A CONTRIBUTION TO A NEW UNDERSTANDING OF BROCHS

by

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ABSTRACT

This thesis seeks to offer a substantial contribution to a new understanding of brochs. It reviews the subject of brochs in their main area of occurrence in Atlantic Scotland with the objectives of improving the information base; of recasting the conceptual basis of broch study; and of drawing up a strategy for further research and selective excavation. The results of original research in Caithness, Sutherland, and Skye, are presented, comparing and contrasting these with the results of research work by others in Orkney and Shetland. The original research is based on a detailed field analysis, including new survey plans and descriptions, of individual sites within selected study areas; a reassessment of old excavations; and a consideration of the contemporary environment of brochs. The thesis concludes by considering the implications of the research results for the traditional understanding of the nature of a broch, pointing out that brochs are generally dissimilar from their popular textbook image; by examining difficulties of terminology and classification arising from the new understanding; by discussing approaches to broch study; and by suggesting an amended conceptual basis for further study of brochs.

I declare that this thesis has been composed by myself, and that the work is my own.

ACKNOWLEDGEMENTS

It would be a lengthy task to name individually all those people whose help and encouragement have been invaluable over the several years which it has taken to produce this thesis. Many I thanked at the time I visited the sites on their land, or as they provided the information requested. In the course of the fieldwork I met several members of the public who demonstrated a remarkable interest in the nature of my work, asking the inevitable questions about the function of brochs, and suggesting theories of their own. I would like to thank everyone who provided assistance or showed interest, and in so doing hope that they do not mind being thanked collectively.

There are some particular people however who made a substantial contribution to the final achievement of a completed thesis, and whom I wish to thank individually. First and foremost there is my husband, William Swanson, whose initials appear on all of the survey plans, and without whose assistance in holding the end of the tape (and in providing other useful survey advice), it is doubtful that the fieldwork could have been completed. Particular thanks are due to Beverley Smith of Orkney for allowing access to unpublished information on the excavation at Howe, Stromness; to Alison Haggarty for the provision of unpublished information on the excavation at Kilearnan Hill; to Jess Campbell and Andrew MacCann of Caithness District Council for access to the bulk of the Nicolson Collection which is not on public display; and to John Barrett of Scottish Archaeological Review for formal permission to include a photocopy of a published article in this thesis (Appendix 1). My supervisor, Professor Dennis Harding, kept me under pressure at just the right time to ensure completion of the thesis, and provided many an interesting discussion about the varying nature of brochs in Atlantic Scotland. Finally, I would like to thank my friends and my colleagues in the Department of Physical Planning, Strathclyde Regional Council, for their constant interest and encouragement, and for continually reminding me that it would be a great relief to everyone when it was all finished!

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INTRODUCTION

Everyone with an interest in archaeology thinks he knows what a broch is, or rather, was. After all brochs have been studied for well over a century, and in that time a very clear picture has emerged through many published articles of the characteristics of a typical broch. These are as follows.

(1) A broch was a round, drystone, tower-like building with a specialised series of architectural features, including a characteristic high, hollow wall containing superimposed galleries (MacKie 1983, 118).
(2) It had a thick wall base to support the high wall (Graham in Scott 1947, 35, discussion; MacKie in Fowler 1975, 79).
(3) It originally stood alone, although many brochs seem to have had later domestic settlements, which grew up around them after they had ceased primarily to be fortresses (MacKie in Fowler 1975, 79).
(4) It had an internal wooden floor supported on a ledge built into the wall face, and on a ring of posts (MacKie in Fowler 1975, 76).
(5) It had a single entrance, checked for a door, and fitted with bar holes (Feachem 1977, 162).
(6) It was designed to create an impregnable refuge, a bolt-hole into which a local community or warrior band could retreat and defy a short siege or attack (MacKie in Fowler 1975, 75).
(7) It was built mainly in north and west Scotland between about 100 BC and 100 AD, and probably not before 50 BC (MacKie 1983, 125).
(8) It was developed as a result of immigration by P-Celtic speaking refugees who brought flair and innovation to local building traditions (MacKie 1971, 66; 1983, 120).
(9) It developed in the west and spread north, with the detailed design of the structure changing in response to new environments and building materials (MacKie 1983, 120).

