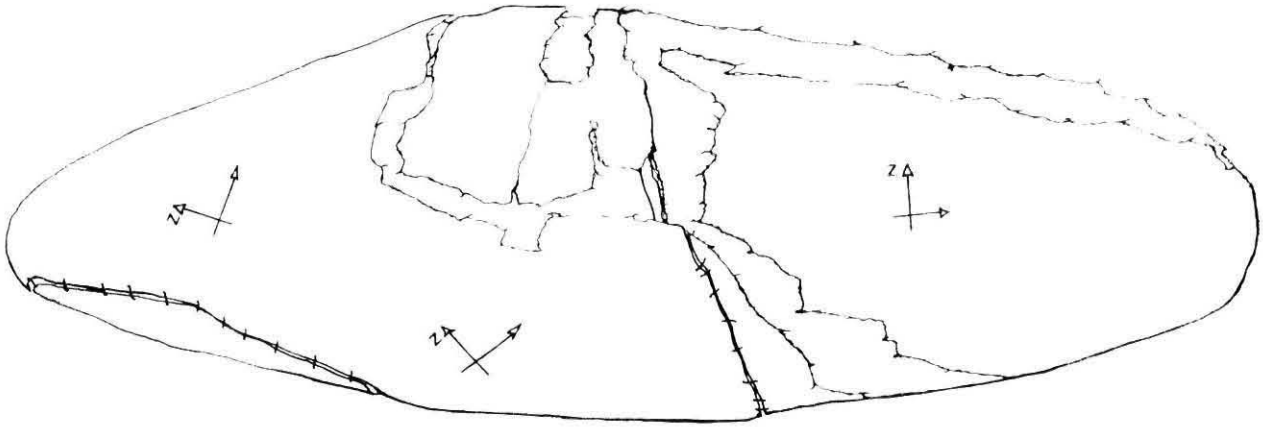
After Dr Bennett had completed her research, further cloth hose was recovered from 14th-century London (Crowfoot *et al* 1992, 187-9). This was made from wool tabby and the foot part had been constructed in a similar way to the foot covering from the Biggings, with a seam around the middle of the foot and a lengthways seam along the sole. In addition, the fully clothed body of a man recovered from a bog at Bocksten, Sweden, in 1936, has been published (Nockert 1985). The *Bocksten man was wearing garments of a late 13th or 14th century style* and his legs and feet were covered with long hose, very worn and repaired, made from 2/1 twill with a seam under the foot (Nockert 1985, 121-2). Most post-medieval hose seems to have the sole worked as a separate piece (Crowfoot *et al* 1992, 188-9, Orr 1922, 215, 219), except where rags have been cobbled together as a foot wrapping (Bennett 1975). This tends to support the view that the sock or hose from the Biggings is medieval in date.

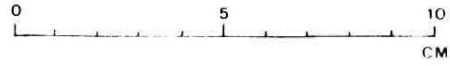
KNITTING

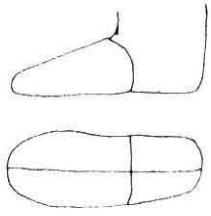
There are five examples of knitting (SF 1639, SF 1661iii, SF 1662, SF 1663ii and SF 1669iv). None is particularly fine, the coarsest being comparable with modern Aran-weight knitting wool and the finest with a heavy double-knit. All fragments were made from plied yarn, generally Z-plied, but in one instance S-plied (SF 1662). Three were made from white wool and two from natural fleece colours, SF 1661iii being originally dark grey or brown and SF 1662 similar, but paler. It is impossible to tell what kind of garment the fragments came from as they are mostly small and knitted in plain stocking stitch. The largest piece, the pale grey/brown example from SF 1662, has a cast-on edge but no increases or decreases or patterning over 220mm x 215mm. One of the small fragments SF 1661iii has several decreases, arranged in a *circle, as might be expected at the centre crown of the large flat Scots* bonnet. The only decoration is in SF 1669iv, where a single row of reversed stocking stitch forms a crossways ridge.

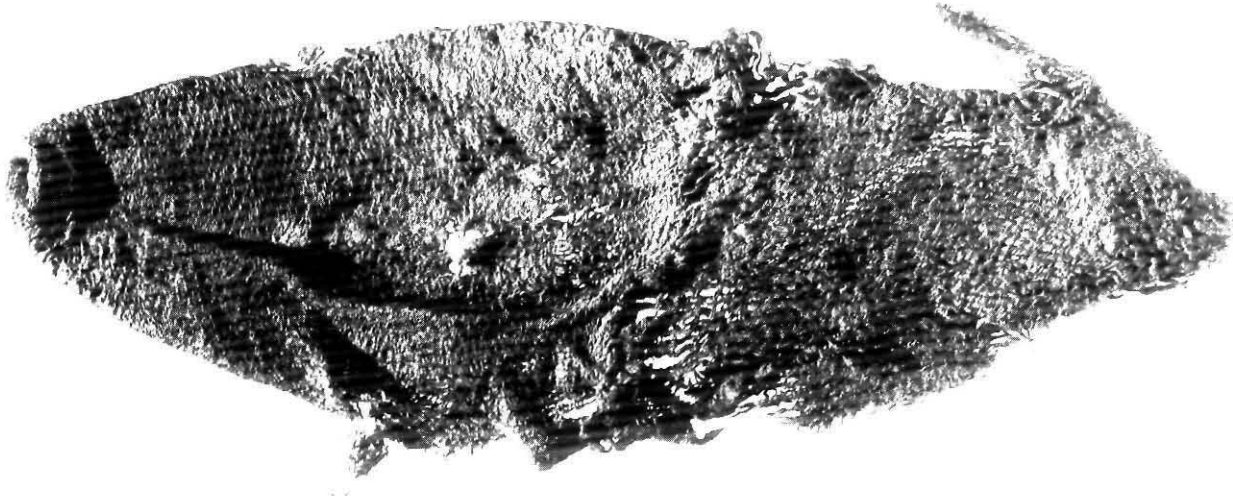
Shetland has become famous for its knitted goods in recent centuries, although the craft was slow to reach the islands. Knitting entered Europe in the medieval period, but was not taken up in Britain until the late 15th century. Professional bonnet-makers first begin to appear in the records of the burghs of Lowland Scotland about AD 1500 (Bennett 1987) and at some stage in the 16th century the craft seems to have been taken up domestically in Scotland. At about the same time knitting spread to Denmark and Iceland, although when it arrived in Norway is *less clear and it may not have reached Sweden before the 17th century* (Kjellberg 1981, 237).

By the early 17th century knitting had been established in Shetland (see below, Comment). The man buried at Gunnister on Mainland Shetland in the late 17th century, described above, wore knitted stockings, hat and gloves, with a second hat and a knitted drawstring purse on his person (Henshall & Maxwell 1952). These were all made from natural fleece colours, although some dyed yarn had been used in the patterning of the purse. All knitting was mainly stocking stitch, using Z-plied or S-plied yarn. The coarsest knitting was in the stockings, but even this was finer than the knitting from the Biggings. Both the Gunnister hats had round crowns, whereas the circular decreasing on the fragment SF 1661iii is more like the almost flat crowns of the bonnets from 17th-century Dava Moor, Morayshire, and Tarvie, Ross-shire (Henshall 1952, 21-5, plate IV); these are only a little finer than the knitting from the Biggings.









illus 113
Drawing and photograph of the foot-covering SF 1655.

7.6.3 MODERN MATERIAL

The site at the Biggings was in continuous occupation until the 20th century and the stone Gørl or croft building was abandoned in the 1930s. Surface finds include a wool textile in 3/2 twill SF 1743, dyed with Saxe Blue, an indigo derivative in use from the mid 18th to the late 19th century; a fine black ?silk tabby SF 1741, possibly the remains of a ribbon; and two pieces of twill, SF 1742 and SF 1740, reminiscent of the medieval textiles. A further three textiles below the surface but still in the upper layers of the excavation are probably also relatively modern. These include a second example of 3/2 twill, SF 1651, very like the surface find SF 1743; a fine tabby-weave textile, probably machine-woven (SF 1636); and a synthetic-dyed twill SF 1671.

Similar finds were recovered from St Kilda, from levels dated to 1860-1930. There were several examples of 3/2 twill and a black silk bow on a metal pin. On both Papa Stour and St Kilda the heavy style of twill seems to have continued in use alongside machine-woven fabrics and, more rarely, silk. The St Kilda twills were similar to the old wadmal, but were now more frequently dyed a dark blue. By this time they were known as 'tweed', which was to become one of the main exports of the Hebrides and other Scottish islands (Ryder 1983a, 511, 516-7).

7.6.4 COMMENT

It has become clear during this study that most of the textiles from the Biggings match those of the Norse settlements of the North Atlantic. These island products are significantly different from most textiles excavated in the towns of the Scandinavian homeland–or indeed elsewhere in north-west Europe–although a small number of the town textiles do occur in the Biggings collection. To understand how this came about, it is necessary to see the Shetland finds within the broader context of the European textile industry, its products, tools and raw materials.

RAW MATERIALS

During the Iron Age the primitive brown-fleeced sheep of northern Europe were joined by a new strain which Dr M L Ryder has dubbed the European vari-coloured short-tail (Ryder 1968; 1981; 1983b). These introduced a whole new range of fleece colours: black, brown, white, grey and occasionally roan (Ryder 1968). Further introductions and selective breeding were to make white wool more commonly available through much of north-western Europe, but the vari-coloured short-tail continued to be farmed in Scandinavia and north Britain.

The Norse took the same stock to Iceland and thence to the Faeroes and Greenland (Ryder 1983b, 543), so that the same coloured fleeces were available through all the Norse settlements from Greenland to north-west Scotland. Modern descendants of these sheep, such as the Spael of Norway, the Gotland of Sweden, the Orkney of the Northern Isles and the present-day sheep of Iceland and the Faroes, still have substantial numbers of coloured fleeces, which, from Dr Ryder's measurements, can be matched with the wools from the Biggings in staple length, pigment and fibre diameter (Ryder 1968, 155; 1983b, 542-3).

URBAN VERSUS RURAL PRODUCTS

The Norse also took their traditional looms and weaving practices to their new settlements. At the time that they were first moving out into the North Atlantic in the 9th century, textile production through much of north-west Europe was still largely a domestic craft carried out by women using an upright warp-weighted loom. The products of these looms were variants of 2/2 twill and tabby, as can be seen for example in the Viking burials of the Scottish islands (Crowfoot 1949; Henshall 1952, 9-17).

By the 11th century, however, matters were changing as the arrival of a new horizontal loom in northern Europe coincided with the rise of new urban markets for cloth. Specialist weavers, generally men, could now produce quantities of cloth for sale and the weave this new breed of artisan seems to have preferred was 2/1 twill. Hundreds of fragments of wool 2/1 twill have been recovered from medieval levels of towns in Germany, Holland, Great Britain and Scandinavia. In England, where craft weavers became organised at an early age, the change from 2/2 twill and tabby to 2/1 twill for clothing fabrics seems to have happened relatively quickly in the late 10th and early 11th centuries. In Norway and Scotland the changeover was more gradual and in Scotland, at least, pale grey or fawn wools seem to have played a more significant role than in England -although white wool clearly had a foothold (Ryder 1983a, 515). When ZS 2/1 twill made from white wool appears in the collection from the Biggings it seems most likely that it represents an import made in some European town.

Medieval 2/1 fabrics often had a felted face on one side and the development of this kind of 'finish' represents the next change in textile production. In England 2/1

twill was replaced by tabby weave in the course of the 14th century as a teaselled and sheared nap was now applied to both faces of the fabric (Walton 1991; Crowfoot *et al* 1992, 43-4). Again, in Norway and Scotland the same changeover took place, but up to a century behind the English industry. The finish was at first applied to dress weight fabrics (Walton 1981) but by the 17th century it was more commonly applied to heavy coat and jacket materials (Walton 1983). At the Biggings, the three red-dyed tabbies SF 1640, SF 1641 and SF 1664, are representatives of this later type.

These changes in textile products have been identified from the surviving fragments of clothing worn by residents of towns. How country people dressed is less clear. In England in the medieval period, 'russets', ie, textiles in natural fleece colours, were regarded as the proper clothing for 'all labourers and lower classes of the people' (Strutt 1842/1970 ii, 106) and in Germany 'grey cloth', was a rural product (Hoffmann 1974, 219). The weave of these country fabrics is not known, but it may be that they were similar to the textiles of the farmsteads of the North Atlantic islands. On these islands, through centuries of change in north-western Europe, weavers stalwartly produced the same 2/2 twill textiles as they had done since the Viking Age, using the same looms and the same coloured fleeces as before. Although European garment fashions such as the liripipe hood and the long, close-buttoned man's dress reached settlements such as Herjolfsnes, European fabrics and the new loom do not appear to have followed. These traditional 2/2 twills make up the bulk of the textiles from the Biggings.

WADMAL AND OTHER NORTHERN PRODUCTS

Documentary sources from Iceland, some as early as the 11th century, describe a fabric called wadmal which seems to have been woven in 2/2 twill on the warp-weighted loom (Hoffmann 1974, 194-226). The work was carried out by a woman servant, *vefkona*, with special responsibility for making cloth (*ibid*, 199, 219). The cloth was between two and three-and-a-half ells wide and 20 or more ells long. 17th- and 18th-century documents describe several different qualities of wadmal and calculations based on an ell of 556mm suggest that these had thread-counts in the warp between 7 and 12 threads per cm. All but the coarsest of the 2/2 twills at the Biggings fit within this range. Another fabric, *einskept*, seems to have been a wool tabby of equal or lesser value to wadmal (*ibid*, 210, 363-5). Again, this would fit most of the tabbies woven from natural fleece colours from the Biggings. 2/1 twill on the other hand is nowhere described in the Icelandic sources (*ibid*, 200). Finds of textiles woven in 2/1 twill with typical warp-weighted starting borders from Oslo (Kjellberg 1979, 86-7) and Lund, Sweden (Lindstrøm 1982, 182-3, 191), show that the old loom could sometimes be adapted to weave 2/1 twill, but this seems to have been only in or near towns, presumably to compete with the horizontal loom's products. The 2/1weave is not a natural product of the warp-weighted loom, nor is it the traditional one.

Wadmal woven on the warp-weighted loom was Iceland's main medieval export. Wadmal was also made in Norway, the Faeroes, Orkney and Shetland (Hoffmann 1974, 212, 365, 368), all places where the warp-weighted loom continued long after it had been replaced elsewhere (*ibid*, 52-3). In the Northern Isles the horizontal loom may not have arrived until the 18th century, which is when it reached Iceland and the Faeroes. Certainly, the old loom was still known in Orkney in 1790, although it had fallen out of use by that time (*ibid*, 51). There is no reason why wadmal should not be woven on a horizontal loom, but its production seems to have been especially centred on the more remote districts where the warp-weighted loom was the main weaving equipment.

In Shetland wadmal was used to pay *skatt*, a form of land tax, payable to the jarls on behalf of the Norwegian crown (Bennett unpublished, 32) and according to the accounts from the Royal Residence in Bergen *hjeltevadmall*, Shetland wadmal was imported into Norway in some quantity (Hoffmann 1974, 368 n102). The quality of the traded fabric is not known, but it seems reasonable to call the 2/2 twills from the Biggings *hjeltevadmall*. Wadmal continued to be made long after the islands were no longer under Norwegian control and it remained the main clothing fabric of working people into the late 18th century (Fenton 1978, 461-2). In the following century the name wadmal was still used, but by this time it was more frequently dyed and presumably woven on the horizontal loom (*ibid*).

KNITTING IN SHETLAND

Dr Hoffmann has noted that the craft of knitting often took hold in those areas where wool was plentiful but the rather slow and cumbersome warp-weighted loom was the only means of weaving it up (Hoffmann 1974, 225, 369, n113). Knitting seems to have reached the Shetlands in the late 16th or early 17th century, when it was taken up by the families of tenant farmers as a casual occupation, to be fitted in between chores about the farm (Bennett 1987). The local sheep, as has been described, were similar to the Orkney (the present-day Shetland breed has been selectively bred from this stock within the last hundred years: (Ryder 1983a, 535) and had a fine underwool especially suited to knitted goods. The fleeces could be 'rooed', that is, plucked from the sheep in midsummer, when most of the hairs in the fleece would be left behind (Ryder 1983a, 531), although there is no evidence for this in the knitted goods from the Biggings.

From sheep to knitted garment did not take long. In 1615 a couple contrived to steal a black ewe from a neighbour and 'make ane pair of sockis of the woll thair of' before they could be caught (Bennett 1987, 49). In the long winter evenings of the Northern Isles, stockings, gloves and nightcaps could be knitted up from homespun yarn and then sold to merchants, or more especially visiting Dutch and English seamen who called at Lerwick on their way to the northern fishing grounds. Some of the knitted fragments from the Biggings are typical of early Shetland knitting in the use of natural colours of the fleece. The present-day use of Fair Isle patterns and fancy lace stitches were 19th-century introductions (Bennett 1987, 55-60) and the pieces from the Biggings are from coarser, more functional garments.

7.6.5 CONCLUSION

Although the textiles from the Biggings came from insecurely dated levels, examination of the finds suggests that their date-range runs from the 12th century to the present day. The textiles have proved to be typical of the clothing of the farming-fishing communities of the North Atlantic islands: solid, naturally-coloured twills and tabbies, with the addition of knitted goods in later centuries. Only one of the twills seems to have been made into a better class of fabric, the heavily felted, dyed piece SF 1676, which may have had a fur trim.

Unlike the settlements of Greenland, the community on Papa Stour seems to have had access to some traded cloth, reflecting the Shetland Isles' closer links with parts of north-west Europe through traders and visiting fishermen. It is already known that in the 18th century better-off citizens of the Shetland townships would wear English cloth, while poorer people would wear locally made fabrics, except perhaps for Sunday clothes (Fenton 1978, 460-2). Such a position may have obtained in earlier centuries, as well. No doubt linens from Orkney or from Scotland (*ibid*, 6, 491-3) would also have been worn, although these would have perished rapidly in the peaty soils of the Biggings. The surviving imported fabrics are, however, represented in only small numbers and spread over a long period of time: on Papa Stour at least, the bulk of the clothing, from the 12th century onwards, seems to have been solid home-made Shetland wadmal.

7.6.6 TEXTILE DISTRIBUTION AT THE SITE

Beverley Ballin Smith

Stratigraphically the earliest textiles, as described above, were recovered from the eastern side of the excavation, around and beneath the Phase 3 *stofa*. Two pits from Phase 1, J110 and PL161, produced fragments of 2/2 twill textile and yarn.

PHASE 2

In Phase 2 there was some wool tabby and raw fleece from the corner hearth J108 of the *dyngja* and a bundle of wool yarn from the cut surrounding the fire-pit JL84.

PHASE 3

In Phase 3, the majority of textiles, fibres and yarn, again come from the eastern end of the site, where a new *stofa* was erected above that of Phase 2. A fragment of 2/1 twill, the earliest, was found just below the wooden floor of the *stofa*, and both unprocessed fibre and fleece were found on the floor. In addition to fleece, cattle and goat hair was also found. In a contemporary building at the west side of the site, the *skáli*, both textile (tabby) and unprocessed plant fibre were found in deposits immediately above the oven.

With the end of use of the Phase 3 *stofa*, there is a related decline in the number of textile samples from the east end of the site. Fragments of 2/2 twill from a pit L24, dug into the remains of the *stofa*, are the only textiles from this part of the site.

PHASE 4

n contrast a large number of textiles were found in association with the Phase 4 dwelling-house (Trenches E/EJ) which replaced the *stofa*. Over 40 fragments of 2/2 twill with some plaited wool and animal fibres were found beneath the wooden floor of this building. This amount of material may indicate disturbance of earlier contexts beneath the dwelling-house or an active contemporary textile production. To support the latter, the floor, and contexts around the hearth of the dwelling-house produced fragments of tabby textile, wool yarn, animal fibres and several examples of knitting, the first at the site. Above the floor were found 2/1 twill and tabby textiles, wool yarn and unprocessed wool. In peaty deposits (K17, K98, H12) surrounding the buildings on the west side of the site and a wall cut (K127), were several samples of 2/2 twill, a little tabby and many fragments of knitting as well as plant and animal fibres. Like the material beneath the floor of the dwelling-house, some of the other samples found in this Phase could have derived from Phase 3 deposits or could have been discarded from the dwelling-house itself. In all 41 samples came from this phase.

PHASE 4-5

Between Phases 4 and 5 (Phase 4-5) several textiles, notably 2/2 twill with a little 2/1 twill and animal fibres were found in, or lining, pits (L41, E64) or in a silt context (PL144) towards the eastern side of the site. A little 2/2 twill and some animal fibre were found in peat and sand at the western end of the site.

PHASE 5

The Phase 5 dwelling-house (Trench K) produced the majority of tabby, 2/1 and 2/2 twills as well as wool yarn and plant and animal fibres of this phase: 15 samples in all including the foot covering. Fragments were found just above the floor, and in the drains (K20, K34, E9) associated with the building. Although it is quite possible that some textile production was carried out in this dwelling-house, many of the samples were found in disturbed contexts.

PHASES 6 & 7

All the samples (including the modern material) from Phases 6 and 7 were from the topsoil and disturbed contexts. A little tabby textile, wool fibre and cord came from the Gørl to indicate that textile production survived at the site to modern times.

7.7 HORN ARTEFACTS

Sonia O'Connor with D James Rackham

Six items of horn were submitted for study. Five of them had been kept wet as found and required some conservation treatment; the sixth from L14 SF 1613, had previously been treated elsewhere. Four were cattle horn, one most probably goat, and one could not be identified to species. In addition there are five other artefacts, three previously identified by D James Rackham, one classified under 'Iron artefacts' and one found among the plant samples. The latter two have not been identified to species.

7.7.1 THE PIECES

CONDITION AND CONSOLIDATION

SF 1612 (JL3), SF 1614 (PL113) and SF 1615 (PL164) were all packaged wet. They all had friable, flaking or delaminating surfaces and, after removal of burial deposits using a soft brush, the decision was taken to consolidate them by impregnating with an acrylic dispersion polymer. Consolidation was achieved by immersion in Revacryl 452 (Harlow Chemical Company) diluted to 50% with distilled water followed by air drying.

SF 1616 was lifted on a block of peat, underlain by a buff coloured clay, and was kept wet until it was freeze-dried. The entire block was prepared for freeze-drying by immersion in a solution of polyethylene glycol and then deep frozen. The water was then removed from the frozen object as water vapour under high vacuum. No dimensional changes were observed. The soil block was then carefully excavated revealing the remains of more horn beneath the peg.

SF 1617 was also lifted on a block of soil incorporating a mass of iron corrosion. After careful excavation of the soil block the object was X-rayed revealing the nature and extent of the iron component. The horn was then consolidated as described above and the outer corrosion crust was removed using an airbrasive unit to expose the surviving detail of the object.

DESCRIPTION OF THE PIECES

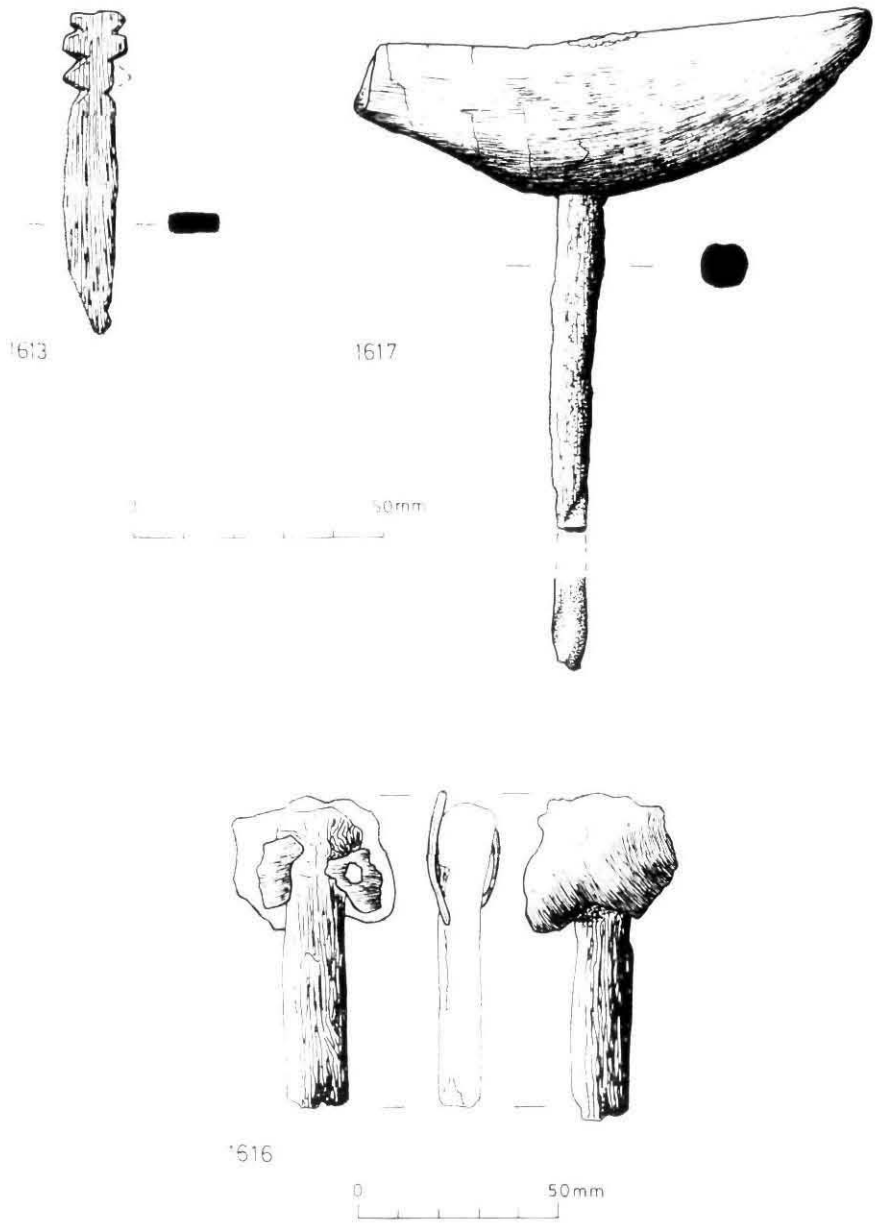
SF 1612 from Phase 6 is the distal tip of a cattle horn 5mm long and *c* 30mm x 33mm wide at the basal end, with the horn core cavity surviving to a depth of 4mm. The external surface is eroded but the shape of the horn is well preserved and gives no indication of working. The basal edge has been cut straight across and the very point of the horn tip removed. There is also a very rough, sub-circular hole, of maximum diameter 13mm, through the lateral surface of the horn sheath at the distal end of the horn core cavity. The sheath is very thin here probably due to erosion rather than working, and there is no evidence to suggest that this hole is anything other than a natural consequence of this decay.