Then in 1978 a rescue excavation of a turf covered mound took place at Bu in Orkney. The excavators had been expecting to uncover a cairn, but instead found a structure which appeared to be a broch. Material from the site underwent radio-carbon assay, and from this an occupation date of about the 7th century BC was postulated (Hedges and

Bell 1980, 90; Hedges 1987, Part I, 93). This was the first sign that the traditional understanding of the characteristics of a typical broch might not after all be as correct as they had seemed for so long. In the decade since the excavation at Bu there has been a growing sense that all is not well with the traditional image of brochs, and a number of new ideas on their study and interpretation have been put forward (Caulfield 1977-8; Barrett 1981; Fojut 1980, 1981, 1982; Fairhurst 1984; Carter et al 1984; Hedges in Renfrew 1985; Hedges 1987).

Accordingly the time seems right for a review of the whole subject of brochs across their full area of occurrence in Atlantic Scotland. This thesis aims to begin the process of review by combining the results of original research by field survey on brochs in Caithness, Sutherland and Skye, with a review of recent research by others on brochs in Orkney and Shetland (Hedges 1987; Fojut 1980, 1981, 1982; Smith forthcoming). It recognises that there are many doubts and discrepancies in the traditional understanding of brochs, and that a new understanding is emerging, not only as a result of modern excavation evidence, but also through systematic field survey of sites identified as brochs. In this latter respect the poor quality of past field evidence on brochs is highlighted, and a corpus of modern survey evidence based on selected study areas is presented, amounting approximately to a 20% sample of traditional estimates of the population of brochs.

It is likely that it will be many years before details of the newly emerging picture can be fully established by evidence, requiring the work of several researchers from a range of disciplines. This thesis is offered as no more than an early contribution to the long-term work of achieving a new understanding of brochs.

PART ONE

CHAPTER 1 A BRIEF HISTORY OF BROCH STUDIES

Brochs have been a fascination for a long time. Some of the best preserved were noticed and remarked upon by famous early travellers - Alexander Gordon in 1720, Thomas Pennant in 1769, Samuel Johnson in 1773, and George Low in 1774. The eighteenth century was the age of the tour by the literary gentleman, and brochs were only one of the many interesting aspects recorded on long journeys throughout Scotland. It was however the nineteenth century which was to become the age of enthusiastic inquiry into ancient monuments by gentlemen with antiquarian interests, and structures as apparently sophisticated as brochs could not fail to attract a great deal of attention. Casual unrecorded excavations of brochs may have occurred very early in the nineteenth century, but it was not until the mid-point of the century that a large number of broch excavations began to take place, with information being recorded to a varying degree. It was at this time that broch studies first occupied the major place in Scottish archaeological thought, which they have maintained throughout the intervening years to the present day.

1.1 The Antiquarian Period

From the point of view of broch studies, the antiquarian period divides into two - an early intensive period of excavation spanning about thirty years, which provided sufficient material to enable Anderson to define and to date the typical broch in the Rhind Lectures of 1881 (Anderson 1883); and a later period of consolidation, when the results of further excavation work were taken to confirm the established understanding of brochs.

The excavations in the early part of the antiquarian period all took place in the north of Scotland - mainly in Orkney, but also in Caithness and Sutherland, with the occasional dig in Shetland (see Tables 1-4, pp36-8 below). Many gentlemen were involved in instigating excavations. Sometimes landowners were interested in the monuments on their land. Sometimes an excavation was an entertainment for summer guests. The collation of the information emerging from the many

excavations which were occurring randomly and indiscriminately was carried out by only a few enthusiastic individuals. In Orkney George Petrie is the name most associated with brochs during this early period. In Caithness it is Joseph Anderson, and in Sutherland the Rev J Maxwell Joass.