SF 1613 from the Gørl (Phase 6) (illus 114) is a longitudinal strip of horn 62mm long, 10mm wide and 5mm thick, which is slightly curved along its length. There are no diagnostic features which allow a confident species identification. The margins of the concave surface are rounded and one end is roughly pointed and the other had been cut flat. Below the flat end three V-shaped notches have been cut on either edge over a distance of 18mm. There has been some damage to the notched decoration but generally the surface detail of this object is well preserved.

SF 1614 from Phase 5 is a badly exfoliated, distal horn tip, 95mm long, the very point of which had been cut off. No other evidence of working has survived. Although the surface and interior of this horn is very eroded neither the overall shape nor the grain of the horn display the curvature or torsion associated with cattle horn. Indeed the horn is very straight with a flattened, pronounced elliptical, cross section. Although flattening could have been deliberate or have occurred during burial, on balance the evidence suggests that this is goat horn.

SF 1615 from the fill of a feature in Phase 4-5, is a well preserved section of a cattle horn with a maximum length and width of 62mm and 54mm respectively. The section has been taken from the basal end of the horn by two transverse cuts. It may have been an entire circle of horn as the longitudinal edges of the section are broken not cut. The curvature of the horn has survived and the features of the external surface and the horn core cavity are very well preserved indicating that these surfaces have not been worked.

SF 1616 from Phase 4-5 is a wooden peg with associated horn fragments. This whole stem peg is made of willow (*Salix* sp) and was identified by Dr Allan Hall of the Environmental Archaeology Unit, University of York. It is 11mm thick and 17mm wide and 81mm long, ending in a break. The top 15mm of the peg, which was within the area of the horn fragments, swells to 16mm thick by 24mm wide above which the edges have been bevelled. The lower surface of the peg, which had remained embedded in the peat, has some longitudinal corrugations and examination of the end grain shows a collapsed wood structure. Both these features indicate that the wood, once degraded, has at some point dried out and shrunk. The top of the peg beneath the horn has shrunk less possibly because it was protected in this position and remained less degraded. The lower surface of the peg is smoothly curved transversely whilst the exposed area of the upper surface is



illus 114
Worked horn SF 1613, wooden peg with associated horn fragments, SF 1616, and horn and iron twist-bit SF 1617.

coarsely faceted longitudinally. Absence of longitudinal corrugations on this surface may indicate that these facets are not the results of deliberate working but damage sustained upon excavation.

Only two small fragments of horn survived above the upper surface of the peg, but a much larger piece was located within the peat a few mm below the peg. The orientation of the grain of the horn and the position of the fragments in relation to the peg suggest that the top of the peg was inserted through the side of the basal end of a horn (illus 114). As the object lay in the ground the basal end of the horn was to the left of the peg. Because of the poor preservation of the small amount of horn which has survived it is impossible to speculate about the original extent or shape of the horn element of this object, but the surviving surfaces detail does indicate that this was most probably cattle horn.

SF 1617 from burnt deposits over the Phase 3 *stofa* (Phase 4) (illus 114), is a horn-handled iron twist-bit/gimlet. Additional information is by Carole A Morris (see also **7.5**).

The handle is made from the distal tip of a cattle horn. It is 105mm long

and *c* 33mm in diameter at its widest point, where the iron rod passes through it 55mm from the tip. The longer end tapers naturally to the tip of the horn but the basal end has been cut or shaped to produce a similar taper and many overlapping facets are visible. The top of the horn core cavity protrudes into the basal end for *c* 15mm and this end is neatly cut across where the taper impinges on the cavity.

The iron bit is 95-100mm long with an unknown tang shape. One end is flush with the concave lateral surface of the horn and it protrudes from the convex surface for 67mm perpendicular to the long axis of the handle. It is hammered flat and has a rounded square cross-sectioned shaft *c* 9mm thick. The distal end shows the beginning of a clockwise twist before it ends in a break. This object is perhaps a horn handled gimlet or twist bit.

Three other pieces of cattle horn sheath were previously identified by D James Rackham and these are included here. All three fragments are from the solid portion of the horn sheath at the tip of the horn and above the bony core. It is possible that part of the sheath surrounding the core where the horn is thinner and more prone to exfoliate has failed to survive burial, although the solid tip may have been cut off the remainder of the sheath.

SF 1609 from a drain cut in Phase 5, the best preserved of the pieces is a worked portion of the distal tip of the horn sheath. One side of the sheath has been faceted by the cutting or shaving of horn from the outer surface and *c* 25mm from the surviving tip of the fragment a small hole has been cut out of the facet. On the opposite side of the sheath from the facet much of the horn has been lost, either by erosion or working, or both, and the cavity for the horn core tip is exposed. On the lateral surface (the outer curvature) of the horn, a second facet has been cut on the basal half of the fragment, approximately at right angles to the first facet. It is possible that the tip may also be worked but there are no clear cut surfaces indicating artificial damage.

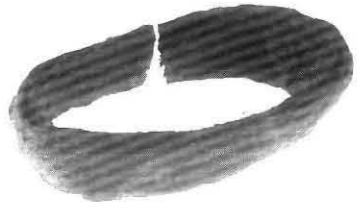
SF 1610 from Phase 4 shows no evidence of working. It is the tip of the horn with the outer layers eroded and exfoliated.

A piece, now lost from Phase 5, had lost the tip of the horn, and one side of the sheath was badly eroded, but a portion of the horn core cavity was present at the basal end of the fragment. This piece was also not worked.

Subsequent to the writing of this report, two additional horn pieces were located.

SF 119 from Phase 4 (illus 115) is a horn roundel, cut through a section of presumably cattle horn. Its measurements are 44mm x 22mm and although broken through, it was originally a complete circle of horn. It shows no surface working, and appears to be very similar to SF 1615.

SF 1062 is also from Phase 4 (illus 90 above), but found in a pit fill at the eastern side of the site. It is a knife handle with the remnants of the iron blade still present. The handle is oval in cross section, some 13mm x 15mm and has a cylindrical body which measures 70mm in length. The horn is cracked and shows some exfoliation of the surface.



119

illus 115
Horn ring SF 119; reproduced at approx 1/1.

7.7.2 DISTRIBUTION OF ARTEFACTS

Beverley Ballin Smith

(table 18)

Very few of the horn artefacts are from well stratified contexts which tell us about its use on the site. The earliest pieces are from Phase 4, suggesting that fragments from earlier phases have not survived the depositional conditions. The condition of the recovered artefacts is poor but the surviving fragments indicate that horn was a resource which would have been used from earliest times on the site.

PHASE 4

The knife SF 1062 was discarded into a pit fill in Phase 4; the twistbit or gimlet SF 1617 was found in contexts associated with the destruction of the Phase 3 *stofa*, and especially that of its roof. The remaining two artefacts from this phase, were from predominantly peaty contexts below or surrounding buildings on the western part of the site. Two other artefacts, including the horn and wooden peg SF 1616, were found at the east side of the site in a levelling layer and a shallow feature fill.

PHASE 5

The three items from this phase were found in a drain cut, silt and a mixed soil, spread across the site.

	Phase				
	4	4/5	5	6	Total
Trench					
H	1	0	0	1	2
K	1	0	1	0	2
E/EJ	0	0	0	0	0
J/JL	1	1	1	0	3
L	1	0	0	0	1
P	0	1	1	0	2
R	0	0	0	1	1
Total	4	2	3	2	11

Table 18
Horn artefacts from the Biggings - numbers by phase and trench.

PHASE 6

The last two artefacts from the site were found within the fill of the Gørl.

Although there are only eleven artefacts, they do reflect some of the uses to which horn was put. The sheathing of an iron blade and the metal twistbit in horn handles, reflect the everyday use to which the resource was put. Horn was a by-product of animal husbandry and as such was a material which was readily available on the island. The items made from horn are those which could have been easily made at the site and did not require any outside expertise.

Note

The conservation of these finds was carried out by Sonia O'Connor, except for the freeze-drying of SF 1616, which was performed by Jim Spriggs at the Conservation Laboratories of the York Archaeological Trust.

8

THE BUILDINGS AT THE BIGGINGS: SEQUENCE AND FUNCTIONS

Barbara E Crawford & Beverley Ballin Smith

8.1 SUMMARY OF THE BUILDING HISTORY

Phase 1: The oldest C14 date obtained at the east end of the site (cal AD 597-820: GU 1629) may suggest pre-Norse activity, but the peat charcoal from which the estimation was taken is not considered to be a reliable material for such dating methods.

Phase 2: (11th-12th centuries). The phase comprises two structural subphases:
2a: The earliest structural evidence is for the sunken floored building, the *dyngja*. Evidence of comparable Icelandic and Norwegian structures indicate that it was a bath-house or weaving house, probably dating to the 11th century, which was the period when such structures were in use.
Phase 2b: The change of heating from wall-hearth to central fire-pit suggests a development of this building along the lines of the *stofa* type, built of wood and with wall benches, dating to the 12th century (C14 date from wood charcoal from floor J107 cal AD 1017-1256: GU-1603).

It was accompanied at the west end of the site by evidence for two structures, probably all wooden, interpreted as a possible *eldhus*, and a hall or *skáli*. There are no radiocarbon determinations from these buildings, but the artefacts are not inconsistent with a construction lying between the middle of the 11th to the beginning of the 12th century (evidence comes primarily from the Norwegian bakestone fragments and the Paffrath ware found in later disturbances), and its use ending *c* AD 1250.

Phase 3: (*c* 1200 - *c* 1400) There was a clear remodelling of the eastern Phase 2 structure into a classical *stofa* building along Norwegian lines, with wooden floor, and wood-covered benches, corner hearth and well-built stone sill foundation for west gable wall. This is likely to be linked with the new political circumstances after 1195 and the establishment of a royal Norwegian administration in Shetland. The C14 date of cal AD 999-1214 (GU 1775) was from a floor plank (which may have been re-used), and the archaeological evidence points to it being in use for two centuries. The protective wall on the south side was added perhaps towards the end of the life of the building. Addition of privy outside west gable allocated to this phase.

At the west end, modifications took place and two structures could still be identified: the *skáli* was probably rebuilt, or remodelled, and its fire-pit was replaced by an oven; the westernmost building became a new and larger *eldhus*, with stone walls. Fragments of a medieval jug, and pumice dated to after AD 1362, are consistent with a use from approximately the middle of the 13th century to the beginning of the 15th.

Phase 4: (*c* 1400 - early 1600s) The Phase 3 *stofa* continued in use but a decline in its status could be identified, showing evidence of hard domestic usage. Wooden flooring needed to be covered with groups of flagstones, and pits were dug for steeping or dyeing of textiles.

In the west end, two buildings replaced the earlier structures, both with stone walls. One is a two-roomed dwelling-house, the other an attached ancillary structure with a hearth possibly continuing the function of the earlier *eldhus*. Their suggested dating is from the beginning of the 15th century to probably the middle of the 17th. The end date is based on the evidence from imported continental redware ceramics.

Phase 5: (early 1600s - mid 19th century) This period saw the building of a stone dwelling-house which is depicted on 1846 plan (Endpapers). It remained in use from the early 17th through to the mid 19th century. In the west end there was a single dwelling-house at the beginning of the phase with at least two rooms, with the addition of a possible yard or byre/barn. Additional walling suggest further building took place prior to 1846.

Phase 6: (mid 19th century to 1930s) Destruction of the existing housing and previous settlement alignment took place between 1850 and 1880. The small croft house called 'the Gorl' was built nearly at right angles over east end of former houses. It was in use until 1930s.

There were no recognisable structures for this phase at the west end.

8.2 PHASE 2: BUILDINGS OF THE 11TH AND 12TH CENTURIES

At the east end of the site this phase is characterised by a wooden building, a *dyngja*, with internal banks, a central fire-pit (J105), and a hearth (J108) abutting the north bank. To the west, there is a rectangular structure, functioning as a probable hall or *skáli*, with a fire-pit (Hi20) at one end and a hearth (EJ22) at the other. In addition there is an associated building with a hearth (K156) which may have been a cookhouse or *eldhus*.

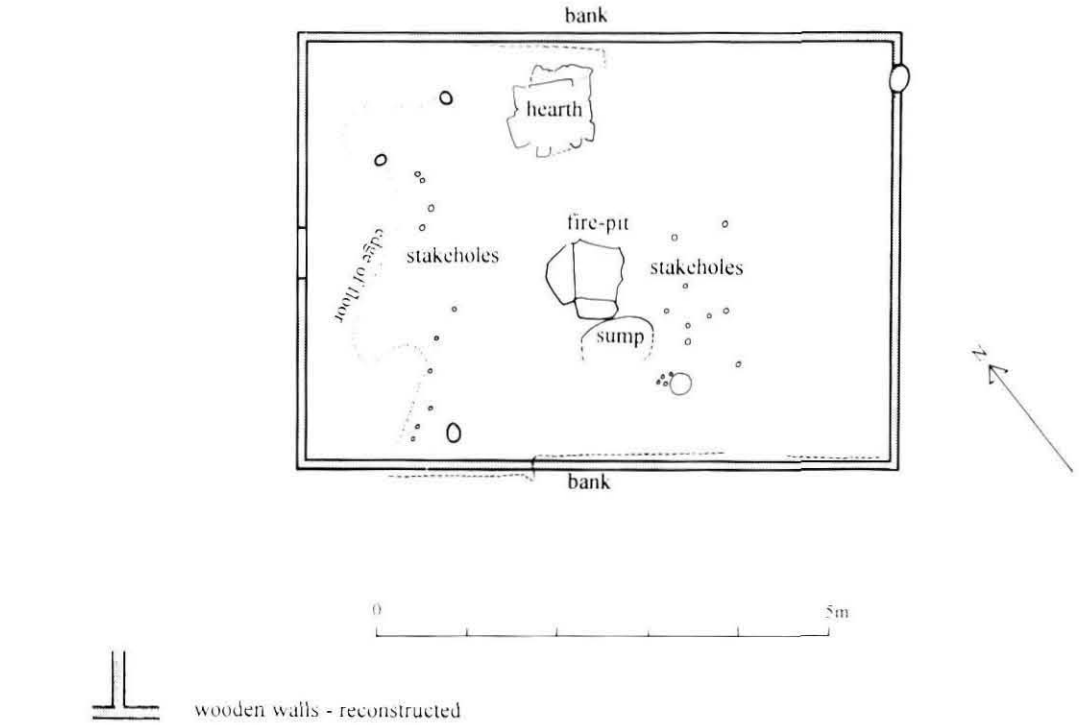
8.2.1 THE EAST END OF THE SITE: THE *DYNGJA*

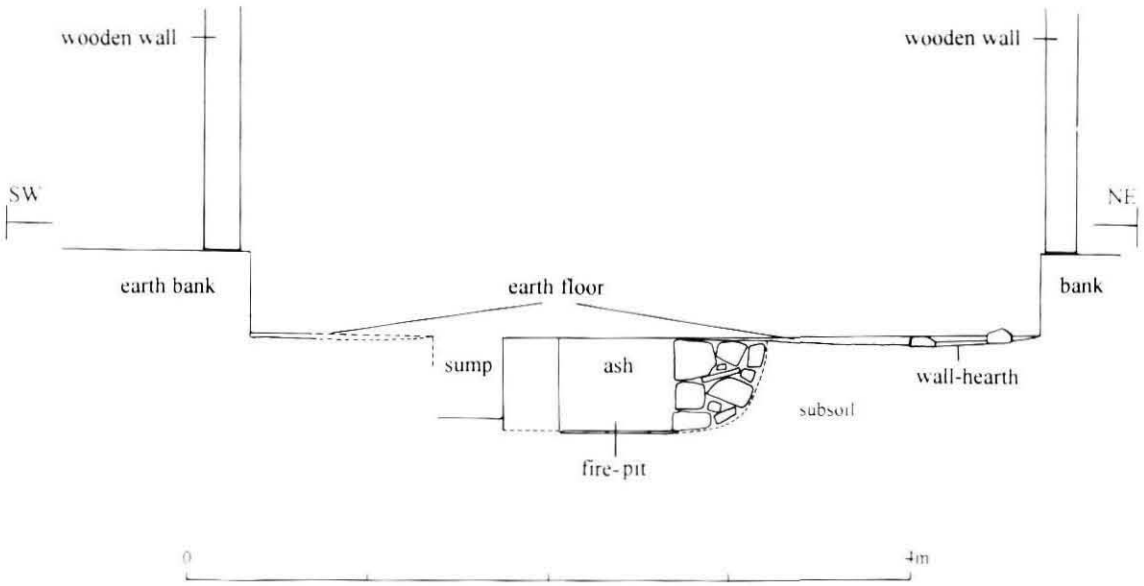
(illus 24; 116)

The first recognised building at the east end had been dug down below ground level when constructed, therefore appearing slightly sunken, and this feature was noticeable throughout the two succeeding phases of occupation. The banks at the sides were 0.3-0.4m. higher than the earliest floor level (illus 117), and the nature of this relationship was particularly clear at the building's west end. The dimensions of the building were *c* 5.4m x 4.4m (the latter being the width between the banks). Barely any evidence of a structure survived, although three smallish postholes were recorded at the western end of the building, and a larger one at the NE corner, which may have had something to do with a wooden superstructure. There was no evidence which could be used to indicate where the entrance had lain.

Internal features consisted of a massive central fire-pit

illus 116
Interpretation of structures in Phase 2: *skáli* and *eldhus* with the *dyngja*.





illus 117
Floorplan and reconstructed profile of the Phase 2 *dyngja*.

illus 118
Plan of the pit-house at Stedje, Sogndal, Norway (from Mårtenson 1993).

(J105), with its associated soakaway (J95b), and a rectangular wall-hearth (J108) abutting against the north bank. There were also clusters of stake-holes at the western edge of the flooring and east of the hearth-pit (illus 117a). The flooring (J107) was of trampled clay and ash, with some areas of paving at the lowest level.

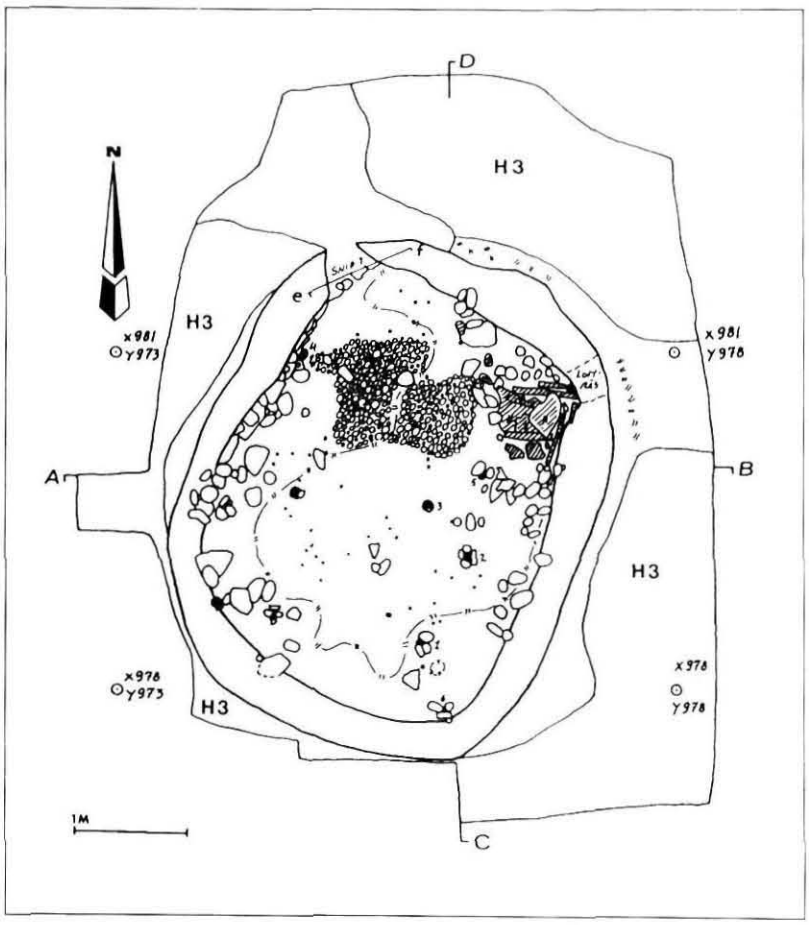
COMPARISONS FOR THE SUNKEN BUILDING

What could have been the use of this smallish, slightly sunken and rather clean building, with two remarkable hearths of different types? The sunken nature of some Norse dwelling-houses occasionally appears in the archaeological record. At the site of Herjolfsdalur in the Westmann Islands in Iceland it appears that 'all the houses had lowered floors, and this indicates that the inner spaces of a house were formed by sinking the floor level before work began on the wall and roof-bearing structures' (Hermanns-Auðardottir 1991, 23). The buildings were mostly 'hall-like' houses or longhouses and not sunk very deep except for Room VII, a food-preparation room, which appears to have been 0.7-0.8m deep, and according to the excavator a real 'pit-house' (*grophus*) (1989, 71). She claimed however (not without much adverse comment) that the site was pre-Viking, extending back to the 7th and 8th centuries.

Pit-Houses

Small sunken buildings with some particular function have been excavated in Iceland, and recently in Norway, dating from the late Viking Age. Similar sunken houses, associated with weaving and usually known as *grubenhäuser* are well-known from north Germany and southern Scandinavia in the Migration period (the 5th-6th centuries AD) as well as from Anglo-Saxon England. Those excavated at Oddernes in southern Norway are rather typical, dimensions being roughly 4.0m x 3.0m and 0.45m deep, but with insubstantial hearths and very few finds (Rolfsen 1976).

Viking-Age examples from Scandinavia are less plentiful, and until recently were barely represented in the archaeological record in Norway. Excavations at Stedje in Sogndal have now produced a classic example of a



illus 119
Plan of the pit-house at Granastaðir, Iceland (from Einarsson 1994).

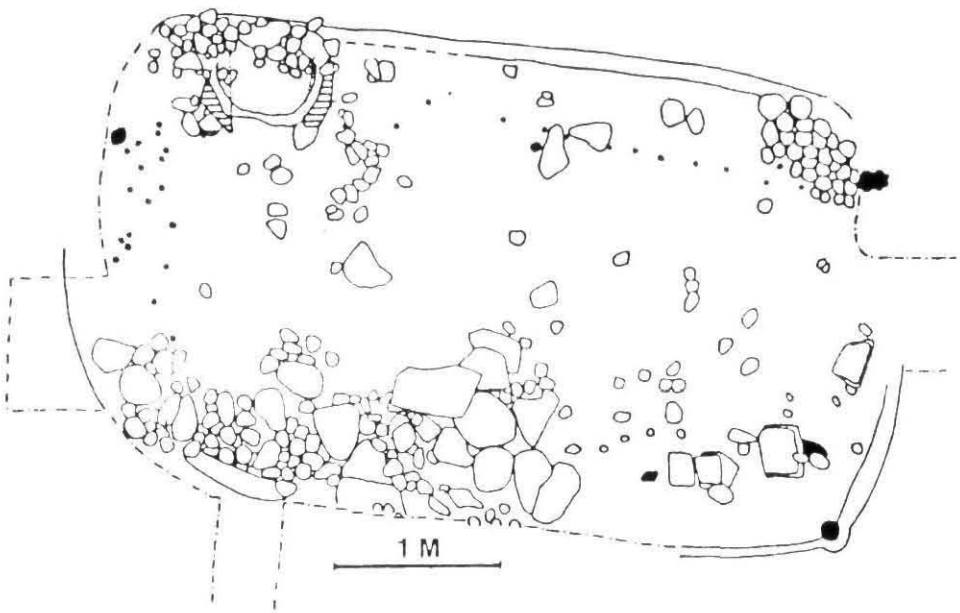
sunken-floored building (*grophus*), of roughly rectangular dimensions (5.6m x 4.8m) and with roof-supporting posts near each corner as well as wall posts which probably supported a plank wall (Mårtensen 1993; 1997) (illus 118). It had a stone-slab hearth built into one wall and the finds (72 loomweights and 15 spindle-whorls) prove incontrovertibly that it had been used for textile activity[1].

Sunken-floored structures have been found in several different locations in Iceland, dating from the early centuries of the settlement. These are thought to have functioned as either bath-houses, or weaving-houses, or both (Olafsson 1992). We also have the remarkably interesting written evidence for just such a structure being used as a bath-house in the famous passage in *Eyrbyggja Saga* which describes the fate of the troublesome berserks, who were killed emerging from the bath-house at Hraun. The description of the bath-house specifically says that: 'It was partly below ground level, and immediately above the fire-place there was a skylight for pouring water through from the outside' (trans Palsson & Edwards, 78)[2].

Excavations at Hvitarholt have uncovered five small pit-houses at the farm settlement, one of them with a covered drain leading outside through the wall, and they were generally interpreted as bath-houses (Magnusson 1972). At Grelutottir there were two, the largest measuring 4.2m x 2.2/2.5m and 1.2m deep (Olafsson 1980, 73). The more recently excavated pit-houses at Hjalmsstøðum and Granastaðir on Iceland were dug down *c* 0.75m and 0.6m into the ground respectively. The first measured *c* 4.5m x 2.5m, the second 3.5m x 2.99m internally, both with rounded corners (Olafsson 1992, 51; Einarsson 1994, 75-6). The Granastaðir pit-house (illus 119) was surrounded by a marked earthen bank, which would appear to bear some similarity to the north bank (P2) at the Biggings (illus 117b). All of these examples have postholes, mostly around the periphery, although Grelutottir I was more rectangular and had them nearer the corners. These were for supporting a roof which probably came down low over the turf walls. The most striking internal features are stone fireplaces or ovens. At Hjalmsstøðum there were two large ovens, one in the NW corner and the other against the southern wall, under

[1] The author (BEC) is grateful to both Mona Mårtensen, and Trond Løken for providing generous amounts of information about the *grophus* at Stedje and other pit-houses in Norway.

[2] The author (BEC) is grateful to Paul Bibire for drawing this description to her attention.



illus 120
Plan of Hjalmsstøðum, Iceland, showing the stakeholes (from Olafsson 1992).

a mound of cracked fire-stones (illus 120). The former was 0.3m high, made of three large flat stones and with one open side towards the room. It was 0.8m broad and 0.6m deep, and said not to be of the sort found in a dwelling-house (Olafsson 1992, 47). Finds were few but of a category which supports the interpretation that its use had been for women's activities, particularly wool-working: there were some spinning-whorls, a knife, a broken sherd of steatite (used for a loom-weight?), a stone lamp and an iron wool-carding tool. Recognisable finds at Granastaðir were primarily loomweights and spindle-whorls, while Grelutottir II produced 13 of the latter (Einarsson 1994, 78; Olafsson 1980, 76). These clearly functioned as weaving houses.

Clusters of stake-holes are recorded in all these pit-houses in Iceland and have been thought to have something to do with wooden structures such as benches (see Ill.17 in Magnusson, 1972, where they are described as being 2-4cm in diameter). Similar small holes found in one corner of the earth floor of the 10th-/11th-century house on Viðey, Iceland, were interpreted as marks left by the supports of an upright loom (Hallgrimsdottir 1991, 124). However those found at Hjalmsstøðum (illus 120) have been given a novel interpretation. Over 200 of them were recorded there (in the lower floor level) and grouped at the west end, around the centre of the room on the north and south sides, but not along the north or south walls. There were very few at the east end where the door is thought to have been. They were 20-50mm in diameter and 50-300mm deep. Guðmundsson's innovative suggestion is that these are the marks left by the long distaff which the women had stuck into the ground in order to steady the distaff while spinning–he supplies some medieval drawings which indicate how it would have been used.

It is difficult to know what other explanations for the stake-holes in the Phase 2 building at the Biggings (mentioned above) could be suggested. There were ten recorded at the west end, underlying the stones of the later west gable wall (J22) and 14 to the south of the fire-pit, in front of the south wall (illus 24a above). They were 20-40mm in diameter and ranged from 21.5-120mm deep, and thus of similar dimension to those recorded at Hjalmsstøðum (it is not known whether the greater depth recorded there is normal or exceptional). The interpretation of such stakeholes is as great a problem in this instance as in the Icelandic examples, where guesses about internal features are not very convincing. If they could be interpreted as being in some way connected with textile manufacture as they have been in Iceland, then the clustering would presumably be explained by the location of the sitters or looms. If that were the case, the 10 clustered at the west end would preclude the entrance to the Phase 2 building being in the west gable.

THE SUNKEN BUILDING: DISCUSSION

No such buildings have previously been recorded on Norse sites in the Northern Isles. The closest similarities between the range of excavated examples in Iceland and Norway, and the early Phase 2 building at the Biggings would appear to lie with the *jarðhus* at Hjalmsstøðum and the *grophus* at Stedje in Norway. The latter is closely comparable in size to the Biggings structure, and thus of rather a different category from the smaller Icelandic examples. A number of factors suggest a similar usage for such buildings: the evidence of a floor having been dug down 0.3/0.4/0.5m below ground level; a source of heat coming from a large corner oven or, in the case of the Biggings and Stedje, a wall-hearth; the smallish post-holes providing some evidence for the above-ground structure;

and the rather limited range of finds. In the case of Hjalmsstøðum (but not at Stedje) there were also the mysterious small stake-holes in various places on the floor.

As regards dating, there is close correspondence with Stedje, dated to the late Viking Age or early Middle Ages from two radiocarbon estimations (cal AD 810-910; 940-1100). The broad bracket for pit-houses in Iceland is similarly 10th century, with use into the 11th, and dating from the oldest period of the farms where they are found. It has been suggested that sunken-floored buildings were the initial type of dwellings constructed by the first settlers on Iceland before the normal long-houses, barns, byres and storehouses of the permanent farmstead were established (Einarsson 1994, 110)[3]. They seem not to have been built after 1200, and may indeed have been replaced by *stofa*-type buildings (Agustsson 1982, 255). Their use is poorly-documented from this early period but they may represent the buildings referred to in later saga sources as *dyngja*, a term translated into English as 'lady's bower' (Cleasby-Vigfusson)[4]. The women used them for weaving activities[5] as well as for bathing.

The close conjunction of two sources of heat–both of them substantial–which we have in the Phase 2 east building is rather unusual, although pit houses with two hearths do occasionally occur in Germany and south Scandinavia (Mårtensen 1997). At the Biggings it seems very unlikely that both were used at the same time unless for completely different functions. Certainly they are both quite different forms of heating, and it seems very likely that the wall-hearth (J108) was original and the central fire-pit (J105) replaced it. It is possible that the wall-hearth could have been recessed into the north bank (the later covering over of the wall-hearth made it difficult to be certain about its exact position in relation to the north side of the building in Phase 2) (illus 26 above). It compares quite closely with the fire-place in the bath-house at Grøf, Iceland, which was 'built into' the wall to the left of the door (Eldjarn 1965, 16)[6] and the dimensions of which were 1.1m in depth to the front-most stone and 0.4-0.5m in width (1.1m x 0.8m for wall-hearth J108). The problem of what such hearths were used for is not easy to solve, and is the subject of some discussion in Norway[7]. Maybe hearth J108 was too open–without the stone slabs at each side and on top–to be considered a sauna oven, where water was sprinkled on heated stones and on the walls of such a fire-place in order to produce steam. Nor were there any of the small stones which are recorded in connection with most of these oven hearths (Mårtensen 1993, 11).

The large central fire-pit (J105) which probably succeeded the wall-hearth was of quite different character. It **may** have been associated with bathing activities, for it must have produced a large body of heat: its careful construction, with paving stones set in clay forming its base, was clearly devised for some functional use (illus 25 above). The amount of peat ash in and around this fire-pit, some of it in brilliant hues of orange and vermilion-red (col illus 11), and the degree of burning on the stone surrounds, provided vivid evidence of the extent of its use and the intensity of the heat engendered in the pit. The small amount of iron and slag, and the whetstones found in the fire-pit could suggest its use in some light smithying activity such as sharpening tools/weapons.

On the basis of these two very different hearths it is likely that the functions of the Phase 2 period structure of the east building at the Biggings were many and various. They also suggest that we should divide the phase into two, an early and a late. The dates obtained from radiocarbon estimations for the whole of Phase 2 span the 11th, 12th and early 13th centuries (discounting the anomalous early determination from GU-1604). The earlier part of this period fits in with the current dates for the few excavated Norwegian and Icelandic buildings of *dyngja* type. It should be noted however that buildings called *dyngja* were still in use in some Norwegian farms in the early 14th century, for such buildings are listed in an inventory from the farm of Kvåle in Sogndal in 1314 (*DN*, vi, no 84). Oye (1986, 412) translates the term as *vevstova* = 'weaving-house'. The eastern Phase 2 structure in its earliest use will therefore be interpreted as a building for specialised activities such as weaving and light metal-working, with the possibility that it may have functioned as a bathhouse at some time. This accords well with the *dyngja* type of building associated with Icelandic farms of the Settlement period, hence the use of this term for the Phase 2a building.

[3] It should be noted that Hermanns-Auðardottir warns of the mis-identification of slightly-sunken buildings as pit-houses, when in fact wooden or turf buildings can have sunken floors (1989, 71).

[4] This is not quite the same usage as 'bower' for certain buildings in Anglo-Saxon England (OE *bur*) which seem to have been separate chambers for the private use of the lord's family (see discussion by G Beresford 1987, 59).

[5] Such a bower appears in the scene of Darraðar's vision in Caithness after the battle of Clontarf (recorded in *Njal's Saga* ch 157). He saw 12 riders approach a women's bower (*dyngja*) and looking through the window he saw Valkyries with a loom weaving men's fate with entrails for warp and weft, and heads for loomweights.

[6] This bath-house is built out from the rear of the cluster of rooms and was reached by a passage-way leading through the centre of the building. It is thus a quite different type of bath-house than the separate *jarðhus*, and the farm at Grøf is thought to date from the 14th century.

[7] See publication of Ildstedseminaret *Åre og Røykovn* (1977), produced by Kunsthistoriske Institutt, Univ Bergen.

PHASE 2B: CHANGE-OVER TO A *STOFA*-TYPE BUILDING

As noted, on Icelandic farms the building of pit-houses is believed to have ceased by 1200 'and it is quite likely that the sitting-room (*stofa*), which could be used by women to carry on their handiwork, partly or wholly replaced the bower' (Johanesson 1974, 340). This is precisely what appears to have happened at the Biggings, where remarkably, the *stofa* was built directly on top of the earlier building, with slightly altered dimensions. At this point the similarity with Icelandic farm-building development ceases, for where a *stofa* has been recognised in Iceland (and there are few examples of them), it was added on to the end of the hall (*skáli*) and entered from inside, as in the classic example at Støng (illus 138 and discussion **8.3.1** below; also Vilhjalmsson 1991, 98). The measurements of the Støng *stofa* (8.0m x 4.5m) are remarkably similar to the Phase 3 *stofa* at the Biggings, which however continued to be a separate, detached building, as the *dyngja* had been. Nonetheless the Støng *stofa* has some useful parallels for comparison, not least the central fire-pit.

illus 121
Fire-pit J105 showing the triangular kerbstone which faced the main entrance (viewed from above).

The construction of the central fire-pit (J105) may be, as already discussed, an indication of the change of building to a *stofa* type, already in the latter part of Phase 2, and a preliminary conversion before the complete remodelling to a *stofa* in the subsequent Phase 3. Although it is not possible to be certain as to whether the central fire-pit succeeded the wall-hearth, we have to regard the two forms of heating as mutually exclusive and therefore that one replaced the other (just as the central fire-pit was itself replaced by the later different hearths). The square, stone-lined fire-pit in the centre of the floor of the *stofa* at Støng measures 0.4m x 0.6m with a depth of 0.5m and has a stone surround at floor level – very similar dimensions to fire-pit J105 which also has the burned remains of a stone surround; the stone facing the door has been clearly shaped to a blunt triangle (illus 121). This is a much more formally constructed hearth than the wall-hearth which it probably replaced. There are very few such fire-pits in the Norse archaeological record[8] and the indication from the parallel Icelandic example at Støng is that such a form of heating is suitable for a building of *stofa* type, and for the uses to which such buildings were put. However at the Biggings we also have the construction of an associated soakaway at this point (J95b: 1.1m x 0.8m and 0.4-0.5m deep; illus 121), which was dug into the floor immediately south of the fire-pit, a feature not present at Støng.

The dimensions of the Phase 2b replacement building to the *dyngja* were the same width and definitely longer. The width of 4.8m is reasonably firmly defined by the wall benches and evidence of flooring. An earth bench (0.4-0.5m wide) was reconstructed on the NE side, covering up the wall hearth (J108), while the SW bank of the *dyngja* was converted into an earth bench (*c* 0.5m wide). The construction of the west gable was clearly defined by the stone sill foundation (J22) which must have carried a wooden superstructure and doorway, but this is probably to be associated with the Phase 3 *stofa*, for the earth flooring (and some wood) from Phase 2 was recorded underneath this west gable wall. The length was increased to *c* 7.0m.

8.2.2 PHASE 2 STRUCTURES AT THE WEST END: THE *ELDHUS* AND *SKÁLI*

(illus 36)

Structural evidence for Phase 2 on the west side of the site is confined to a fire-pit [Hi20] and a flue [Hi7] dug into bedrock, the former partly surrounded by a large deposit of ash. There are no walls, but a cut in the

[8] That in House 1 at Jarlshof is somewhat different in scale and function, and appears to be a cooking-pit. The huge central fire-pit in House V1 on the Brough of Birsay must be connected with some specialised bath-house function for the earldom elite (see Crawford 1987, figs 52 and 53 for comparison of these two fire-pits).

bedrock and subsoil to the north and east of the fire-pit hint at the possible wall alignments (NE/SW and NW/SE). In the SW of the area (Trench K), a large circular depression, interpreted as a post-hole [K155] and a large spread of ash are all that remain of the Phase 2 stratigraphy and to the SE there are the sparse remains of a fragment of a hearth [EJ22] with some ash and stones [EJ20], and the intrusion of a pit dug at the end of this phase or at the beginning of Phase 3.

INTERPRETATION (illus 116)

Some of the stratigraphy at this end of the site was not completely excavated or bottomed therefore this interpretation must be considered as tentative. However, it is quite obvious that there were no indications of where walls were located in any of the trenches apart from the possible cut and hard-packed wall-bases in the northern half of the area (Trench H), suggesting that–as at the east end of the site–only wooden buildings existed. The most important question to ask is how many buildings were present at this west end during this phase of the settlement, and to what use were they put.

The three separate areas of stratigraphy at the west end do not at first give a clear indication of the pattern of building. However, if inference can be made from what is known of the eastern *dyngja*, the following could be suggested. The *dyngja* is aligned roughly NW/SE, and following Norwegian farmstead traditions, it is quite likely that the other main building followed the same alignment. A single building, 4.5m wide (approximately the same width as the *dyngja*), could have spanned the archaeological remains in the centre of the area, and attained a length of at least 8 metres (illus 116). Both the hearth and the fire-pit would have lain in the middle of the width of the building and towards either end of it, thus allowing for smoke to percolate out through the top of the gable wall. The flue/drain may have been situated parallel, and close to, the NW gable wall of the building. A larger building than the *dyngja*, it may have formed a *skáli* or hall. The remains to the SW of the area (Trench K) do not unfortunately aid the interpretation of the settlement in this phase, but they may have formed part of a separate structure–an *eldhus*, aligned at right-angles to the assumed *skáli*.

The artefacts from the area of the *eldhus* (Trench K) give an indication of both domestic (food preparation with some spinning) and perhaps some industrial occupation (the bar mould). Few of the finds were found *in situ* in the ash or posthole. The area (Trench H) of the *skáli* provided some finds but the bakestone (present after AD 1100 from evidence in Oslo - see **7.2.3**), and the sherds of locally made coarseware (usually of cooking pots - see **7.3.1**) suggest, with the fire-pit and the hearth, more emphasis on domestic activities, especially baking and other food preparation (if not consumption).

The paucity of both structural and artefactual remains at this end of the site, make the above interpretation of what buildings could have been present at the Biggings extremely tentative. Comparison with the few contemporary buildings known, for example at Jarlshof (Hamilton 1956) and the Studio Site at Beachview Birsay (Morris 1996, Chapter 7), do not further the understanding of the pattern of building present on Papa Stour, as the nature of the structures is very different. The paucity of contemporary buildings is due to the continuation of medieval building on the same site, as is seen at the Biggings itself and as experienced at Skaill, Deerness, Orkney (Buteux 1997, 265).

CONCLUSIONS: PHASE 2 WESTERN STRUCTURES

Contemporary with the *dyngja* there are possibly two other wooden structures at the west end of the site. Phase 2 provides evidence for the first structural remains at the Biggings. The function of those remains are uncertain: the hearth and pit to the SE may have formed, together with the remains to the north–the fire-pit, ash heap, flue or drain–a rectangular hall or *skáli*. Cooking may have been carried out there but this was probably not the main function of the building. The remnant structure in the SW produced the greatest number of artefacts to be found at this end of the site, and of the site as a whole during this phase (39 artefacts). Whatever the building was, its function was varied and it may have been the location of the *eldhus*. Comparison of this structure with its Phase 3 replacement (where the structural evidence was better preserved), and the fact that it was probably detached from, smaller than, and at right-angles to, the other buildings of this phase, may aid its interpretation as the cookhouse.

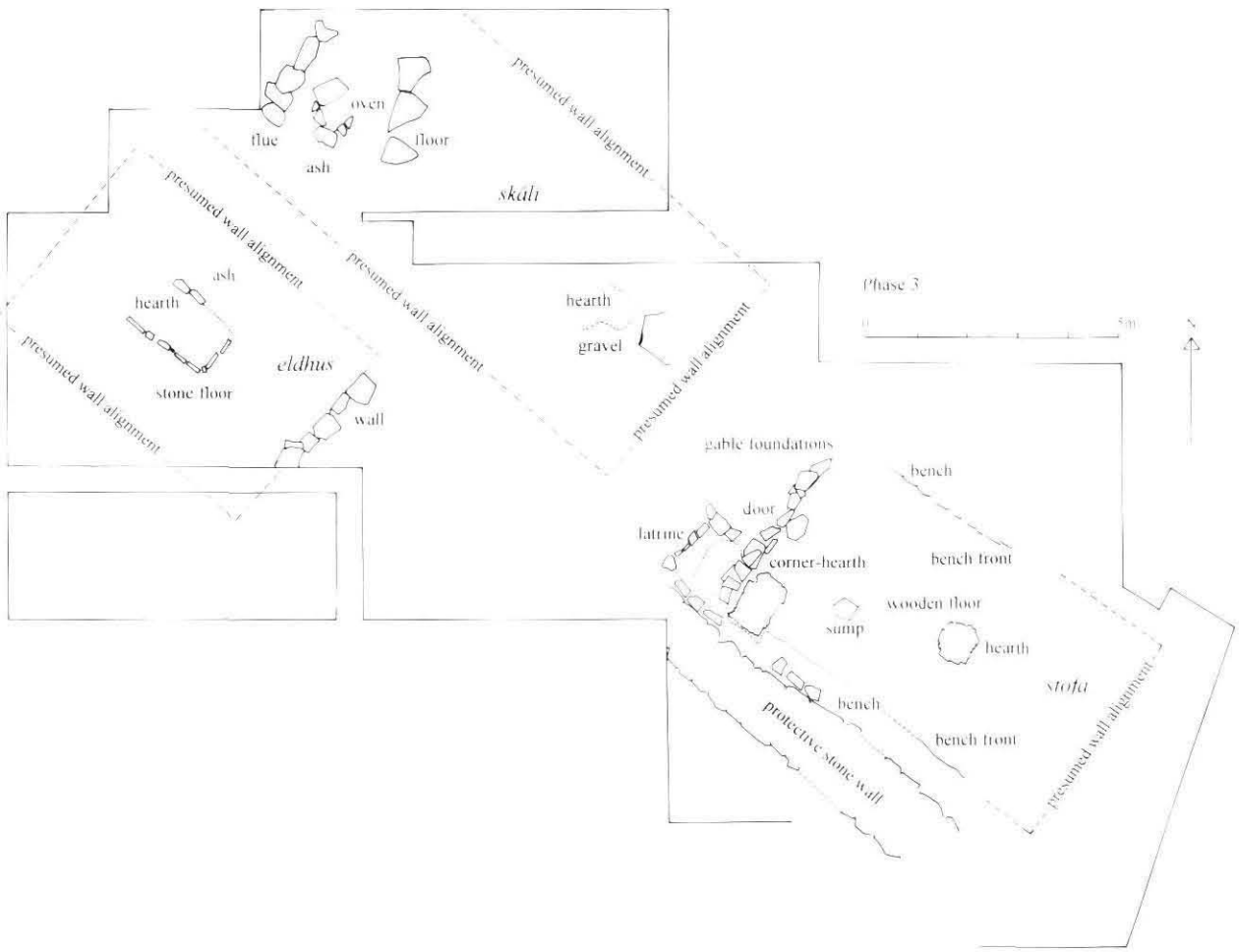
8.2.3 HISTORICAL CONTEXT FOR THE PHASE 2 STRUCTURES

The most helpful parallels for the earliest, sunken, building at the east end, the *dyngja*, have been found in the Icelandic excavated farms. This is not so surprising. Various items of information in the sagas give plenty of evidence of contacts with Iceland at the earldom level; as for instance in 1021 when Earl Einar was murdered by Thorkell Amundsson, clearly aided by 'an Icelander called Havard from the East Fjords' (*OS*, chap 16, 43). In the late 11th century Earl Erlend's wife Thora was of the line of the famous Icelandic family of Side, and links between the earls of Orkney and southern Iceland were close in the late 12th century, when comings and goings

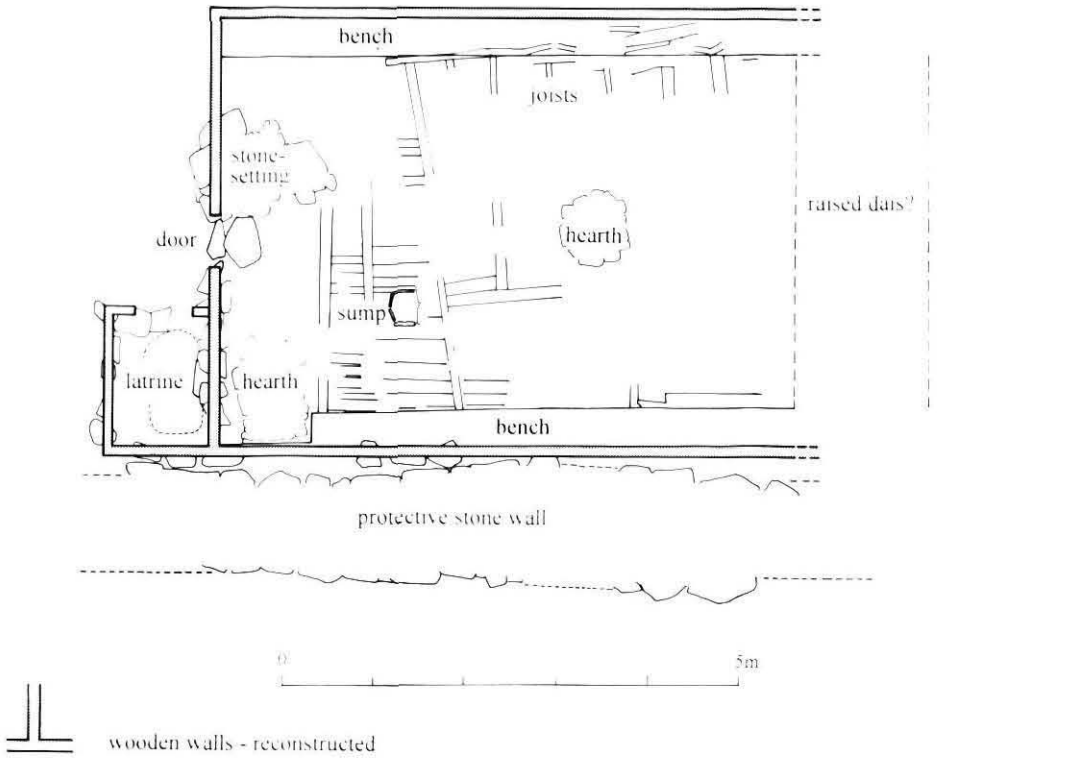
were recorded between prominent Icelanders of the Oddaverja family and members of the earldom circle (*OS*, 13; Thorlaksson 1979, 66-7). There were negotiations over the marriage of Earl Harald's daughter, Langlif, to Saemundr Jonsson, which, however, came to nothing. Pall Jonsson, his brother (both of them foster brothers of Snorri Sturlason) spent some time with Earl Harald around 1175-80. As a future bishop of Skalholt he would doubtless have been instrumental in fostering the cult of Magnus Erlendsson, and Papa Stour was an island which, as has been argued, probably had associations with the earldom saint (see **2.3** above): it was a natural place at which to stop en route between Orkney and Iceland. The farm at the Biggings was most probably a possession of the earls or members of the earldom *aett* (as suggested above, **2.2**) whose close connections with Iceland at this time could easily have been a source of influence on developments in house-style on their estates, linked to similarities of life-style. The lack of evidence for a sunken building of similar proportions from Birsay (Brough or Beachview) (CD Morris 1996 and forthcoming) reflects probably the partial nature of the excavation of these complex earldom sites.