Most of the activity in the early period took place in Orkney. George Petrie was a local man, factor of the Graemshall estate. (For a detailed discussion of the history of broch studies in Orkney and the work of Petrie, see Hedges 1987, Part III, 130-151). Petrie was associated with broch excavations in Orkney between 1847 and 1871. In that time over 25 brochs appear to have been excavated to some extent. Petrie excavated two himself, collaborated with James Farrer on the excavation of several others, and recorded the activities at broch excavations by other people. His record consisted of careful notes, sketches and plans, and several of the sites were also planned by Sir Henry Dryden. The records of both these men passed to the Society of Antiquaries of Scotland. Petrie drew together his extensive first hand experience of Orkney brochs in a lecture to the Society of Antiquaries in 1866, subsequently published in 1874 and again in 1890 (Petrie 1890).

At his first brochs, Oxtro in Birsay in 1847 and Hoxa in S Ronaldsay in 1848, Petrie did not seem to understand the true nature of the structures which had been uncovered, which was scarcely surprising at this early date (Hedges 1987, Part III, 143). By 1871 and the excavation of the broch of Lingro however, the general plan of a broch had been established, and other features of broch sites were beginning to be considered. For example Petrie revealed the extent of the buildings around the broch at Lingro (Hedges 1987, Part III, 146). Anderson had already looked at the detail of buildings around the broch of Yarrows in Caithness five years previously (Anderson 1890, first published 1874, 136).

The extensive activity in Orkney in this early part of the antiquarian period was not matched elsewhere in the north until later. In Caithness in 1852 A Henry Rhind conducted a rescue excavation of the

broch of Kettleburn in advance of its destruction during agricultural improvements (Rhind 1853; EC 21 in the site catalogue). Rhind, in common with Petrie in his early excavations, did not seem fully to understand the nature of the site he had excavated, but he faithfully recorded the details on a plan. With the benefit of hindsight the plan can be seen to depict the outline of a broch with two entrances and with buildings around it, the whole contained within an enclosing wall (Figure 1). It was too early in broch studies for these features to be properly identified, and Rhind died in 1857 before he could continue any pioneering work on Caithness brochs.

Further work on Caithness brochs in the early period of antiquarian activity is associated with Joseph Anderson, then editor of the John o'Groat Journal in Wick, and later Secretary of the Society of Antiquaries of Scotland, one of the most famous names in broch studies. Anderson's major personal achievement was the excavation in 1866-7 of the broch of Yarrows, south of Wick. The excavation revealed features of the full site, including partitions within the broch and surrounding buildings. Anderson firmly identified the partitions and surrounding buildings as secondary constructions, noting under the buildings a considerable depth of stones mingled with ashes and food refuse (Anderson 1883, 229). Some other brochs were excavated in Caithness in this early period, but little record exists (Laing and Huxley 1866, 20-8; Anderson 1890). It is likely that some of these "excavations" are attributable to robbing or removal during farming operations, rather than actual excavations by eager antiquaries.

The excavation of brochs in Sutherland seems to have been mainly carried out between 1846 and 1870 under the auspices of the Duke of Sutherland, who owned most of the county. Three brochs are definitely known to have been excavated at his behest, Carn Liath near Dunrobin Castle, Craig Carril in Strath Brora, and Backies near Golspie, this last in 1846 apparently involving the Danish archaeologist J Worsaae. (Some drawings of the excavated broch at Backies are held by the National Museum, Copenhagen, but otherwise there appears to be no record.) The first two were recorded through the efforts of the Rev J Maxwell Joass of Golspie, who himself excavated the broch of Kintradwell in Sutherland sometime before 1870 (Joass 1890). Some of