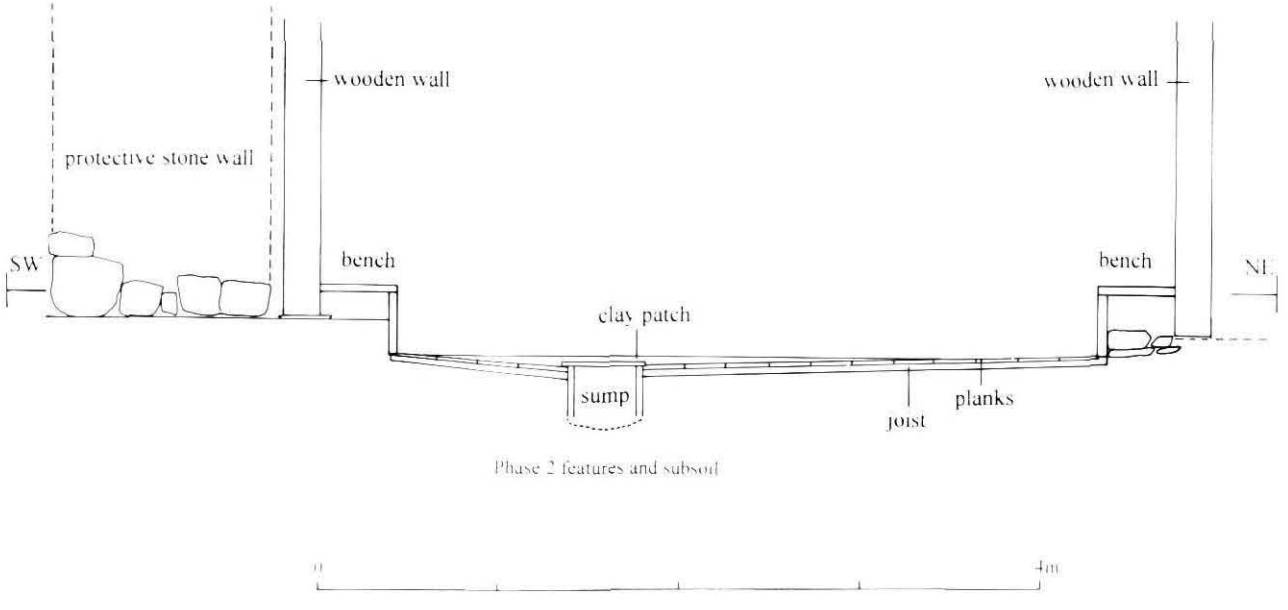
8.3 PHASE 3: WOODEN AND STONE BUILDINGS OF *c* 1200 - *c* 1400

This phase is dominated by the reconstruction of the Phase 2 *dyngja* as a *stofa* whose internal fittings, including the benches and the floor, were of wood. It has a corner hearth (J27), located in the SW corner. The Phase 2 structures in the west are probably replaced or rebuilt, but continue their earlier function as *skáli* and *eldhus*. The main food preparation and cooking probably took place in the *eldhus*, which had a large kerbed hearth, and the baking at the NE end of the *skáli* where an oven was situated.



illus 122
Interpretation of structures in Phase 3: *skáli* and *eldhus* with the *stofa*; the privy (latrine) visible in the centre.



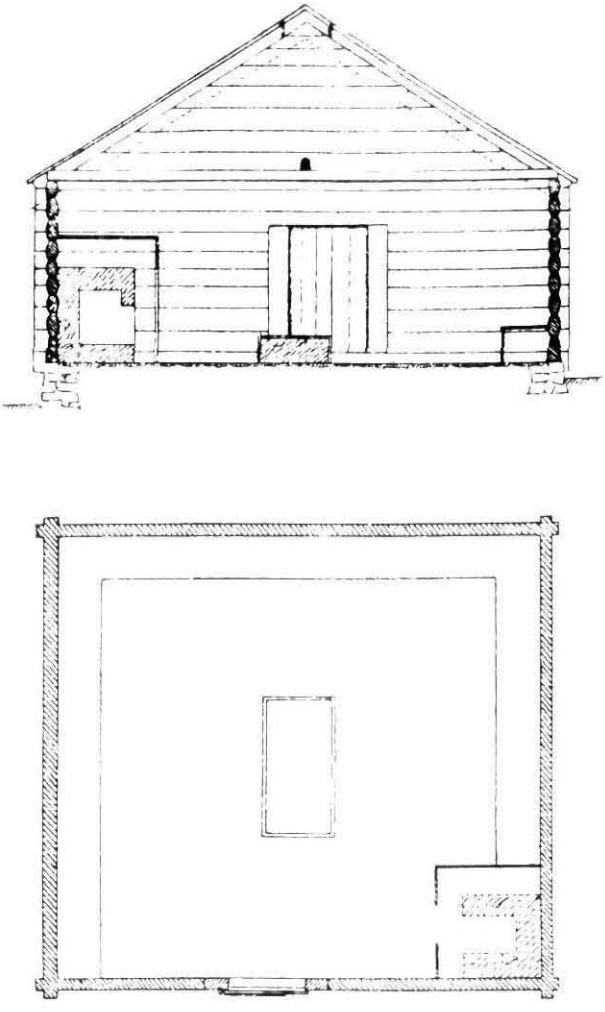


illus 123
Floorplan and reconstructed profile of the Phase 3 *stofa* with adjacent privy (latrine).

8.3.1 THE EAST END OF THE SITE: THE *STOFA*

(illus 123)

At some date in the early 13th century, the east building underwent a re-modelling along classic *stofa* lines (illus 123) according to the fashion current in Norway at the time (illus 124). It must have been a substantial wooden building from the dimensions and solid construction of the west gable wall (J22) (a row of large flat stones of one or two courses *c* 0.3m high). At this phase it was possible to recognise that the main entrance was located in the west gable. There was no indication at all of the dimensions and structure of the doorway, which was in the centre of the west gable wall. However, the location of the large stone (86) inside the building appeared to have functioned as a threshold stone in the middle of the west wall. The stone setting to the north side of this threshold (84; 85) was also suitably located for the placing of liquid containers just inside the door.



illus 124
Section and plan of a rural log-built *stofa* existing at Finne, Voss, west Norway, with central hearth (ON *åre*) and corner fire-place (ON *hjørne-ildsted*) (drawn by Blix in 1888 and taken from Laerum & Brekke 1990, fig. 4.10).

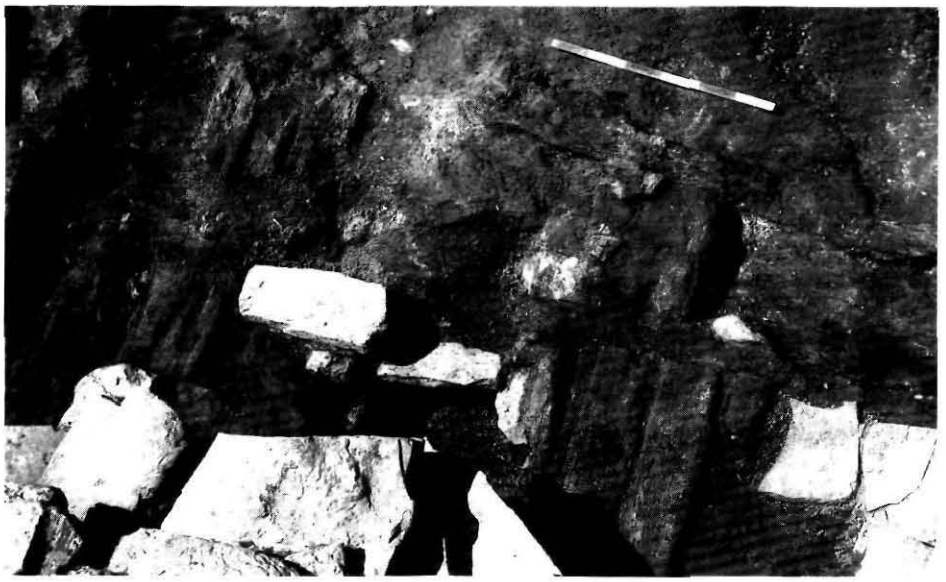
INTERNAL FEATURES

The most remarkable survival of the Phase 3 building was its wooden floor (illus 125) which ran lengthways between the east and west gables. The underlying joists ran across from bench to bench (illus 126). Fragments of wood survived to suggest that the benches on the south and north sides had been covered with planks in front (illus 127), while several of the wooden pegs which held the front planking securely in place were still *in situ* (illus 107 above). There was no evidence of a bench against the west gable wall, and later disturbance at the east end precluded any recognition of a *pallr* (dais) which was usually in that position, opposite the main entrance[9]. The dimensions of the wooden floor were 30.7m^2.

The fireplaces in this new building were of quite different type and location from those in Phase 2. The central hearth-pit and wall-hearth were replaced by a corner fireplace (J27) (*hjørneildsted*) and a central flat-paved hearth (L30) or *åre*. It is unlikely that these two were contemporary: possibly the series of flat stone hearths built along the central axis (illus 128) was part of the original remodelling of this building, and the corner-fireplace (J27), in the SW corner near the gable wall, was a later addition (illus 129). The corner fireplace is similar in size and dimensions to those found in the wooden houses excavated at Oslo (Gamlebyen), and located in exactly the same position too (Sørheim 1989, 99, 109: see illus 135 below). The sump (J95b) recorded in Phase 2 was apparently maintained in this phase, partly lined with timber and covered with removable stones.

A single radiocarbon estimation from a floor plank gave a date-span of cal AD 999-1214 (GU-1775). It is not possible to know whether the floor was constructed of newly-felled wood, or whether the planks were re-used and therefore not new when taken to Papa Stour for this

[9] The best-preserved *pallr* from excavated wooden houses in Norway is that in the *årestua* at Borgund, raised 0.2-0.3m above the floor on a stone base and planked (Herteig 1975, 33; Sørheim 1990, 125).



illus 125
View of the wooden floor (from above); scale in 0.1m intervals; from E.

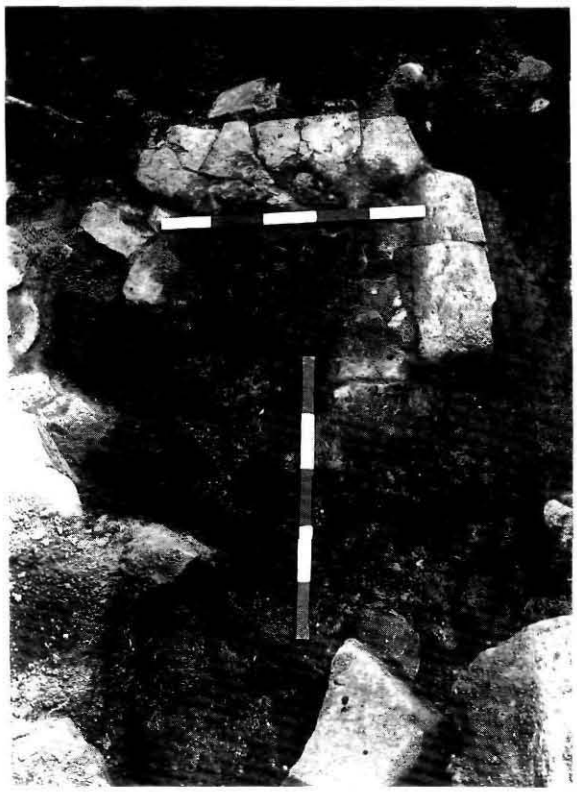
illus 126
View of wooden floor, with joists; from NE.

stofa re-modelling. The identified floor planks are all of pine, presumably imported from Norway. There is no doubt that the floor was used for a long time. Its long-lived nature is evident from the stone flags laid on top of the planks in Phase 4 in various locations (illus 140 below), and the fact that the planks were never lifted and re-used when the room changed function.

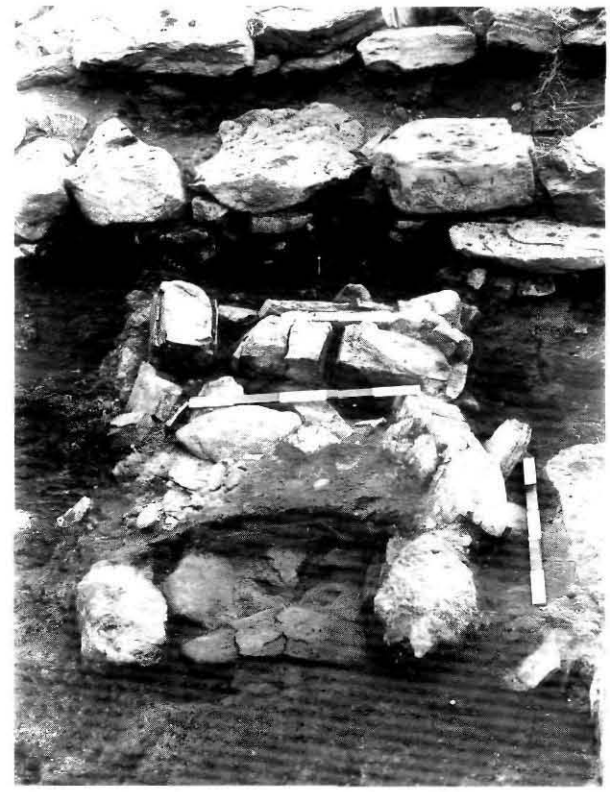
EXTERNAL FEATURES

A small annexe (measuring *c* 1.3m x 1.5m) attached to the south end of the west gable is interpreted as an outside privy (col illus 12). The flat sill stones (J21) suggest that it was built of stave construction surrounding a pit, filled with stones and capped with gravel. A privy is not a feature recorded often on rural medieval sites, nor even from urban excavations. There is a well-preserved late 11th-century example from Dublin, outside the east end of a wooden house which measured 2.6m x 1.0m (the pit itself being 1.6m x 1.0m) (Murray 1983, 9; illus 130). At Bryggen several were found from 12th-/13th-century phases, outside and in passages between buildings (Herteig 1994). The comment is made by Herteig that privies are not commonly found in medieval urban contexts, and they were rare in rural areas in Norway until the 19th century (1994, 295, 299). Garderobes were

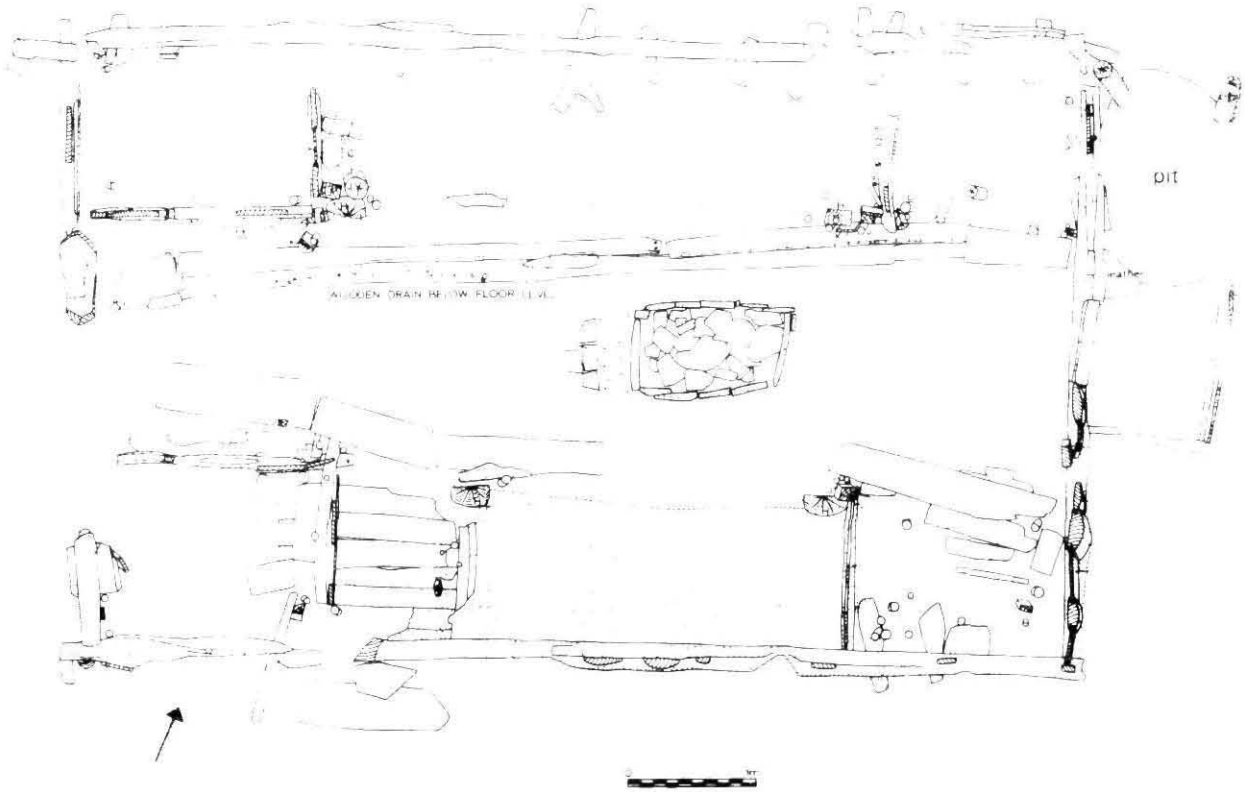
illus 127
Plank in front of the bench; scale in 0.1m intervals; from S.



illus 128
The central hearth or *åre* JL30; scales in 0.1m intervals; from NW.

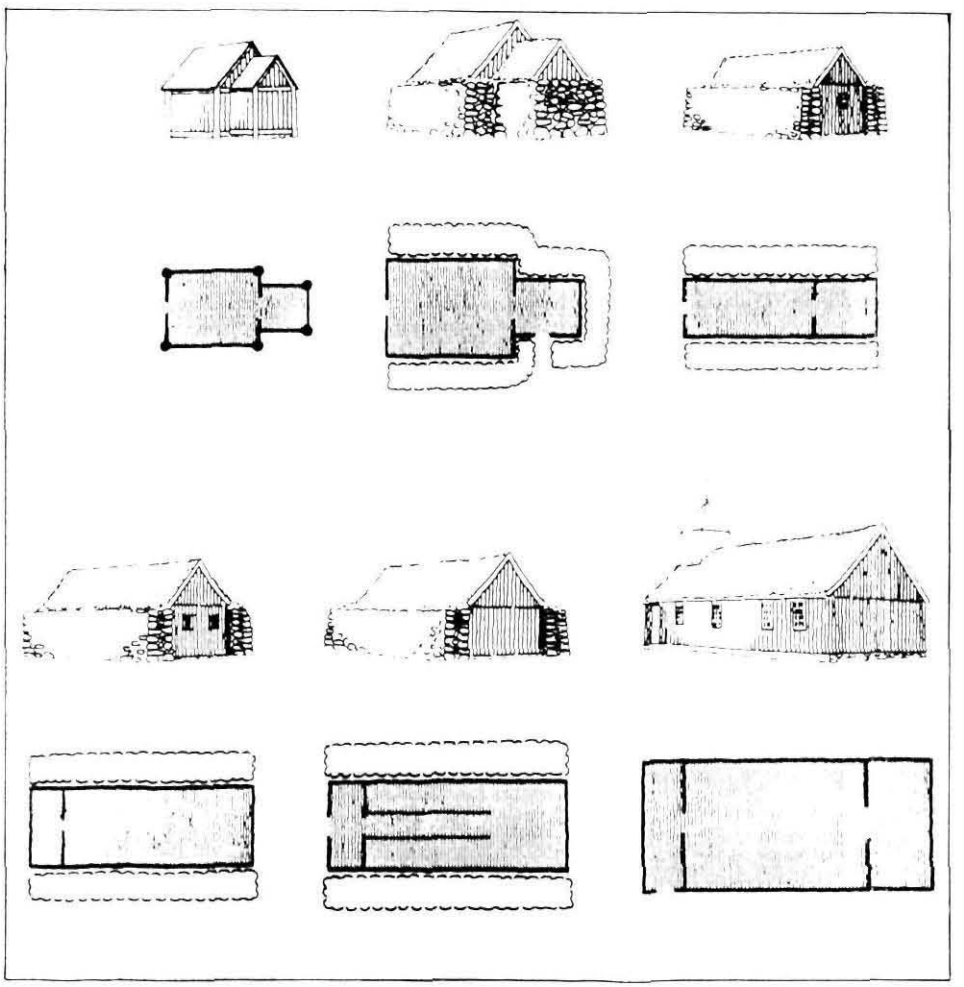


illus 129
The corner hearth J27 half excavated; scales in 0.1m intervals; from NW.

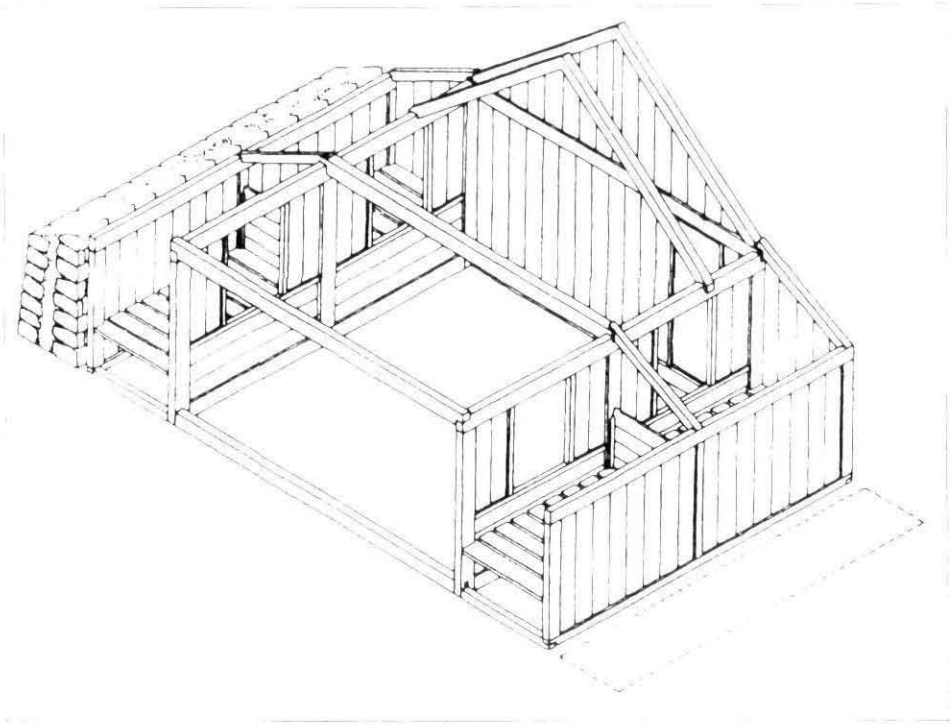


illus 130
Plan of the 12th-century wooden house (phase 1, CP85/1) excavated at Wood Quay, Dublin, showing the central hearth and privy pit, with the remains of the wooden shelter at the east gable (from Murray 1983, Ill 38).

illus 131
Protective wall J13 and the Phase 3 floor, gable foundation and corner hearth; scales in 0.1 m intervals; from S.



illus 132
Plans and reconstructions of the various phases of the excavated church at Sandur, Faeroe. The protective stone walls were found in most phases (from Krogh 1975, 52-3).



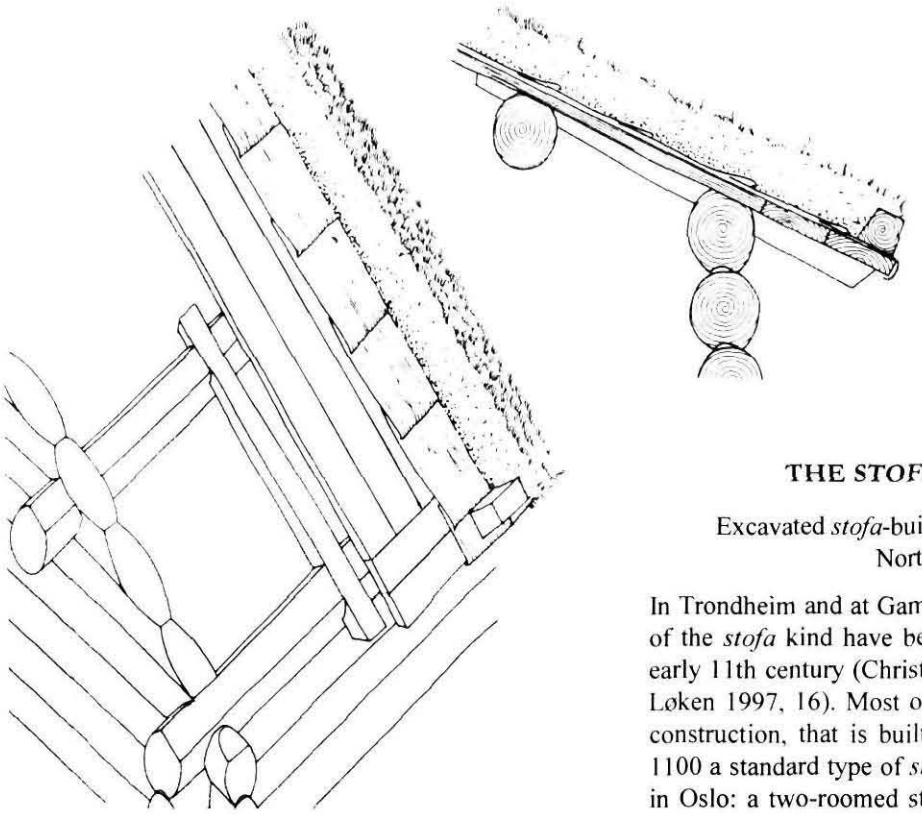
illus 133
Reconstruction of the structure of the Faeroese *stofa*, with outshot box-beds and location of protective stone walls shown (after Stokland 1996, fig 47)

found in a rural context at Goltho, Lincolnshire, attached to one end of the 10th- and 11th-century wooden halls. These are said to be 'without parallel in pre-conquest Britain' (Beresford 1987, 79)[10].

Running along the SW side of the Phase 3 building, including the privy, was a protective stone wall (J13) (illus 131). This was detached from the timber building, and the function of such a well-built wall appears merely to have been to protect the house on its most exposed side from the detrimental effects of the prevailing south-westerly weather (Crawford 1996, 151). Protective stone walls have been found in association with the earliest wooden churches of the Faeroe Islands (illus 132), and are a recognised feature of wooden–always apparently stave-built–houses there into the early modern period (Thorsteinsson 1982, 155; Stoklund 1997, 9, 119) (illus 133). Where the climatic conditions presented problems for the maintenance and conservation of wooden buildings such walls evidently proved essential, and the massive stone and turf walls down each side of present-day Icelandic churches which give them such a distinctive appearance have the same function. Huge stone protective walls (*vernemurer*) are a familiar sight in coastal parts of western Norway (although it has recently been suggested that such a use of stone for the protection of wooden walls dates only from the 19th century: Hjelmeland 1996, 125). Even in the Faeroe Islands it is difficult to know from what period such walls started to be used for dwelling-houses (Stoklund 1997, 119). We can perhaps assume that the protective wall at the Biggings was not contemporaneous with the initial building of the *stofa*, but was an addition to the SW side as the structure became old and started to suffer from the effects of the exposed location of the island.

Roofing structure and materials were also vitally important factors in the buildings of the wet and windy Atlantic islands and these would include several insulating layers of turf, and perhaps stone where such was available. Above the rafters and below the insulating turf it was customary–into modern times–in both Norway and Faeroe to lay several impermeable layers of birch bark (Hjelmeland 1996, 126-7; Stoklund 1997, 62) (illus 134). This of course had to be imported into the Atlantic islands, and we cannot doubt that there would be the same demand for this material in Shetland. The discovery of pieces of birch bark all over the Biggings site provide plentiful evidence -the first such evidence from Shetland- that it was an important material in the roofing of houses of the wealthy in the period during which links with Norway were maintained (illus 109 and **7.5.4** above).

[10] The first measured 5.1m x 2.4m with the pit 2.1m x 1.8m x 0.9m; the second measured 2.4m x 1.8m x 1.5m. There is no mention of the pit fill. At Bryggen the privies were of similar size to the Biggings example and contained moss and a greasy light-brown substance interpreted as excrement.

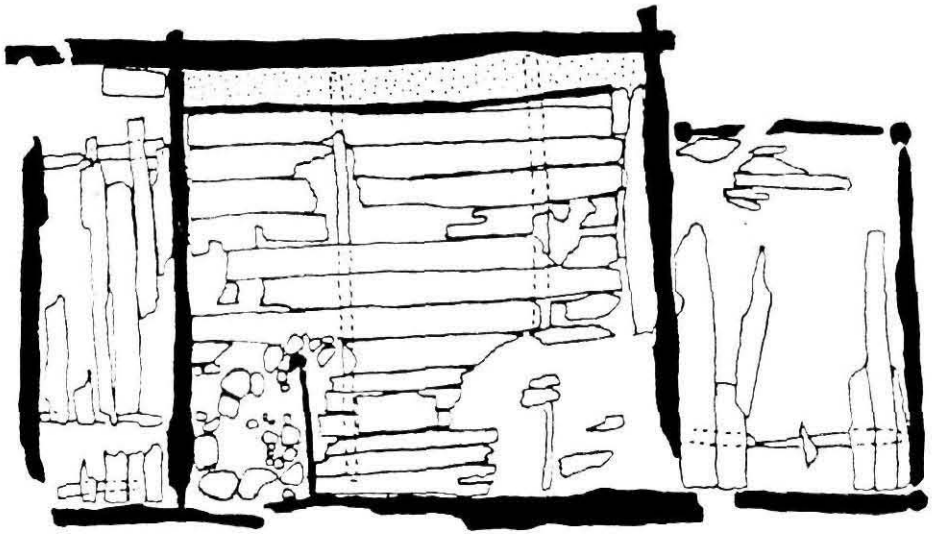


illus 134
Suggested method of roof construction on a log building, showing birch-bark lining beneath turf sods (from Christie 1974, fig 22).

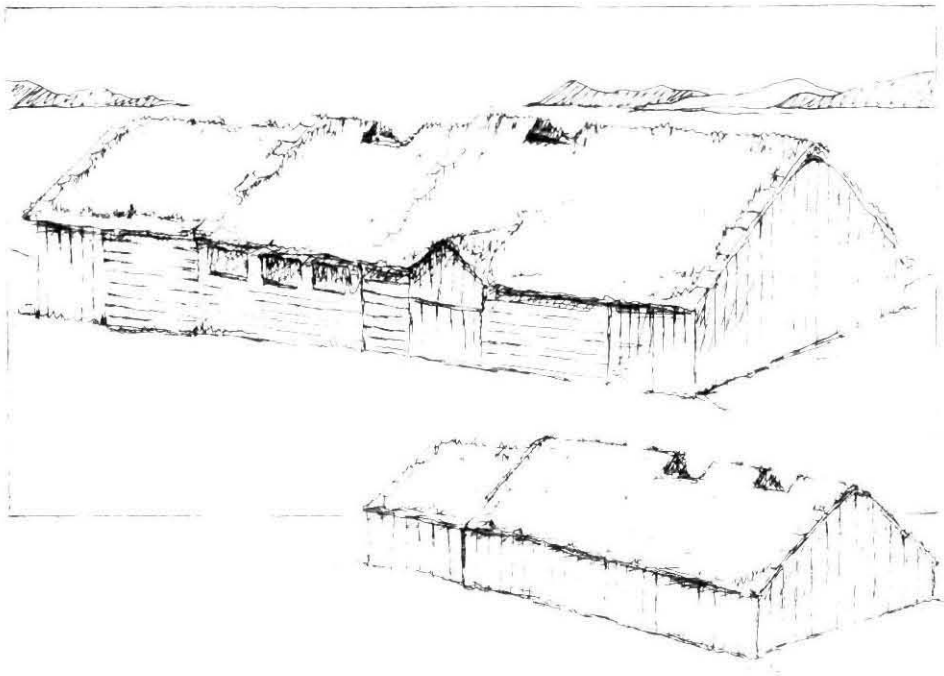
THE *STOFA*: DISCUSSION

Excavated *stofa*-buildings in Norway and the North Atlantic

In Trondheim and at Gamlebyen, Oslo, timber buildings of the *stofa* kind have been uncovered dating from the early 11th century (Christopherson 1992, 73; Fett 1989; Løken 1997, 16). Most of these were of 'lafted' timber construction, that is built of notched logs, and by AD 1100 a standard type of *stofa* building had been adopted in Oslo: a two-roomed structure with an almost square main room and an ante-room through which the building was entered (illus 135). The whole measured on average 7.3m x 5.3m. This was probably developed for urban living and the constraints of building in a densely-settled environment. In rural areas it seems likely that there would have been a slower change from the older long-house to the new *stofa*-type structure although evidence is less plentiful because of the dearth of excavated medieval farmhouses in Norway. At Lurekalven and Høyboen, both in West Norway and abandoned after the Black Death, the different rooms of the dwelling-houses continued to be under one roof, although the structure



illus 135
Plan of log-timbered *stofa* at Gamlebyen, Oslo, dating to the 12th century (from Fett 1989, fig 70). The central room was entered through the porch (on left) and had a stave-built extension added (on right).



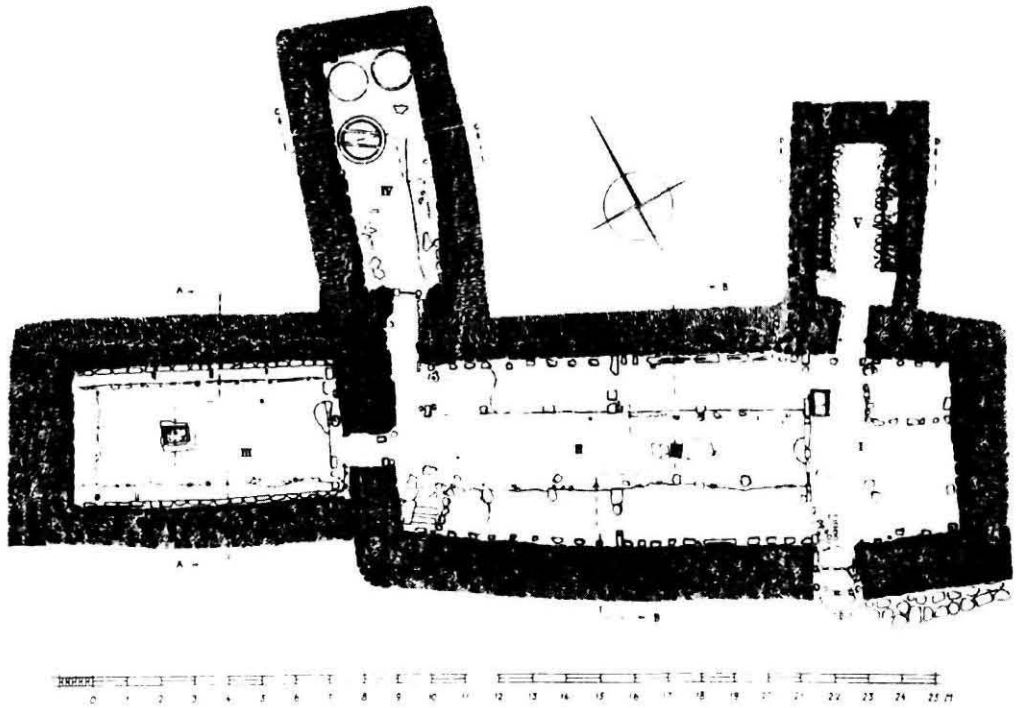
illus 136
Conjectural reconstruction of a rural longhouse excavated at Lurekalven, Nord Hordaland. It shows how the *stofa* (central section) is incorporated within the longhouse alignment, according to the west Norwegian tradition. The exact method of timber construction could not be determined and two possible alternatives (combination stave and lafted and, below, stave only) are shown. (AN Shepherd after Brekke and Kaland in Sulebust 1997).

may have been a mixture of stave-built and 'lafted' construction (Løken 1997, 16) (illus 136). For the clearest excavated examples of rural *stofa* buildings one has to look to Iceland where they are additions attached to the main halls excavated at Støng and Grøf, apparently constructed quite differently to the main halls themselves, although neither of them were of 'lafted' timber, perhaps unsurprisingly. They are both now dated to the 12th century with habitation continuing through the 13th century (Vilhjalmsson 1989, 15; 1991, 98) (illus 137).

These additions are smaller and narrower than the older *skáli* because the method of construction was different. Instead of the three-aisled plan with the roof timbers resting on the aisle posts, the *stofa* had a clear open floor-space and the roof rested on the walls. Although this limited the width of the building it must have made it more open and convenient for moving around. Once log timbering was introduced into Scandinavia in the early Middle Ages the length of the building was probably determined by the 'lafted' method of log construction and the length of logs used for the side walls. In the north Atlantic where the walls were more usually built of turf on stone foundations this was not a determining factor, but the roof-weight was still borne by the walls and *stofa* dimensions conformed to a short rectangle. Despite the absence of log timbers here the concept of the small, enclosed room, separate from the main working and sleeping area, was still adopted, and it was probably lined with wood. In Iceland, for example, where houses were constructed primarily out of turf, perhaps with stone foundations, and increasingly entirely out of stone, there were undoubtedly panelled interiors in some of them (Einarsson 1994, 114-16).

Along the walls of the interior of these smaller buildings were narrow earth-filled benches, usually covered with wooden planks (*moldbenk*), and these remain a feature of the log-built *stofa* (or *stua* as it comes to be called) on medieval Norwegian farms. Usually the surviving examples have a central hearth (*åre*) (compare illus 135 and 124 above), but the excavated houses at Gamlebyen (Oslo) demonstrate a change-over to a corner hearth in the 12th century. However, the famous *årestua* excavated at Borgund, near Ålesund, a large and impressive building with wooden floor and dais at one end still retained a central hearth (Herteig 1975, 32-3) (illus 138).

It is hopefully clear from the foregoing discussion that there is uncertainty in archaeological circles in Scandinavia as to exactly how *stofa* buildings might be constructed in different social and geographical circumstances. In western Norway where suitable timber was not always available the 'lafted' (illus 16a above) method might be replaced by 'stave' or grind structure, that is of planks (either vertical or horizontal) slotted into sill-beams and corner posts (illus 16b above). The 'stave' form of structure was of course used for stave churches, but was also used in west Norway for secular buildings. The earliest houses and warehouses excavated at Bryggen in Bergen were of stave structure, although apparently superseded by 'lafted' buildings *c* 1200. In Faeroe excavated medieval houses of stave type also show that this method of building was used in some of the Atlantic islands. However, the magnificent surviving example of a Røykstova at Kirkjubøur in the Faeroes, dating from the 13th century (col illus 8), proves beyond all shadow of doubt that 'lafted' timber buildings could be and were exported from Norway ready prepared for



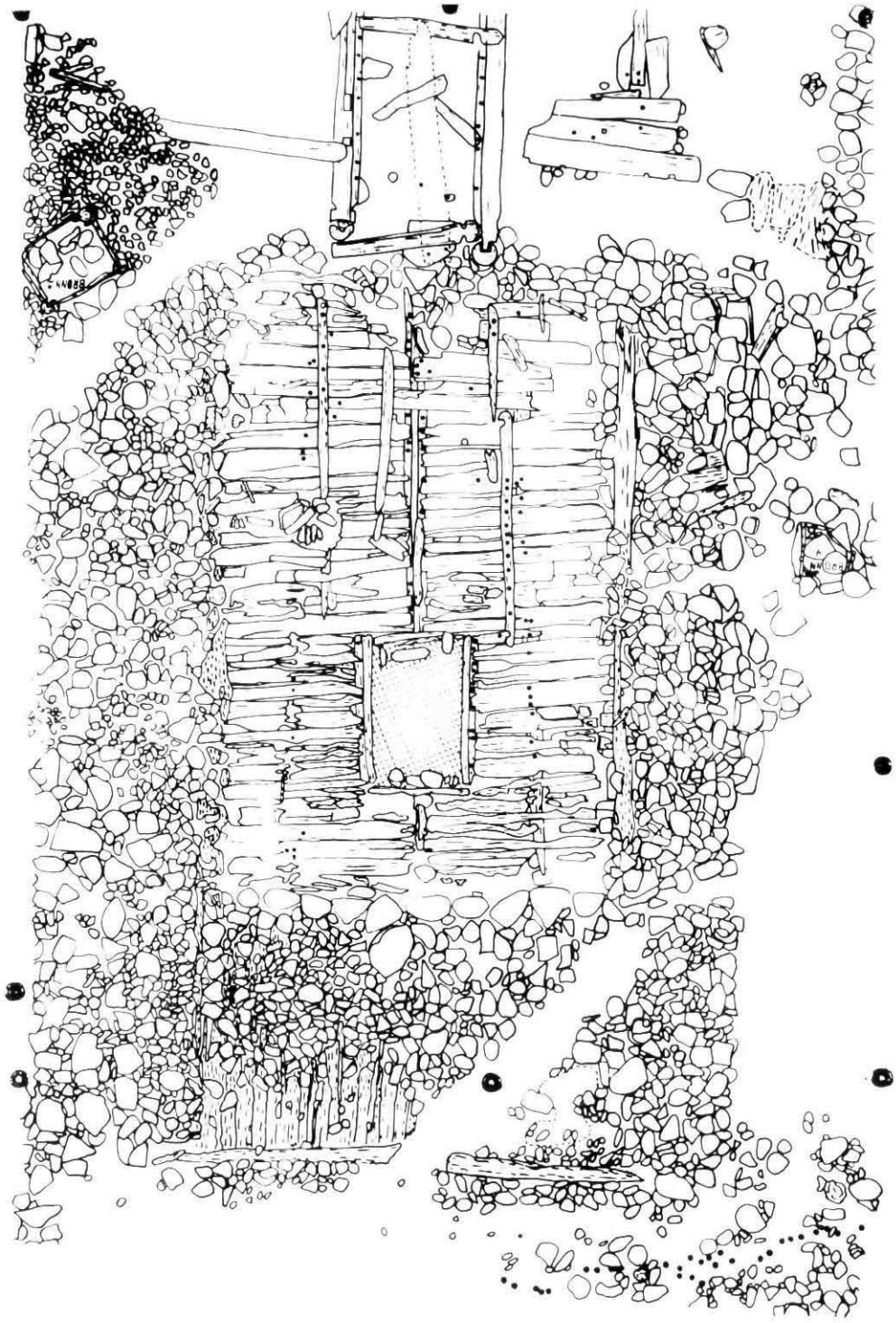
illus 137
Plan of the excavated turf-built farmhouse at Støng, south Iceland. The older *skáli* (on right) was the main living space, and the *stofa* was built on to the west gable in the late 12th-early 13th century (from Stenberger, 1943).

erection in the islands. The import of *Stokkastovur* (as they were called in Faeroese) is recorded from the 17th century (Stoklund 1997, 68). Such buildings, similarly known as 'stockstoves' were also imported into Shetland, the earliest record of which is from 1577, although this trade must have been going on in the Middle Ages (Stoklund 1997, 68, 99, 135)[11].

THE BIGGINGS *STOFA*: 'LAFTED' OR STAVE-BUILT?

The problems of determining the nature of wooden buildings archaeologically are well recognised in Scandinavia (Myhre 1980, 372). Where the structure was of stave construction then post-holes may survive as a very visible feature of the excavation. Where, however, the structure was of horizontal timbers, resting on the ground, there need not be anything surviving in the archaeological record to indicate how the building was constructed if it was totally dismantled. Sometimes the logs or sill-beams would have rested on a stone foundation, but the surviving foundation stones will not reveal whether they supported horizontal timbers or any other form of wooden superstructure. Even walls of stave construction might have used stone plates as foundations for the corner staves and not have left any post-holes (illus 16b above). So the absence of any large post-holes at the corners of the eastern structure at the Biggings cannot be used as evidence that it was never a stave-built structure. As regards the stone foundation of the west gable (J22), it could have supported either a sill beam for plank *or* horizontal notched, lafted, logs. The strange fact of the distinctive survival of this stone foundation –where no others were installed to carry wooden superstructures–may simply be a result of the need to build up the west gable foundation in order to make it level with the banks along the sides.

[11] As Stoklund explains (1997, 135), Jakob Jakobsen's description of a 'stockstove' as he heard it in Unst in the 1890s, and which sounds more like a stave-built structure than a 'lafted' one, could be of a particular Faeroese method of timber construction called *rammevaerk* which in its older form was more like 'lafting'.



illus 138
The *årestua* excavated at Borgund (Møre) with the remains of dias (ON *pallr*) at lower gable and log-built porch at entrance gable. There was no corner hearth or wall-benches in this unusually large example of a wooden *stofa*. Stone rubble from the walls or protective walling lies along the sides (from Hertig, 1975).

It is now recognised–since the excavations of the wooden houses and wharves at Bryggen in Bergen–that there were many different methods of stave construction, and indeed of combinations of 'lafted' (or notched logs) and upright planks (Stoklund 1997, 126-30). Where a wooden house had two storeys, the upper one might be of different construction from the lower[12], or a notched-log *stofa* might have a planked verandah (*svalgang*) around one or two walls. The vulnerability of timber to rotting in a maritime climate meant adaptation and improvement of protection methods for the precious timber walls. Repairs and alterations must have been carried out every few decades. These circumstances make it almost impossible to be certain which method of construction might have been used unless the lower timbers of the building were left in the ground (as they were in the urban environment of Bergen and Oslo).

There is useful comparative evidence of *stofa* with wooden floors from two sites in the Faeroe Islands, Kirkjubøur and Tjørnuvik, where wooden, stave-built houses have been excavated (Thorsteinsson 1982, 155; Stoklund 1997). Post-holes from earth-fast staves were recognised at the former, and sill-stones with remains of notched sills and upright wooden panels found at the latter. Both houses were surrounded by protective stone walls. The house at Tjørnuvik was 4.2m wide (and the length could not be ascertained). It was floored with planks, lying lengthways on cross-joists, and the main room had a stone corner-hearth and traces of stone-filled benches along three sides, *c* 0.5m broad and at least 0.3m high, fronted with upright planks. It is only dated to the 'high middle ages'[13] (Thorsteinsson 1982, 155). The method of stave-building was most usual in the Faeroe islands, although the excavator comments that 'lafted' timber houses were to a limited extent utilised in the higher social circles -as the 'Røykstova' at Kirkjubøur which was built for the bishop of Faroe. Similarly in Iceland, Bishop Audun (a Norwegian) is recorded as having imported timber to build a *stofa* at Holar early in the 14th century, which is said in the Lawman's Annal to have been the first timber *stofa* in Iceland (*Laurentius Saga Biskups*, 66; Storm 1888). This 'lafted' timber building was still standing in the 18th century.

SUMMARY

The Phase 3 building was of the dimensions and structure of the *stofa* buildings which are known from excavations in Norway (see full discussion in Crawford 1996). They were always built of wood and with the roof resting on the walls so that there were no interior posts; they had narrow earth-filled benches around the walls covered with wood and fitting closely against the wooden floor. The entrance was in the middle of the gable, and the Oslo examples usually had a corner hearth. These are all unmistakable features of a *stofa* and their survival –except for the actual walls–at the Biggings fully justifies the use of the term *stofa* for this building. The protective wall also proves that our building was wood, as above all does the presence of the wooden floor! Archaeological evidence suggests that it may have been constructed soon after AD 1200 and was in use until a little after AD 1400.

The function of such a building or room was discussed above (**4.5**). Finds from the *stofa* accord with its use for many daily activities, although not heavy domestic use. The number of artefacts is fairly small, but there is a higher number of bakestones than found in other trenches which certainly points to the use of the hearths for baking flat-bread (see **7.2.3** above); and there are some imported wares in evidence for use at table.

This still leaves open the question of the form of structure of the Biggings *stofa*, and in the end it may be necessary to decide on historical grounds, and the known status of the site as a royal farm, whether it would have been a stave-built or 'lafted' timber building (illus 16 above).

8.3.2 PHASE 3 : THE WEST END OF THE SITE: RECONSTRUCTED *ELDHUS* AND *SKÁLI*

(illus 37)

The survival of stratigraphy in this phase is much improved in comparison with the evidence from Phase 2, but the lack of horizontal continuity of layers prohibits firm conclusions. There was some evidence of modification to structures in the north of the area (Trench H). The fire-pit was replaced by an oven [Hi13] whose entrance was from the east (illus 37 inset above). The flue/drain was still in use, but was capped by large stones, some of which were broken querns. The oven was surrounded by a huge pile of ash on which was placed

[12] That such two-storeyed houses existed in Shetland in the Middle Ages is suggested from the 1360 purchase of lands in Sandwick, Unst, by Lady Herdis Thorvaldsdatter, where the transaction is said to have taken place 'i lopt' (*DN*, iii, 310; *Orkney Recs*, 14)

[13] In Scandinavian terms this can mean the 12th-14th centuries.

three large stones [H17] which demarcated the work area in front of the oven. The stratigraphic evidence from the central area (Trench E) remained sparse, but the remains of a hearth [E45] with ash and a gravel spread [E49] partly surrounding it, were found. The pit lying south of the hearth in Phase 2 was probably dug at the end of this present phase.

The ash in the northern area (Trench H) flowed outwards to the SW almost meeting that derived from a large rectangular kerbed hearth [K100] in the west of the settlement (Trench K) (illus 38 above). The hearth was aligned approximately NW/SE and was open to the NW. It was surrounded on three sides by well-laid paving [K85]. Although separated from the hearth area by a later feature, the foundations of a stone wall [E65] aligned NE/SW were identified as part of this building, lying towards the SE.

As in Phase 2, the largest number of artefacts at the west end of the site came from the *eldhus* area (Trench K) which produced 33 fragments of steatite, the majority from vessels, with one or two pieces of bakestone. In addition there was a single piece of a medieval English pottery jug with applied decoration (SF 810), which came from the hearth, 19 sherds of coarseware and 4 other artefacts including some yarn. Most of the artefacts came from the hearth deposits and to a lesser extent from the surrounding paving. Coarseware, textiles, querns, steatite, birch-bark vessel (SF 1469) and a pumice whorl came from the north and central areas.

INTERPRETATION

(illus 122)

A similar situation seemed to have existed in Phase 3 as did in Phase 2, in that the west end of the site probably had two separate buildings, in addition to the *stofa* at the east end. It is suggested that the northern area (Trench H) with its oven and stone surrounds, was part of a wooden building which also included the remains to its south (Trench E) forming a rectangular hall or *skáli* approximately 4.5m wide and 10.0m long. It certainly had a turf roof as the birch bark and wood indicate (evidence from both Trench H and Trench E). It is also conceivable that this building was remodelled internally and not necessarily rebuilt at the beginning of this phase. Although the use of the central area (Trench E) is important from the evidence of the finds, there is virtually no information from the stratigraphy to add to the size and function of this structure. Evidence pointing to the union of the north and central plots (Trenches H and E) as a single building includes similar information to that given in Phase 2. The building was on the same alignment as the *stofa*, but physically separate from it. The *skáli* in this phase would have had both oven and hearth lying centrally at their respective ends of the building with access to the oven from the east. Although the stratigraphy in both trenches remained separate, the interpretation of the remains is more cohesive than in Phase 2, and especially when the artefactual evidence is considered: steatite bakestones, coarse pottery vessels and a little textile are common to both areas. Food preparation including baking, some cooking or evidence of food consumption, and textile processing took place here.

The westernmost structure (Trench K) had a hearth (K124) that was aligned NW/SE suggesting that the building was also orientated in the same direction, thus making it parallel to the *skáli*. The survival of the wall or foundation in what could have been the southern gable helps provide evidence for the size of the structure. If the hearth was situated centrally, as was traditional in smaller buildings on Norwegian farms (see examples at the Norsk Folkemuseum in Oslo, Norway), the structure could have been *c* 6.0m in length. From the evidence of the extent of paved flooring, it is also likely that the building was *c* 4.0m in width. The combined wood and stone structure would be more in keeping with its function as an *eldhus* with elements of partial stone walling for protection against fire. The size of the large open hearth indicate that this building was the primary place in the settlement for 'washing, baking, brewing and slaughtering' (as for the *eldhus* from Nes, Varaldsøy in Hordaland, West Norway in the Norsk Folkmuseum's *Guide Book*, 1996). Although the Norwegian example is approximately 200 years younger than that from the Biggings, the dimension of the structure, its use of stone walls and its relationship with surrounding buildings, forms a strong parallel. Hearth 124 was somewhat smaller than that excavated at Lurekalven, Hordaland, but similarly filled the building space within which it was located; this room within the medieval longhouse at Lurekalven was defined by the excavator as the *eldhus* (Kaland 1987).

From the evidence of the artefacts: an imported ceramic jug, and steatite bakestones and vessels, this structure seemed to have been exclusively used for food preparation and support its interpretation as an *eldhus*. There are no additional finds, apart from a single piece of yarn to suggest alternative uses.

The evidence for rural wooden buildings of 13th-/15th-century date at the Biggings is virtually unique in the northern part of Britain. Direct parallels are hard to find as the archaeological evidence has been dominated by excavation of urban buildings, in Dublin, York, Bergen and Oslo. Even rural excavations in Norway rarely produce buildings as at the Biggings. The closest parallels seem to be the buildings at open-air museums in Norway which can survive from the 16th century. In spite of the differences in time and regional placing, the

surviving examples suggest what the buildings at the Biggings may have looked like, and reinforce their Norwegian origin.

CONCLUSIONS

The pattern of two buildings and their distribution relative to each other and to the building at the east end of the site, now the *stofa*, was presumably maintained and reinforced during this phase. It would appear that the function of the northernmost structure remained the same as in Phase 2 except that the fire-pit was replaced by an oven. There is no evidence to suggest whether the structure was rebuilt or simply maintained. The structure to the west may have been completely rebuilt, as the stone walling or foundation suggests, with the addition of a large central, open hearth set in a paved floor, thus emphasising its function as an *eldhus* in Phase 3.

At the end of this phase, these buildings were demolished, while the primary function of the *stofa* came to an end. Peaty deposits accumulated (possibly the remains of the roofing of the wooden structures - see **6.3** above) over the NW of the area, and digging of pits through the Phase 2 and 3 structures took place.

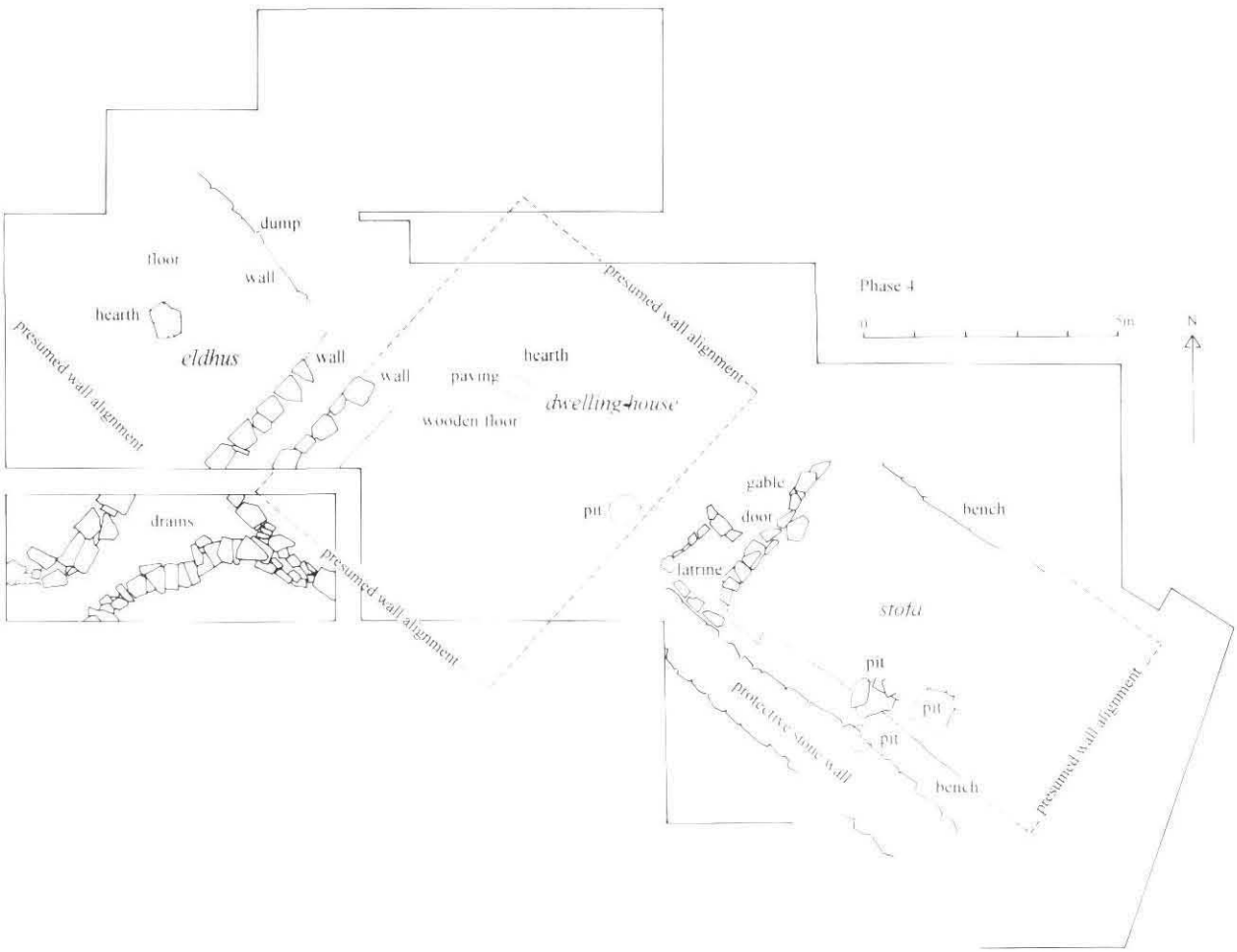
8.3.3 HISTORICAL CONTEXT

The known circumstances will once more be referred to when putting this phase into a meaningful historical context. The dramatic events of 1193-5, when Earl Harald was implicated in the rising of the 'Eyiaskeggjar' and Shetland as a result was taken directly under the control of the Norwegian crown, were discussed above (**2.4**). As was pointed out, this led to close ties being established with Norway, and the tying of the islands in with the royal administration, which can be seen fully functioning in 1299. No longer was Shetland bound up with the earldom network and its close connections with powerful families in south Iceland. The building of the *stofa* can be interpreted as reflecting this closer link with Norway, which would have become more firmly established as the 13th century progressed. It is suggested that Papa Stour became part of the royal estates as a result of the confiscations subsequent to the 1195 events, and if the island was used as a base for the administration of financial affairs by a royal official, then a new *stofa* building would very likely have been erected, naturally based on the customary plan and lay-out of those known in the royal circle. If we return here to the C14 date from one of the floor planks mentioned already, the latter end of the date estimation (cal AD 980-1210) would provide the date of building–if newly-felled wood was used. This would be in the years after Shetland came under Norwegian authority, when the crown took over earldom lands and the estates of those who had been involved in the Eyiaskeggjar rising, and who failed to redeem them[14].

It is not surprising that there is useful comparative material from Faeroe, which was similarly brought into the royal administration later in the 13th century as part of Duke Hakon's appanage. The political situation would bring changes in the social circumstances as royal officials and their retinues became the trend-setters and the new moneyed class in both groups of islands. Building styles thus introduced would soon become adopted and copied among the wealthier families of the island communities.

We can regard the Phase 3 *stofa* as being a feature of the closer links with Norway put in train by the earldom's loss of Shetland in 1195. If, as argued from the cumulation of evidence, it was indeed the *stofa* of the ducal farm then it would have been quite an old building when it was the meeting-place of Thorvald Thoresson and Ragnhild Simunsdatter at Easter-time 1299. As the 'lord of Papay', Thorvald would naturally have continued to use such a building as the main living-room on the ducal farm which he probably came to regard as his own, and which would have been inherited by his heiress, Fru Herdis. She also would have needed to maintain it for the visits she paid to the island (as a meeting-place for the business transactions she conducted with Shetlanders like Ravald Thorsteinsson in 1355 for instance: *DN*, i, 340). After this period we have no historical evidence to give any backcloth to the archaeological story, and for how long such a building would have been maintained for the visits of Fru Herdis' successors is very difficult to say. The economic problems for northern Europe following on the effects of persistent plague (see above **2.5**), must have rendered maintenance of previous living standards very difficult. By the late 14th century the *stofa* was in any case getting very old, and the archaeological evidence suggests that changing circumstances were taking place at this time at the east end of the Biggings site.

[14] Saga evidence suggests that the crown's take-over of Shetland did not go uncontested by Earl Harald or his sons, and after the death of King Sverre (1202) Harald took over Shetland again, a situation which may have lasted until his sons went to visit King Inge in 1210 and had further conditions of appointment laid on them (see above Section A1, note 4)



illus 139
Interpretation of structures in Phase 4: new dwelling-house, with *eldhus* and *stofa*.

8.4 PHASE 4: BUILDINGS FROM *c* 1400 - EARLY 1600s

(illus 139)

At the end of the main use of the Phase 3 *stofa*, when the roof was still standing, a replacement dwelling-house was constructed in stone and wood, to the immediate west, partly on the site of the Phase 3 *skáli*. This new dwelling-house was built at right-angles to the hitherto prevalent structural plan. The site of the *stofa* was now used for the construction of several pits, including a possible latrine (JL55). The *eldhus* in the western end of the site continued in use but in a modified form, and the *skáli* was completely demolished.

8.4.1 THE EAST END OF THE SITE: DECLINE OF THE *STOFA* BUILDING

The sequence of habitation following Phase 3 becomes more disturbed and although the *stofa* building continued in use, the evidence suggests that its status declined. The number of pits dug now over this end of the site indicates heavy domestic use for different purposes as does the number and variety of finds. Coarseware dominates the pottery finds at the east end of the site, with a little imported pottery and a few early continental redwares (few compared with the assemblage from the western half of the site). Steatite was still very much in use up to the end of this phase. Although there may have been a continued use of the central hearth, there was not the

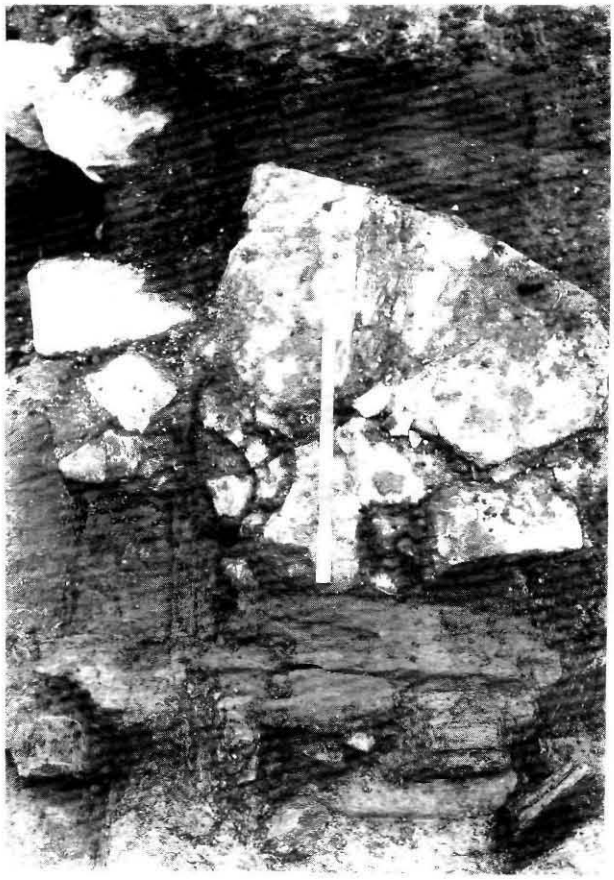
same quantity of ash to point to the building's primary occupation as the main dwelling-house and the archaeological evidence suggests that this was moved to the west end of site (**8.4.2** below)

Flagging laid over the wooden floor accords with a need for hard-wearing flooring (illus 140). The clay covering recorded over the sump (J95b) (illus 141) is also an indication of the worn-down nature of the floor, which was needing some extra protection in an area where the sump must have presented problems. Evidence of burnt deposits suggests that this building suffered extensive damage by fire at some point. The wooden structures of the Phase 3 *stofa* must have been dismantled during this phase, which dates to the 15th and 16th centuries.

8.4.2 THE WEST END OF THE SITE: REALIGNMENT AND A NEW DWELLING-HOUSE

(illus 39; 139)

A remodelling of the settlement took place at the beginning of this phase when all the Phase 3 buildings at the west end of the site were demolished (**8.4.1** above). This suggests that these buildings needed replacing, or that their use had changed requiring significant building alterations. A radical reorganisation took place, and for the first time in approximately three centuries a new pattern of building was established at the west end of the site including a partial realignment of structures. In contrast with the preceding two phases, the stratigraphy of Phase 4 was better preserved and in general there was a little more of it. However, what did survive of the two buildings established at the west end was severely truncated by later buildings and by drains, and as with the previous phases, complete building outlines were lacking due to a paucity of walls.



illus 140
Stone patch on the wooden floor; scale in 0.1m intervals; from N.

After the demolition of the *skáli*, the area was no longer used for construction, and remained an open yard throughout the later history of the site. After demolition of the *eldhus*, the locality was levelled, possibly with the deliberate application of a layer of burnt seaweed (see **6.3.7**); and clearance of it and the other Phase 3 buildings caused a large mound of rubbish [K98] to accumulate in what must have been a hollow between the *skáli* and *eldhus*. The *eldhus* was replaced by a new structure built almost on the foundations of the old. The SE wall foundation [E65] was replaced by a new and parallel wall [K19] lying to its immediate west. From the evidence, this new stone wall was double-faced and also served as a common wall with a new structure in the centre of the site (illus 139). A second wall, at right-angles to the first, became the NE wall of the replacement *eldhus* building, possibly preserving the Phase 3 alignment here. The remaining two walls of the structure were not found, nor was the entrance. Internally the building received a clay, or clay and earth floor, which was capped by a small, probably rectangular, hearth slab. It is suggested that the hearth lay in the middle of the width of the building.

The new building constructed in the area between the old *eldhus* and *stofa* was represented by a stone wall (described above) and surviving fragments of a wooden floor. These suggest that it replaced the *stofa* in function and became a new dwelling-house on the site. The wooden floor [E40] of pine planks aligned NW/SE, survived in the southern part of the building. To the north was the partial remains of a hearth [E33] and paved flooring [EJ10]. A small packing of parallel upright stones [E44] was found in the centre of the trench, but was badly disturbed by the cut for a later drain.

illus 141
Clay patch J60 on the wooden floor; scale in 0.1m intervals; from NW.

For the first time in the recorded history of the site, there was activity south of the *eldhus* (Trench M). The partial remains of three lidded drains, two running from the north, and one almost at right angles were found. However, it has not been possible to link these drains with any features of the nearby structures. Although possibly not all functioning at the same time, it is quite obvious that they are of similar construction and were built within a relatively short period of each other.

Finds were abundant from this phase, with evidence of fragments of a 14th-century Yorkshire jug (SF 812), with a thumbed base (illus 67), steatite artefacts of all types (including all the lamps), and finds contemporary with the structures of 15th-/17th-century date, such as domestic pottery, fragments of knitting and clay pipes. Much of the material came from the dump [K98] in the area behind the *eldhus* (Trench K) where it was not possible to separate out artefacts from the demolition of Phase 3 buildings from those used during Phase 4. More steatite was found during this phase than at any other time, suggesting that it was still in use for vessels and possibly bakestones, even though much of it had been discarded. Also during this phase there is a distinct change in the artefact assemblage, and for the first time items other than ceramics were imported: clay pipes and glass, and ballast such as flint and possibly coal. In addition, imported ceramics, continental redwares, although possibly present at the end of Phase 3, were now more abundant and date from *c* 1620/30 (see **7.3.3** above; col illus 18 and 19). A few sherds of modern ceramics were also found. These are probably intrusive, resulting from the demolition at the end of this phase and the rebuilding at the beginning of the next. The floor of the new building in Trench E produced many textiles including knitting and weaving fragments. In addition, there were spindlewhorls and wooden objects: a bung, wedge and spoon. Birch bark was present, and found in both buildings.

The stratigraphy surrounding the drains in the SW (Trench M) contained fragments of continental redwares, some steatite, stone artefacts and wood.

INTERPRETATION

(illus 139)

Not enough of the building in the centre of the site survived for its overall ground plan to be interpreted with any certainty although an attempt has been made to show its possible position in relationship with the building to the NW and the *stofa* to the SE. From the limited evidence, it is suggested that the building was orientated NE/SW and had two rooms, a larger wooden floored one to the south and a smaller stone-floored one to the north with a hearth. The small stone packing [E44] found between the two floors probably demarcated the dividing partition wall. Alternatively, it may have also marked part of a door housing. Measurements of the existing stratigraphy of this building indicate that it could have been over 8m long and at least 6m wide. A piece of wooden flooring close to the common wall with the *eldhus* is enigmatic, and may mark the flooring to a doorway leading NW out of the building. The new *eldhus* was built probably on the same alignment, and possibly on the same foundations, as the Phase 3 *eldhus*, perpetuating the older building pattern and possibly its size of *c* 4.5m x 4.0m. However, in this phase the structure was probably completely stone-built. Its hearth may have been placed centrally and it may have continued the traditional functions of an *eldhus*. Sometime towards the end of this

phase the Phase 3 *stofa* burnt down, precipitating the burning of the Phase 4 dwelling-house during the middle of the 17th century.

CONCLUSIONS

Phase 4 is characterised by only two buildings at the west end: a two-roomed dwelling-house in the centre of the settlement and an attached structure with a hearth to its west, possibly an *eldhus* in function if not in name (the use of the farm name 'Eldus' in the 1600s has already been discussed, **3.5** above). Lying close to the angle created by the two structures was a large dump of rubbish. Imported goods, especially ceramics, were used in the dwelling-house, some found *in situ*. The range of other artefacts suggest that every-day activities took place there. The evidence is more sparse for the replacement *eldhus* building, but food preparation may have been one of its main activities. The digging of drains at the southern end of these buildings suggest that drainage was becoming a problem on the site. The artefacts are consistent with a use of these structures over a 200-year period from the beginning of the 15th century to the beginning of the 17th.

8.4.3 HISTORICAL CONTEXT

Although there was a political change in the history of Shetland during this period and it came under Scottish control, there is no evidence from the artefactual assemblage to suggest any great change in the cultural connections of the community living at the Biggings. Tullochs and then Mowats controlled the island's rents, which were collected on behalf of the distant owners, the Lords of Norway. These may have been paid partly in the traditional way, in lengths of wadmel woven on the island; there was still plenty of archaeological evidence of textile activity. However, the fact that pit JL55 was lined with a quantity of loom-weights (illus 146 below and discussion in **7.4.4** above) may indicate that they had been abandoned because of a decline in weaving activity. This could provide rather dramatic corroborative evidence for the known decline of rental payments in wadmel in the early decades of the 17th century (see above **2.6.2**).

This is the period when historical evidence shows yearly visits of Hamburg and Bremen merchants to be such a significant feature of Shetland history. Evidence of Papa's importance as a shipping haven for the German merchants exists from the 1560s and the 'Duchemen of papa' are referred to *c* 1600 (see above **3.3.2**). They, of course, would be the suppliers of the continental redwares which are a dominant feature of the pottery assemblage of this phase, particularly at the west end of the site.

The evidence of decline in status of the building on the east end of the site at the end of Phase 4 (early 1600s) is in accord with what is known about the circumstances surrounding wooden houses in Shetland at this date. The historical evidence telling about the importation of timber from Norway ready cut for the construction of 'stock-stove' houses (Smith 1980, 22f) has been referred to already (above **8.3.1**). This trade was probably in decline by 1600 however and documentary references to such houses (called 'stoff/stoiff') become rarer (although, there is one instance in the Court Book of Shetland for 1602-4 of a 'new stoiff hous': Donaldson 1954, 96). Evidence suggests that they survived longest in the northern parts of Shetland, where the udal proprietors also maintained their independent status longest[15]. It is very probable that the wooden building suffered neglect, particularly if it was not the main dwelling-house, and the evidence of burning suggests that it burned down at the end of this phase. This may explain why the name 'Stove' never existed for a holding at the Biggings, as it did in other parts of Shetland (or if it did it was never recorded).

8.5 PHASE 5 - EARLY 1600s TO THE MID 19TH CENTURY: A NEW STONE DWELLING-HOUSE

A dwelling-house, possibly converted from an original barn and/or yard, was constructed in the east over the Phase 3 structures. In the west the Phase 4 dwelling-house was replaced by a new farmhouse, and pits are found dug into the earlier structures. A map of 1846 (Endpapers) shows that at that date, about a dozen dwelling-houses had been built close together in the North Biggings yard during this phase. Site evidence in the form of incoherent fragmentary walls is all that survived of the majority of these buildings, as they were all thoroughly demolished before the construction of the Gørl in Phase 6.

[15] Documents refer to 'the cheife hous called the stove' in two Yell townships and 'the hous or Stove of Sutherhous in Glus' in 1646. Even as late as the 1760s a stock-stove house was maintained and lived in in Cuppaster in south Yell. The author (BEC) is grateful to Brian Smith for these references.

8.5.1 A NEW DWELLING-HOUSE IN THE EAST

Whatever had been the status of the former *stofa* site in the previous phase, during this period of intensive population growth (see **3.3.2** above) a rebuilt stone dwelling-house was located again on the same alignment as the earlier buildings at the eastern end of the site. Maybe this was when the name 'Gørl' was first given to the dwelling in this position. Very little of it survived due to later destruction, but the hearth was located towards the east gable, and some drains were found (illus 32). Its outline is delineated in the 1846 plan (Endpapers) where a parallel building to the north is also shown (which may have been found in a very fragmentary condition in Trench S). These two houses may be the ones remembered in local tradition and called 'Da Porrie' (**3.5** above).

There was a rapid decline of imports of German redware during Phase 5 which is explained by the historical evidence for the late 17th-century decline of trading, and the ending of the German mercantile role in Shetland's history (**3.3.2** above). It was replaced by modern ceramics from British potteries.This was the period of the Nicolson and Gifford control of all economic life on the island and the total enslavement of the population in the fishing tenures. Unfortunately the destruction of these later phases of the archaeological investigation by the rebuilding of the Biggings township means that the picture gained was not clear, and the material evidence very disturbed.

8.5.2 PHASE 5 THE WESTERN DWELLING-HOUSE

(illus 40; 142)

The pattern of buildings in Phase 5 is complicated by the addition of many new stone features, including the remains of at least three drains. What is apparent is that the Phase 4 central dwelling-house (Trench E) was demolished at the end of that phase and the building in the original *eldhus* area (Trench K) was rebuilt. This caused a significant amount of rubble and peaty deposits [K17x, 26] to build up across the area. On top of this a new structure was erected. The SE wall of the previous building [K19] was retained but the NW [K11] was moved south at least one metre. A drain [K20], aligned NE/SW, was built and formed a boundary to the building in the NW. It is unknown whether the drain was a contemporary or a later feature, or what was the nature of its relationship to the NW wall of the structure. Floors of two rooms, divided by a stone foundation [K157] to a partition wall, survived inside the building, although truncated to the south by later activity. The west room had an earthen floor [K9] which contained the remains of a hearth, and the slightly smaller east room floor was of clay [K10], which may have formed the foundation to a wooden floor immediately above.

Lying to the north of the building was at least one substantial wall [Hi22] aligned NE/SW with fragments of paving to either side of it. In the north (Trench H) was part of a drain [Hi23], which may have been a northward continuation of the drain [K20] of the new structure (Trench K).

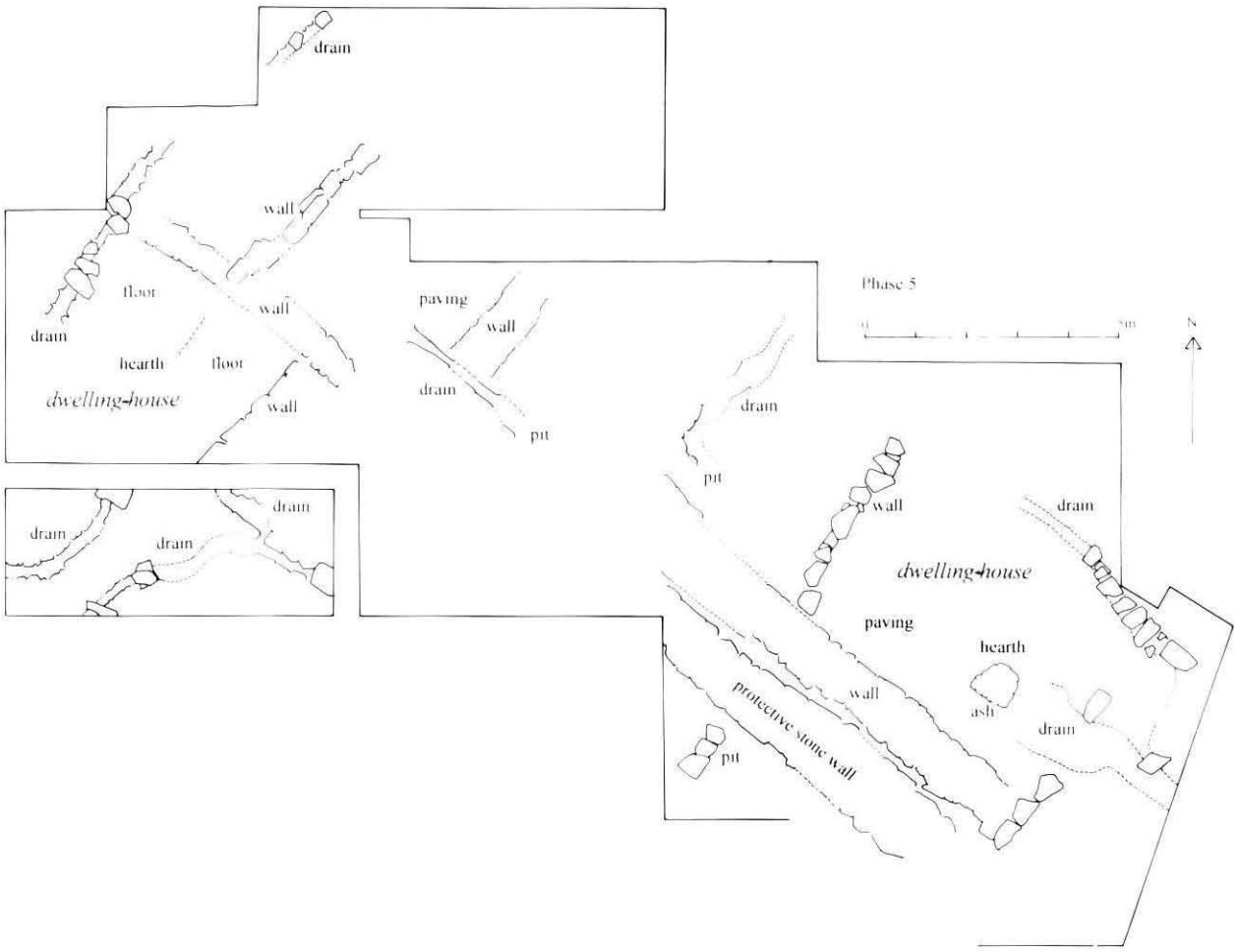
After the demolition of the Phase 4 central dwelling-house (Trench E) the area possibly became an open yard with the addition of a drain [E9] running through it from NW to SE, and a pit at its eastern end. At right angles to the drain and running NE from it, was a wall or walls [E35] which bound an area of large paving slabs [E88] to its west. The drains in the SW (Trench M) [M9, M10] may have still been in use, but they were not found to be physically linked to any structure.

Finds include the largest amount of both coarsewares and continental redwares found at the site in any one phase. They came from both the floors of the new western structure and from its surrounding deposits. The redwares are of late 17th-/early 18th-century date and some of the coarsewares are probably contemporary. The mix of earlier material, disturbed during rebuilding, is seen in the numbers of fragments of medieval wares present in this phase. For the first time modern wares were found in significant numbers, in the new western structure (Trench K) and from a pit in the centre of the site (Trench E). Some steatite was also present in these localities, but this is thought to be residual, derived from earlier deposits. Of more significance are the textiles from the area of the new structure (Trench K) including the foot of a stocking, SF 1655 (illus 113) (possibly redeposited from Phase 4), tabby and twill fabric; clay pipes of possibly mid-17th-century date, and fragments of bottle and window glass. More finds were found in Phase 5 in this structure than in any other phase, and from any other part of the site.

INTERPRETATION

(illus 142)

The number and variety of finds from the new western structure suggest that this was a dwelling-house, which



Illus 142
Interpretation of structures in Phase 5: dwelling-house and drains.

replaced the Phase 4 structure in the centre of the settlement. As with previous phases, the stratigraphy is discontinuous and often missing, due to later disturbances, and interpretation of the surviving material is unsatisfactory. This new dwelling-house was at least 4.5m long and at least 4.5m wide. The structure was aligned NW/SE and divided by a partition wall into two rooms. There are fragments of two outer walls but there is no indication of where the entrance to the structure would have been. A hearth was located in the west room. The drain to the west may have truncated the structure or been a part of, or lay beside the NW wall. North of the dwelling-house and running parallel to the drain (2.5m away) was a substantially built stone wall, which may have been a yard or boundary wall. Paving to either side of it suggest that an open yard or yards, or even paved byres may have existed here (with the addition of the wall and drain to the east).

CONCLUSIONS

A new western dwelling-house was constructed (illus 143) as both the stratigraphic and artefactual evidence suggest. However, the walls and drains of Phase 5 at this end of the site may have been complicated by the construction of new buildings at the Biggings during the early part of the 19th century known as, or associated with, 'Da Porrie' (see **3.5** above). The plan of the Phase 5 features (illus 40 & 142) may indeed show more than one event at the site, but it has not been able to separate the features stratigraphically or by more detailed analysis of the artefacts. The fragmentary nature of the stratigraphy due to the impact of later disturbances has made the features of the west end very hard to interpret satisfactorily.

Illus 143
View across the site from west to east showing structures of mainly Phase 5 date, with the Phase 6 Gørl in the background.

8.6 PHASE 6 - RESTRUCTURING OF THE SETTLEMENT: MID 19TH CENTURY TO THE 1930s

This phase is marked by the destruction of the existing buildings and previous settlement alignment between 1850/1880. A small croft house called 'the Gørl' was built nearly at right angles across the eastern end of the former houses in the SE of the site (illus 143). It remained in use until the 1930s. There were no recognisable structures at the west end for this phase.

8.6.1 THE CONSTRUCTION OF THE GØRL CROFT-HOUSE AT THE EAST OF THE SITE

The total change which occurred in the history of the Biggings in the mid-late 19th century is reflected in the total change which occurred in the building history in Phase 6. The remarkable continuity of dwelling-site did not cease, but the alignment was turned round ninety degrees. Between 1850 and 1880 all the old houses were

pulled down and a new dwelling built N/S across the east end of the former *stofa*. It was of the improved variety with two rooms, and eventually a gable chimney although it also had a square open hearth at the south side of the main doorway. 'Da Gørl' was only inhabited for 60 or 70 years, and then itself abandoned. The still surviving south gable end (illus 144) marks the site of a remarkable occupation of perhaps nine hundred years, from a semi-sunken Norse *dyngja* of a high-status Norse farming establishment which probably controlled most of the cultivable land in Papa Stour to the dwelling of one crofter with a small holding of land (but the heir of a long tradition).

8.6.2 LEVELLING OF THE WEST SIDE OF THE SITE

After the end of Phase 5, it would appear that the structures across the west end of the site were levelled, and no building was erected here again. There were however, three walls, one in the north (Trench H) [H2] and two small fragments in the centre of the site (Trench E) [E 87 and E86], none associated with buildings. Phase 6 activities do not further the interpretation of the building sequence at the Biggings; these late events may have taken place during the latter half of the 19th century or the early part of the 20th.

8.7 CONCLUSIONS ON THE STRUCTURAL HISTORY OF THE SETTLEMENT

The east end of the site was easiest to interpret because of the better nature of its survival, which by remarkable good fortune had preserved recognisable features of a wooden *stofa*. However the buildings uncovered there were possibly not the most important units of the total settlement in terms of size and activity (although the Phase 3 *stofa* itself was the highest status building). The west end was where the hub of domestic activity was centred.

Problems of interpretation make it difficult to classify the buildings at the west end, or even to describe their plan, structure and lay-out (**5.6** above). The lack of surviving stone walls do not permit accurate estimations of dimensions. The possibility that all were of wooden construction cannot be ruled out, but the only post-hole recognised (in the *eldhus* area in Phase 2) does not prove that this was the case. Apart from the significant presence of a *stofa* of high-status type at the east end there is nothing much that can be said about the remaining structures which can add to the existing evidence for Norse building types (as known from other excavated sites in Shetland).

PHASE 2 (11TH-12TH CENTURIES)

(illus 116)

The earliest sunken-floored building, the *dyngja*, at the east end was not heavily used from the few number of artefacts found within it. The western building was obviously much the most important dwelling-house from the artefactual evidence, and presumably it was therefore, the main hall or *skáli*. Together with the smaller building, a precursor of the *eldhus*, this formed a complex that was the centre of the living area. These three units were all distinct and non-contiguous buildings.

The *dyngja* structure at the east end was replaced by a *stofa*-building, a self-standing wooden building, with impressive stone-structured central fire-pit. In the *skáli*, finds of bakestone and coarseware point to cooking activities around the remains of a rock-cut fire-pit, while the fragments of Paffrath ware (relocated in a later pit) is significant first evidence of imported pottery on the site.

PHASE 3 (*c* 1200 - *c* 1400)

(illus 122)

The restructuring of the wooden building appears to have been closely modelled on the 'lafted' *stofa* of eastern Norway (as compared archaeologically with the excavated examples from Gamlebyen, Oslo).

The dwelling-house, the *skáli*, to the west had two sources of heating and cooking in this phase: a hearth and baking oven. The finds corroborate that the oven was used for food preparation, (steatite fragments, coarse pottery and quernstones), and the area of the hearth produced steatite bakestones and other steatite fragments and a little coarseware (including a lamp). This artefactual evidence pales beside the quantity of finds from the smaller western building however (see **5.6.2** above), most of which came from the large kerbed hearth built in this phase, and the surrounding paving.

This is the period when Norwegian sources define the three types of building which made up the normal farming or urban settlement unit: the *stofa*, *eldhus*, and *bur* (or *bu*) (discussed above **3.5** and **4.5**). The first is clearly present in this phase, and the smaller western building with large kerbed hearth would appear to qualify

for the *eldhus* category. We are continuing to identify the longer building, which must have been the main dwelling or 'living-room', as the hall (*skáli*), along the lines of the older longhouse, known apparently in Iceland as the *eldaskáli* (Johannesson 1974, 338). This does not leave any clear location for the *bur* among the indeterminate house structures at the west end of the site although (as discussed above **3.5**) place-names do suggest that such a house may have existed at Uphouse. However the function of a *bur* is not exactly clear and such a store-room or work-room might be rather difficult to recognise in the archaeological record.

PHASE 4 (*c* 1400 - 1600)

(illus 139)

The change from Norwegian to Scottish political sphere in this period is broadly reflected in the perceived archaeological circumstances. There was a decline in the status of the *stofa* building, and the structures at the west end become the main dwelling-house. This was on a changed alignment, it was two-roomed and stone-built, and thus reflected more the Scottish influences of the period rather than being a continuation of a Norwegian type. The name 'Eldus' recorded as a farm residence on Papa Stour in 1625, very likely derived from the older Norse name *-eldhus-* for the small western building, and retained for the dwelling-house in this phase.

PHASE 5 (EARLY 1600S TO MID 19TH CENTURY)

(illus 142)

This was the period of greatest population growth, and the 1671 list of tenants at Uphouse–giving ten names (see **3.3.2**)–provides the historical background for the sub-divison and over-crowding that must have happened, and which is reflected to some extent in the confused picture of structures at the west end of the site.

9

FINAL DISCUSSION

Barbara E Crawford

9.1 THE PROJECT

As outlined in the Introduction, the intellectual basis of this research project was always meant to be interdisciplinary. It is now time to attempt to draw some meaningful conclusions combining the results of two diverse approaches to the study of the past. As has been rightly noted, in talking about 'interdisciplinary approaches' the stress should be on the 'discipline' as much as on the 'inter' (Page 1982, 351). It is to be hoped that this publication shows the rigorous nature of the approach which has been followed with the subject material presented by two very different disciplines. How successful has the project been in combining these two sources into a coherent study of the medieval and early modern communities living and farming at the Biggings on the island of Papa Stour?

9.1.1 THE NATURE OF HISTORICAL AND ARCHAEOLOGICAL EVIDENCE

The primary motivation for the project, the historical circumstances as revealed in the 1299 document, have been described in detail above (**Introduction**). The evidence contained in the 1299 document provided many points of discussion about aspects of the society and economy of Papa Stour and Shetland (chapter **4** above). Above all it showed that the island was a valued possession of the Norwegian crown, probably as successor to the earls of Orkney (**3.1.4**). Indeed, if it were not for the 1299 document we would never have known that Papa Stour had belonged to the Norwegian crown. It is, however, well recorded from the following centuries that it was the possession of powerful and wealthy members of the highest levels of the Norwegian, and Dano-Norwegian, aristocracy (**3.2**).

In the late Norse period, including the span of time when the island was a possession of the Norwegian crown, we were therefore dealing with a high-status site. The farm of Uphouse was a power centre where royal officials stayed when carrying out administrative, legal and fiscal business. They would expect a residence which befitted their status, and this residence became a more permanent one for Thorvald Thoresson who eventually held the island in *len* (by royal grant) from the crown.

His daughter also resided there on occasions, but as the direct political connections between Papa Stour and Norway declined in the period of social disruption in the 14th century, the community at the Biggings became one of resident tenants (there must always have been tenants there, of course, to farm the lands for the frequently-absent owners). The tenants' own status is difficult to evaluate in the absence of detailed historical records. Settlement history tells of increasing population on the island, and the growth in numbers of households at the Biggings is reflected in the change of alignment of the main dwelling-house at the west end, the decline to workhouse/outhouse status for the *stofa*, the sub-division of holdings, and the development of the Biggings township into a community of village size.

This site had a long-lived history and it has therefore been necessary to adjust to the fact that we were interpreting the surviving record of a community whose status had changed drastically over time. What is meant by 'status' in this context? This historical term is normally assessed according to material criteria: wealth measured in buildings, building structures and style of buildings; standards of material culture as seen in imported goods or quality of local products, which inevitably varied over the centuries. It was not easy to recognise such a change in the archaeological evidence because of the extent of destruction, clear indicators for interpretation of individual episodes being obscured by the disturbance in subsequent, more recent, levels.

Every archaeological site is different, and the length of period over which a site is excavated, the extent of

funding, and the local facilities are all relevant factors to the quality of the final result. In the case of the Biggings, the research-driven nature of the project and the lack of state funding meant that the excavation campaigns were sporadic, and resources were very limited. This was not an ideal basis for a comprehensive archaeological study, and yet our historical knowledge about the site gave us the research impetus and the intellectual inspiration which has provided an illuminating and very unusual aspect to this project.

We chose to excavate in an area of former dense settlement because it seemed the most likely place to find the ducal farm of Uphouse. Excavating in the middle of a crofting community which has been the centre of island settlement since Norse times inevitably engendered profound difficulties of interpretation. As has been stressed, the growth of population at the Biggings from the late Middle Ages resulted in changes of house alignment, and multiplication of dwellings, even though the same area remained the focus of the main settlement zone. It has already been explained (**3.4.3**) how the North Biggings houses were pulled down in the mid 19th century, and although this provided the opportunity to discover the *stofa* at the east end it left the west end very disturbed and thus incapable of revealing a reliable picture of phasing sequences or of house types. The contrast between the unusual preservation of wooden *stofa* structures at the east end and confusion at the west end indicates how conditions can vary within a few metres, without any indication of such variability at the ground level.

It can be argued that if we had not known that a particular building called a *stofa* had existed on Papa Stour in 1299 it would have taken a lot longer to recognise the structures that were uncovered at the Biggings as the remains of a wooden building. As a result of the discovery of the *stofa*, excavators in Shetland, and in areas of Scandinavian settlement in northern and western Scotland will be more alert to the possibilities of recognising the remains of former wooden buildings on sites dating to the late Norse period.

In looking for the site of Duke Håkon's farm, and excavating what we believe to buildings of that farm, the investigation was concerned with the highest level of Norwegian society, a level which is rarely the subject of archaeological investigation. No known royal farm had been excavated in Shetland (or in Norway) before. As far as royal estates in Shetland are concerned, evidence would suggest that they passed into the hands of other land-owners fairly rapidly (as we know that Papa Stour did). By the date of the first Shetland rental therefore (*c* 1500) the extent of the crown estates was not great, and they consisted only of small parcels of land (pers comm Brian Smith).

This situation makes Shetland rather different from Orkney where the earls had large estates throughout the islands, and some important and long-lived residences, such as Birsay and Orphir, have been extensively excavated (Morris 1989; 1996; Batey & Morris 1992). Comparisons are not easy but the most distinctive buildings at the Biggings (*dyngja* and *stofa*) have not so far been recognised on Orkney earldom sites or anywhere in Orkney. We have to look directly to Norway (**2.4.2** and **2.4.3**) and to parallels found in urban excavations there for the most useful examples of this *stofa*-type of building. Its importation and use in Shetland must reflect the close political links which are known from the historical evidence to have existed with Norway from 1195 to 1470. The *dyngja* is also now being found on rural sites in Norway, although the most useful examples of these sunken structures have been excavated in Iceland. These distinctive buildings symbolise the cultural unity of *Noregsveldet* at the height of Norwegian royal power and influence.[1]

9.2 THE SITE

The Biggings has its own features which make it distinctively different from all other Norse sites excavated in Scotland. It is located at the heart of a crofting community, it had acidic preservative conditions, and it demonstrated a remarkable conservatism in the re-use of the same house site throughout its settlement history. In scale it may not bear comparison with the remarkable multi-period settlement uncovered by Hamilton at Jarlshof, nonetheless, in comparison with most excavated Norse sites in Orkney and Shetland, which have been abandoned (and are therefore available for excavating), the Uphouse site excavated at the Biggings has a certain significance as having remained a centre of settlement from AD 1100 to the 20th century[2].

[1] *Noregsveldet* (= 'Norwegian world') is the term used by Norwegian historians of the period when the kings exercised power over the skattlands in the Atlantic, and had some authority in European affairs.

[2] The recently-published report of excavations at Skaill, in Deerness, Orkney, another multi-period and high-status Norse site, makes the point that there is 'arguably an unbroken sequence' in buildings of Viking Age and late medieval date underlying the present-day farmstead (Buteux 1997, 215). The excavated buildings are however quite widely scattered.

This makes the site primarily a 'late Norse' one in terms of its Scandinavian time-span[3] although if Phase 2a is 11th century in date as suggested (**8.2** above), it can be claimed that settlement at the Biggings started in the 'Viking' period (or preferably 'early Norse' for pre-AD 1100)[4].

9.2.1 HOUSE ALIGNMENT

The continuity of occupation is clearest and most impressive at the east end where the succession of structures is unbroken from the 11th-century *dyngja* to the 19th-century improved croft house called the Gørl (illus 143; 144). These may not all have been dwellings (it depends on how one defines 'dwelling') as the *stofa* in Phase 4 appears to have suffered domestic industrial use, but this area continued to be inhabited, with, moreover, the house dimensions varying little, if at all, right up to the destruction of the houses in the 1860s. Even after that the builders of the Gørl chose to use the site of the destroyed houses, although they placed their new house at right angles to the previous house alignment. Despite the problems this latest structure on the site caused our excavation procedure, we have to recognise that the placing of this house at the same location had done much to preserve the Norse house underneath and the wooden structures which were uncovered.

Despite the remarkable continuity of settlement throughout the period outlined above, the partial nature of interpretable evidence from the whole excavated area has to be stressed. The west end buildings contemporary with the well-preserved east end *stofa* were the *skáli* and *eldhus*. The number and variety of hearths and ovens (see **8.3**) give a vivid picture of the domestic activity which was carried out in the buildings, but the structure and dimensions of the buildings themselves were obscured by later destruction. The reconstruction of the *skáli* and *eldhus* are an approximation. It is not even possible to say what the houses were built of, whether stone or turf, or whether they might have been partly wooden construction also. It was not easy to be certain about the different phasing which had been obscured by debris and intrusion into earlier levels.

illus 144
The Gørl half demolished, with wall J13 visible in front of it.

[3] The dating terminology used here is that proposed by Bigelow (1985, 104) who used the term 'late Norse' for the period 1100-1500

[4] The archaeological evidence from Phase 1 was not datable. It should be noted that parts of the west end (Trench E) were not fully excavated, so no conclusions about pre-Norse settlement at the Biggings can be firmly made.

Change of house alignment is a problematical area of analysis in the Norse period. It is possible to theorise as to the reason for such changes, but in fact we have no real knowledge of the imperatives under which such changes were made. Suggestions of a shift in wind direction have been put forward to explain a 90° change of axis orientation of houses on the north side of the Brough of Birsay at the end of the 10th century (Hunter 1983, 168; 1986, 147). Much more theoretical concepts have been expressed as underlying the switch from E-W alignment of medieval *stue* in Norway to a N-S direction in the post-Reformation period (Doxtater 1990, 183-210). The maintenance of the established E-W house alignment of the *dyngja* and *stofa* at the Biggings is notable, although it does appear that the shift of main dwelling to the west end in Phase 4 did involve the building of a new house on a N-S alignment (Section **8.4.2**). The most dramatic change of orientation was of course the building of the Gørl diametrically across the foundations of the destroyed building in the 1860s/70s. The imperatives lying behind this whole re-alignment undoubtedly had more to do with the priorities of the landowners and their estate surveyors' preferences than the wishes of the tenants. Such principles may perhaps have underlain the original planning of the buildings, rather then any more practical considerations.

9.2.2 ABSENCE OF THE CLASSIC LONGHOUSE

In contrast to the situation on most excavated Norse sites where the animals were housed close to or in an integral part of the dwelling-house, there was no evidence that animals were housed in any part of the excavated area at any period. It is likely that the byres, barns and stables lay near or under the barns of today in the Biggings yard (see 'Byres' in plan of old names recorded at the Biggings illus 13); however, nothing relevant was found in the area investigated which abutted these buildings. It should be noted that the dwelling-house at the NE corner of the Biggings yard is called 'Nordaflør': *flor* is the Norwegian for cow-stall, which suggests that byres were located in this area at some date. This absence of animal housing in close conjunction with dwellings is in contrast to other excavated Norse houses in Shetland.

The provision of space for cattle at the ends of dwelling-houses in the late Norse period can be seen at Jarlshof probably in Phase III (10th century) and certainly in Phases V and VI (11th-13th centuries), while the medieval farmstead had a separate byre parallel to the house (Small 1982, 248-50). The late Norse Sandwick house has an integral byre and Bigelow has discussed (1985, 111; 1987, 27-9) the 'radical shift in building design' which generally followed on the addition of the byre to the dwelling-house which he suggests happened in the 11th and 12th centuries. He has developed a very interesting theory to explain such a development, suggesting that there were economic reasons for this change which may have been a result of the intensification of dairying (1987, 33). Perhaps because of increased demands for taxes and tithes (paid primarily in butter and 'wadmel') it proved necessary to move the milk cattle nearer the source of heat in the house in order to improve the milk yield. It could also be suggested that the deterioration of climatic conditions from 1250 onwards may have induced changes in living patterns for cattle **and** man–who would have benefited from the increased heat engendered from close proximity to cattle and cattle manure. As far as the Biggings is concerned there is no evidence to indicate that such a development took place, although the demand for increased 'wadmel' taxes may underlie the evidence of textile production.

Two factors may be relevant to the lack of evidence for any true longhouses (ie the combination of dwelling-space and cattle housing under one roof) at the Biggings: the high status of the site through the Middle Ages which could well explain a disinclination to bring the byres nearer to the *skáli* or the *stofa*, and the intensive nature of the arable cultivation of the Biggings fields, which may have meant that cattle-raising was not such an important aspect of the economy of this farm. Clearly there must have been storage barns nearby which would have been likely to include corn-drying kilns, as at Jarlshof and the Beachview site in Birsay (Hamilton 1956; Morris 1996, illus 126).

9.3 NATURE OF THE STRUCTURES EXCAVATED

Of prime significance when assessing the nature of the archaeological discoveries at the Biggings is without doubt the sequence of wooden buildings, and the evidence for the use of timber on Papa Stour in the Norse period. Prior knowledge of the existence of a *stofa* on the island in the late 13th century enabled us to recognise that we had in fact found such a wooden structure when the planked floor was uncovered in 1979 (section **5.1**).

However, the exact nature of this building was not easy to define, for the many and varied explanations of the origin, meaning and physical nature of wooden buildings have not been simple to understand. Recent publication of Stoklund's study of Faeroese houses in the North Atlantic context (1996) has helped to clarify many aspects[5].

Behind our interpretation of the east end of the site lay the burning question: was the *stofa* in west Norway like the separate 'lafted' timber buildings so familiar in east Norwegian architectural tradition, or was the term used for a boxed wooden room which was incorporated into the traditional longhouse buildings, lying alongside the rest of the dwelling-house, and under the same roof? It is a very vexed issue among Norwegian architectural historians (Crawford 1996, 143: Stoklund 1996, 118, 120), and it had therefore to be very seriously considered. The evidence for such a *stofa* at the Biggings is very pertinent to the problem and could provide useful early evidence for the longhouse proponents – those architectural historians who see the traditional west Norwegian longhouse structure as continuing throughout the Middle Ages (Brekke 1997, 34-5).

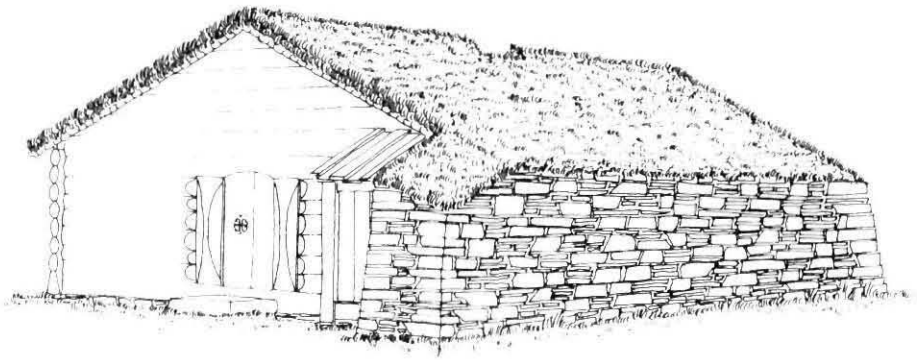
Our evidence points quite clearly to the Biggings *stofa* as having been a separate wooden building, with one protective stone wall, and **not** built as part of a longhouse structure. Even though the other main building (the *skáli*) was on the same alignment, the evidence showed them to be detached and with a stretch of open ground between them. This stretch of ground was full of pits, dug between the two buildings, which was never roofed over, as far as we could tell. In this respect the *stofa* maintained the separate nature of the pre-existing building of Phase 2, the *dyngja*. Thus our *stofa* builders were not following the usual west Norwegian tradition, but that is hardly surprising, if, as argued (**8.3.3** above), it was built in the wake of the take-over of Shetland by the Crown in the early 13th century. Under the possible control of Earl Skule who shared the kingdom with Håkon Håkonsson between 1217 and 1240, and under the certain control of King Håkon's administration thereafter, a *stofa* constructed on Papa Stour would be in the style of what was familiar in the royal court circle: and that could be a high-status 'lafted', log-built *stofa* of the east Norwegian type.

However, as already discussed, it is not easy to be certain about the method of construction of a wooden building which has been totally dismantled, except in this instance for the surviving planked floor (see discussion **8.7** above). The decision has to be taken on historical grounds because the archaeological evidence for wooden walling is ambiguous, in fact non-existent (section **5.5**). The representation of the *stofa* on the royal farm as 'lafted' (Frontispiece and illus 145 a&b) is based as much on the absence of evidence for a stave-built structure, as on any positive evidence for it being 'lafted' (the survival of the lowest logs being the only means of knowing for sure the former existence of a 'lafted' building) (Dahl 1968, 192). The Røykstova at Kirkjubøur in the Faeroes[6], believed to date from *c* 1300 shows that, at the main episcopal residence, a log-timbered *stofa* was the major component of the estate buildings and, remarkably, it is still standing (col illus 8 and 9). The ability to transport the timber to Faeroe, and also to Iceland (see ref to Bishop Audun's *stofa* in **8.3.1** above), is dramatic testimony to the power and wealth of the Norwegian church. Even more, it gives us clear evidence of the desire of the church rulers to replicate their contemporary cultural living standards in their island diocese. Just as dramatically the neighbouring stone ruins of the cathedral at Kirkjubøur tell us of the church's desire to replicate contemporary ecclesiastical norms in a quite unsuitable environment, where good building stone is hard to come by. Both these buildings are alien elements in the Faeroese landscape.

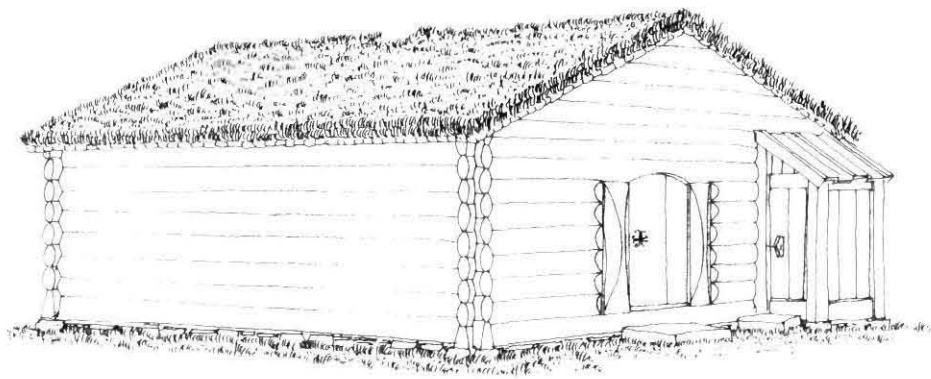
Such colonial attitudes are also relevant in the case of the *stofa* at the Biggings. We can assume that royal officials would be willing and able to emulate their ecclesiastical counterparts and construct similar timber buildings in the North Atlantic colonies. It seems inherently likely therefore that the royal administration would have ensured that its main farm–and administrative centre–in the Shetland islands would have been adorned by a 'lafted' *stofa* of similar type, if not of the same size and magnificence. Therefore the *stofa* at the Biggings has been represented as log-timbered, with a stave-built privy attached at the west gable end.

[5] In his notes to his section on the wider North Atlantic picture Stoklund comments on the discovery of a *stofa* at the Biggings: 'hun (Crawford) har ikke blot afdaekket et rum med stuens karakteristika, men kan også sandsynliggøre, at betegnelsen *stofa* i retsdokument fra 1299 referer til dette rum'

[6] It is known that a 'stokkastova' also existed alongside the Røykstova but only part of it survived a landslide in the 18th century (see drawing in Berg 1995, 251).



Illus 145a
Conjectural reconstruction of the Phase 3 *stofa* at the Biggings, from the south showing the protective stone wall extending along the SW wall of the living-room and privy (drawn by Håkon Christie).



illus 145b
Conjectural reconstruction of the Phase 3 *stofa* at the Biggings, from the north, showing the stave-built privy against the west gable (drawn by Håkon Christie).

9.4 THE IMPORTANT CONTRIBUTION OF THE ENVIRONMENTAL AND ARTEFACTUAL MATERIAL

9.4.1 THE SURVIVAL OF WOOD

Recognition of the wood-using culture that has existed pre-eminently in Scandinavian societies throughout history lies behind this whole research project, historical and archaeological. So rarely do conditions allow wooden artefacts to survive on excavations in the Northern Isles that there is never sufficient focus on the important place that wooden articles must have had in the life of the Norse colonists, although that picture will be hopefully rectified to some extent by the excavations at Tuquoy on Westray (Owen 1993, 331). Sites in the Faeroes have been more suitable for the survival of wood and many tools and domestic utensils were recovered from the excavation at Leirvik (Hansen 1991, 49; 1993, 479), while the waterlogged conditions at the waterfront in Bergen have resulted in the remarkably rich material now held at the Bryggen Museum (Øye 1988; Christensen 1988; Herteig 1990; 1991).

The wooden objects recovered from the Biggings are therefore immensely significant for providing some comparative evidence from the Northern Isles, and particularly the information gained about the structure of the wooden floor. The small items such as spoons and spatulae, lids, bases and staves from vessels and tubs, and pieces of buckets tell us of daily living and domestic activity. Most of these objects would have been imported from Norway, as would the floor and log-built *stofa* itself, but some wood-working seems to have been carried on at the site from the surviving twist-bit and the pegs and off-cuts (see Wood Report: **7.5**). Wooden tools associated with textile and rope-making were also found (in a pit where they had been dumped). Birch-bark fragments are among the most evocative of finds; the majority of the pieces found are indubitably from the insulating layer which was laid under the turf roof -and

still is in parts of Norway (see section **8.3** and illus 134). These certainly must have been imported from Norway for this very purpose, and their recorded occurrence on this and other sites in Norway and the Atlantic islands tells us more vividly than any other item about the standard nature of some building elements in the north Atlantic world[7].

9.4.2 STEATITE AND COARSE POTTERY

More usual artefactual evidence like the occurrence of soapstone (steatite) is of course further evidence of the Norse identity of the culture, particularly in Shetland where it was easily available (**7.2** above). Pieces of steatite vessels were present on the site from the first building phase up to the end of Phase 4, as well as a selection of other objects normally made from the same material -lamps, spindle-whorls, loomweights. This is all as one would expect. However, it is the interaction of steatite and locally-made pottery which adds a different dimension to the pattern observed at other Norse sites. General conclusions about the use of pottery in the north Atlantic point to its re-introduction in the late Norse period (Buttler 1991, 230) – both as crude, locally-made pots and imported wares. The circumstances at the Biggings cannot really help with this vexed question as the site is primarily a late Norse one, with the first building dating probably from the 11th century. But what is clear is that coarse pottery is there from the very beginning and continues to dominate the finds assemblage right into the early modern period. Moreover it is made and used right through the period when foreign wares are coming into the island, and does not appear to become less important to the indwellers at the Biggings, as a result of the availability of glazed ware and stoneware, or indeed redwares (**7.1** above). This points at the very least to a conservative streak in the community, and it may perhaps indicate a tenantry which could not afford to abandon their cheap and utilitarian home-made cooking pots, even though some dwellers at the Biggings had access to fine foreign tablewares.

9.4.3 PRODUCTS OF EXCHANGE

Another major issue in Norse studies is the dominance of fishing in the economy of island societies, and the type of fishing pursued (see discussion in Bigelow 1992, 18-19). Once again the Biggings evidence does not help us to understand any changes in diet or in the amount or type of fish caught by the community. Primarily there is a virtual absence of bone survival, but even the numbers and distribution of fishing weights do not reveal any marked changes. Bigelow's model of economy-related changes in Shetland society in the late Norse period includes an 'adoption of trading dried fish for grain and other imported products' between AD 1000 and 1300 (*ibid*, 19). Historical evidence discussed above (**2.5.1**) certainly shows an association of German merchants with Papa Stour, as early as the mid 15th century: the island's location should have made it an important centre of trade and exchange of dried fish from the very beginning of these developments-which may well have stemmed back some centuries into the Middle Ages[8].

However it is highly unlikely that grain would have been one of the products imported into Papa Stour in exchange, when the island was probably always self-supporting in cereal products. The range of goods which German merchants were expected to provide in the 16th century was discussed in Chapter **3** above. Few of these items are witnessed in the archaeological record from the Biggings, although the one impressive and obvious product of this exchange is the quantity of fragments of German and south Scandinavian redware pottery, which dominate the ceramic record in Phases 4 and 5 and which possibly appear from the end of Phase 3 (*c* 1400).

As well as fish, it is very likely that locally-made wadmel cloth would have been an item which Hamburg merchants would have taken, and which may have been one of the 'other wares' listed as objects traded by local people. The most important purchasers of Icelandic wadmel in the late Middle Ages were Hanseatic merchants (Hoffmann 1974, 222). Before the growth in export of dried fish it was the coarse and functional cloth from the north which was probably the most valued item of exchange. Quite apart from trade, the demands of payment of skatt (taxes) in lengths of cloth

[7] See Herjolfsdalur in Iceland (Hermanns-Auðardottir 1989, 84).

[8] Recent work by J Barrett (1997) on the Norse dried-fish trade in Orkney and Caithness suggests active trading from *c* 1300.

by the Norwegian administration meant that weaving was a most necessary activity in the 'skattlands' of the north Atlantic. This is one area of the economy of the islands which is well attested in the archaeological record at the Biggings. Loom-weights, for weighting the warp of the upright loom, and spindle-whorls, for producing the spun wool, are there in abundance, as they are on most Norse sites: but a pin-beater for use in weaving and the ropemaker's top for twisting fibres are remarkable wooden survivals (**7.5.2** above). Also unique–so far–on a Norse site in Shetland are the remnants of cloth in tabby, 2/1 and 2/2 twill, and a piece of knitting from the early modern period (**7.6.3**). The introduction of the craft of knitting and its popularity in the Shetland Islands probably helped cause a decline in weaving which may be attested by the evidence of pit JL55, lined with redundant loom-weights and into which pieces of wood (and the roper's top) had been dumped (illus 146).

The pits in general, found in large numbers all over the site, provide a remarkable source of evidence about domestic activity and the household economy which has still to be fully understood in all respects. Some of the contents may indeed have a connection with textile production, if the carbonised seaweed was being stored in pits for use in creating an alkaline solution or lye, very necessary in the cleansing of raw wool and the dyeing of cloth (**6.3.7** above) (Crawford 1991, 42)[9]. Burned seaweed was also used to create salt (ON *svartasalt* = 'black salt', or ON *busalt*, '= salt for cattle') (Shetelig *et al* 1937, 311), so vital in the preservation of meat for winter food, or for keeping butter. The making of salt in this way is referred to in the Old Norse laws, in a 17th-century description of the Faeroes and in a 19th-century account of the process in Jutland (Finnbogason 1943, 130-1).

Illus 146
Partly excavated pit JL55 with some wooden objects visible within its waterlogged fill; scale in 0.1m intervals; from S.

9.5 CONCLUSIONS: PEOPLE AND BUILDINGS AT THE BIGGINGS

This project produced much information about one community over a long period of time and we were forced to take a very long look at the whole span of Shetland's history. Only for the period of the 11th to the 16th centuries (Phases 2 to 4) at the east end can we speak with any confidence about the structures, the succession of buildings, and the status and probable social connections of the builders.

Those levels revealed a world linked by close interaction of house type and material objects. These were specific house types, linked to specific wealthy groups of Norse society, and do indeed suggest that 'interaction was strongest and most important among the elite' (Scott 1994, 144). The slightly sunken *dyngja* with two impressive hearths (and not much else) has been interpreted as a structure which can best be understood by comparison with Icelandic examples, and a few Norwegian ones. Links between the earldom family in Orkney and the Icelandic elite in the 11th and 12th centuries (which are known about from almost-contemporary saga information) provide the historical background which can help to explain the appearance of such a structure on a possible earldom farm.

[9] Also possibly for softening stockfish (=*lutefisk*). I am grateful to Reidar Bertelsen, University of Tromsø, for this suggestion.

The next phase (*c* 1200-1400), when the *dyngja* had been reconstructed into a classic wooden *stofa* building, reveals the strong Norwegian imprint on island society brought about by the political disgrace of Earl Harald, and the forfeiting of Shetland to his Norwegian overlord. Colonial administrative links are seen as the reason for the prefabricated *stofa* being brought in from Norway; a carbon copy of examples excavated in Oslo, an urban dwelling unit transplanted to the most westerly island of the Shetland group. This was indeed the importation of a style familiar to a Norwegian administrative elite which was 'important for prestige purposes' (Scott 1994, 144). However unsuitable a dwelling for wet and windswept Atlantic islands, it satisfied some social need for those familiar with such buildings in the mother country, providing formality of space in which roles of social interaction could be played out. The existence of the 1299 document remarkably provides us with a dramatic example of the sort of encounter which–not **could** but–**did** take place in that *stofa* between the elite and the ordinary, between Lord Thorvald and Ragnhild Simunsdatter. The players would know where their place was in the arrangement of the internal space; Thorvald in the centre, perhaps on a dais at the east end, Ragnhild standing, near the door; the witnesses silently arrayed around, some standing near the central hearth, others sitting on the wall benches.

It seems very likely that the *stofa* at the Biggings would have been one of the first to be imported into Shetland. But it was not the last, as the place-names in 'Stove' tell us; and moreover the architectural concept of this rectangular wooden room, with square central fireplace or corner hearth, and furnishings of wall benches, was adapted in less elitist households, as excavations at Sandwick have shown. The importation of wooden buildings continued long after the Norwegian period; their function was a valued one, their place in the colonial societies of the islands of the Atlantic assured. Yet, at the Biggings, the place of the *stofa* was not as long-lived as in other parts of Shetland, for the name of this building was not imprinted in the nomenclature, and the *stofa* itself decayed in the following centuries, until it burned down (fire probably having been a permanent hazard). Indeed the period of its use as an elitist dwelling was presumably short-lived for the Norwegian owners of Papa Stour only visited the island from time to time, and after the 15th century probably not at all (chapter **3** above). The archaeology supports this picture, for the nature of the small finds was not of particularly high status. For one thing the absence of coins is somewhat surprising, although the nature of acidic conditions could be the simple reason for the lack of survival: this factor certainly explains the regrettable absence of bone objects. Moreover, the imported pottery – which is our best guide to the status of the site – is there only in small quantities until the late Middle Ages and the appearance of the continental redwares.

The Biggings is therefore, during the late Norse period, initially a site of high-status ownership but with permanent residents of more ordinary standing. The archaeology reflects this dichotomy. The building at the east end could only have been imported by members of the wealthy and aggressively ambitious Norwegian elite. The privy, located against the west gable, could only have been erected by those accustomed to the highest standards of living conditions. Although we do not know who was responsible for the erection of either the *stofa* or the privy, by the time Thorvald Thoresson was in possession we have a well-documented example of the high-profile royal official, a member of an upwardly-mobile class, recognised as a feature of the late 13th-century Norwegian administration (Helle 1974, 262). He and his family (son Thorvald and daughter Herdis) would have continued to enjoy the same wealthy lifestyle. But the members of his household, who farmed the royal estates on the island and maintained the ducal residence at Uphouse, would have had a less flamboyant and more humdrum existence. The majority of the finds accord with that more ordinary level of living.

In these ways, the historical evidence and the archaeological discoveries can be made to illuminate each other. There is always the danger of employing the 'textual imperative' to explain the mute material circumstances. It cannot be said for certain that the *stofa* uncovered at the Biggings is definitely that featuring in the 1299 document, but the close conjunction of date and place make this hypothesis extremely likely. That document and the later recorded history of the ownership of the island **can** be used to enlighten our understanding of what otherwise appear inexplicable archaeological circumstances. Seldom in enquiries of this kind can the two disciplines of archaeology and history be brought so close together[10]. Seldom can it be known who the people were who walked across a specific wooden floor, or the very day on which they did so, exactly 700 years ago. In the case of the Biggings, the fortunate survival of historical evidence has provided some illuminating information for questions that archaeologists can rarely ask with any hope of an answer.

[10] The excavation of the archdeacon's teind barn at Kebister has similarly been illuminated by the combination of historical and archaeological discovery (Owen & Lowe forthcoming). Shetland has thus two important sites where inter-disciplinary research has proven the value of co-ordinated studies.

It is hoped that this publication, which concludes the research programme into the history and archaeology of the royal Norwegian farm at the Biggings, will not be the final end of the project. The building of a reconstruction of the wooden *stofa* close to the site is an aspiration which, if achieved, would dramatically recreate this symbolic image of Shetland's Norwegian history. It would serve as a museum of the island's past, to remind islanders and visitors alike of the place which Papa Stour once had in the North Sea world of the medieval Norwegian kingdom.

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Note:

Three important Shetland studies have appeared since this volume went to press; they could not therefore be used as works of reference here but are listed below as further sources:

Ballantyne, JH & Smith, B 1999 *Shetland Documents 1195-1579.* Lerwick.
Barnes, MP 1998 *The Norn Language of Orkney and Shetland.* Lerwick.
Johnston, JL 1999 *A Naturalist's Shetland.* London: Poyser Natural History.

GLOSSARY

åre: the flat open hearth usually placed in the middle of the floor of a *stofa*, replaced by the corner hearth (ON *hjørneildsted*) but which continued to be centrally located in the *eldhus*.

bangsterie (Scots): 'violence to person or property' (*Concise Scots Dictionary*).

Bryggen: the dockside area, or wharf, in Bergen, taken over and developed by German merchants of the Hanseatic League.

bu: word used in Orkney and Shetland for the large earldom estates.

bur (also **bu**): the third building of the medieval Norwegian farm unit, used for storing food and other goods, sometimes a workshop.

burnt marks (Shet): marks of land originally valued in, (burned) silver (Ballantyne & Smith 1994).

býr/bólstaðr/-setr: the ON generic habitative element given to farms and each term having a slightly different meaning according to the nature of the farm.

eldhus: 'fire-house', the second element (after *stofa*) of the three buildings which made up the medieval Norwegian farm unit. It was where the heavy domestic work of washing, cooking, slaughtering, brewing and flat-bread baking was carried out.

Eyiaskeggjar: 'Island Beardies', the name by which the 1193 rebels who attempted to replace King Sverre with an alternative king were known.

foud (ON *foged*): the royal representative in local districts. A term which came into use in Norway in the 1300s and eventually replaced *sysselman*. The title was much used in Shetland, in contrast to Orkney.

handgangen menn: a term for members of the king's hird who had sworn homage and fealty.

Hansa (Hanseatic League): Union of north German towns primarily for foreign trade which established trading stations in Bergen, Oslo and Tønsberg in the late 13th century, and which quickly obtained a monopoly of all export trade from Norway. Their trading station in Bergen (at Bryggen) was called the Kontor (Danielsen *et al* 1995)

Herra: title (='sir') which was given to the class of knights and barons created by King Erik Magnusson in 1277. Bishops and abbots were also so styled.

hird (ON *hirð*): retinue of medieval Norwegian kings, originally accompanying the king, but from the 11th century more of a secular aristocracy comparable with the European feudal nobility. Its members remained close to the king however and had their own code of conduct as well as their own court.

husfraeyia/husfreyia: 'housewife', but with the meaning that the woman concerned was an independent householder.

lafteteknikk: the method by which horizontal timbers were laid and jointed at the corners in timber *stofa* (*laftehus*). To avoid the clumsy English term 'notched log' the anglicised word 'lafted' has been adopted, as used by Fett & Sørheim (1989).

lagrettamenn: leading figures in rural (or urban) districts who were authorised by the lawman to act as lay assessors and judges from the later 1200s onwards.

landnám: settlement of land by the Vikings in the Atlantic Islands.

landskyld: land-rent paid, initially in kind, by tenant to landowner.

lendirman (lendmann): baron who held land (ON *len*, similar to a fief) administered for the crown in return for a share of the income produced.

moldbenk: the earthen bank which ran round two or three sides of a *stofa* and was covered with wooden seating.

noust: boat-house (Shet).

odalsrett, udal (Shet): the title by which family land was held, and according to certain traditional restrictions of inheritance and sale.

øre (*ora* = ounce): the unit of weight used in the Old Norse monetary system: eight øre = one mark.

rettarbøter (pl); **rettar-bot** (sing): a legal amendment to existing law-codes, which was the main method by which laws were issued under Erik and Håkon Magnusson.

skáli: the main hall of the early Norse undivided long-house.

skatt/skattland: royal tax/land subject to tax, and the latter term was used for those peripheral areas, and Atlantic Islands, which had to pay skatt to the crown as recognition of Norwegian overlordship.

skeo (Shet): hut, open-built of unmortared stone, for drying and storing fish and meat (Donaldson 1991).

stockstove: the Shetland variant of ON *stokkastova* = house built of logs, or the timber framework of a house with horizontal logs forming ground-sill and tie-beam (Jakobsen, 1932).

stofa/stova/stua: the variant forms used in ON and modern Norwegian for the prestigious wooden room built of logs, or lined with timber, which became an important element of Norwegian medieval farms.

sysselman (ON *sysselmaðr*): a royal official with fiscal, judicial and military functions who administered the 50 districts into which Norway was divided by 1300. Their district came to be regarded as a *len* (Danielsen *et al* 1995).

ting (ON *þing*): meeting/public assembly held primarily for judicial purposes. There were several levels, of which the Lawting (*lagting*) was a representative assembly covering large areas of Norway, or, in the case of Shetland, the whole island group. It met annually at Tingwall (ON *tingvollr* = 'assembly field') near Scalloway.

tussa (ON): a flat stone used for the parching of corn.

umbesetts/unsets: small farms attached to larger ones (Shet).

umboð: 'transfer of full powers/ administration' from which 'umbodsmen' / 'umbothsmen' (Shet) = agent, representative, factor or steward.

wadmel, wadmal (ON *vaðmal*): the coarse woollen cloth woven in those parts of the Atlantic world where climatic conditions allowed sheep-rearing on a grand scale. It was an important item in the payment of skatt and rent in Shetland.

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