Figure 1

Broch of Kettleburn

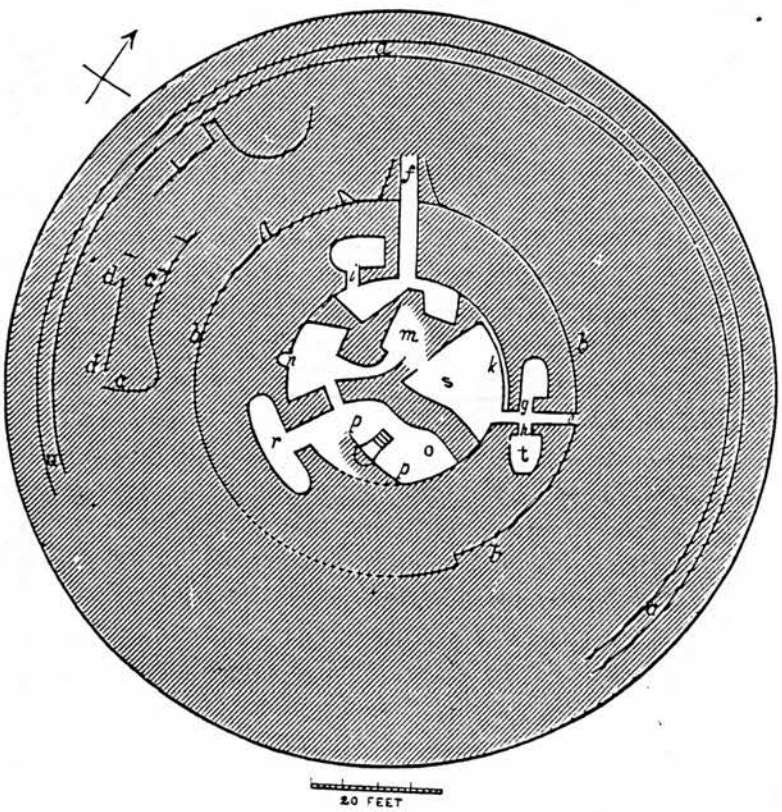


Fig. 185.—Ground plan of Broch of Kettleburn, near Wick, Caithness.
(From a Plan by Mr. A. H. Rhind.)

Source: Anderson 1883, 209

the accessions to Dunrobin Museum indicate that other brochs in Sutherland may have been explored, with no written record of the results, such as the broch at Craig Marril, apparently destroyed by the building of the railway through the Strath of Kildonan in about 1870 (SK 2 in the site catalogue).

There was considerable argument about the dating of brochs in this early period. The finding of a number of cists in the mound above the broch at Oxtro, and the absence of metalwork among the artefacts, led some observers to consider the brochs to be a Stone Age phenomenon (Laing and Huxley 1866, 56-62). Before the Rhind Lectures of 1881 Anderson took the view that the brochs were erected by the Picts, not earlier than the fifth and not later than the ninth century AD (Anderson 1890, 146, first published in 1874). Fergusson argued forcibly and well that the brochs must have been built by the Norse (Fergusson 1877). By the time of the Rhind Lectures Anderson had taken into account the finding of a number of Roman coins of first and second century AD date in the buildings around the broch of Lingro. He therefore placed the brochs in the Iron Age, particularly the first to second centuries AD, which dating, give or take a century, they have retained until very recently.

With a collection of information on brochs accumulated over thirty years at his disposal, Anderson sought in the Rhind Lectures to bring together the findings from the different areas, and to assess the nature of a broch. Certain recurring features were very distinctive, and on this basis the typical broch was defined as follows:

"Its main features of distinction by which it separates itself from all known types, are
1) that it is a circular tower of dry built masonry, wide and lofty, and enclosing within it a central area open to the sky;
2) that all its apertures, except the external opening of the entrance to the central area, look into this central court; and
3) that its chambers, stairs, and galleries are continued within the thickness of the walls" (Anderson 1883, 186).

The assumption that the typical broch was a tower was reasoned on the basis of two particular aspects of evidence: historical record, which indicated that several brochs had formerly been of considerable height; and the amount of debris enveloping the ruins. Apart from the brochs which survive today to a considerable height - Mousa, Dun Telve, Dun Troddan, Dun Carloway, and Dun Dornadilla - there is a

record of four others having had a high wall once upon a time:

1774	Burraness, Yell	20ft
	Culswick, Shetland	23ft
	Castle Cole, Sutherland	15ft
1757	Dun Alisaig, Ross	25-30ft (Anderson 1883, 185).

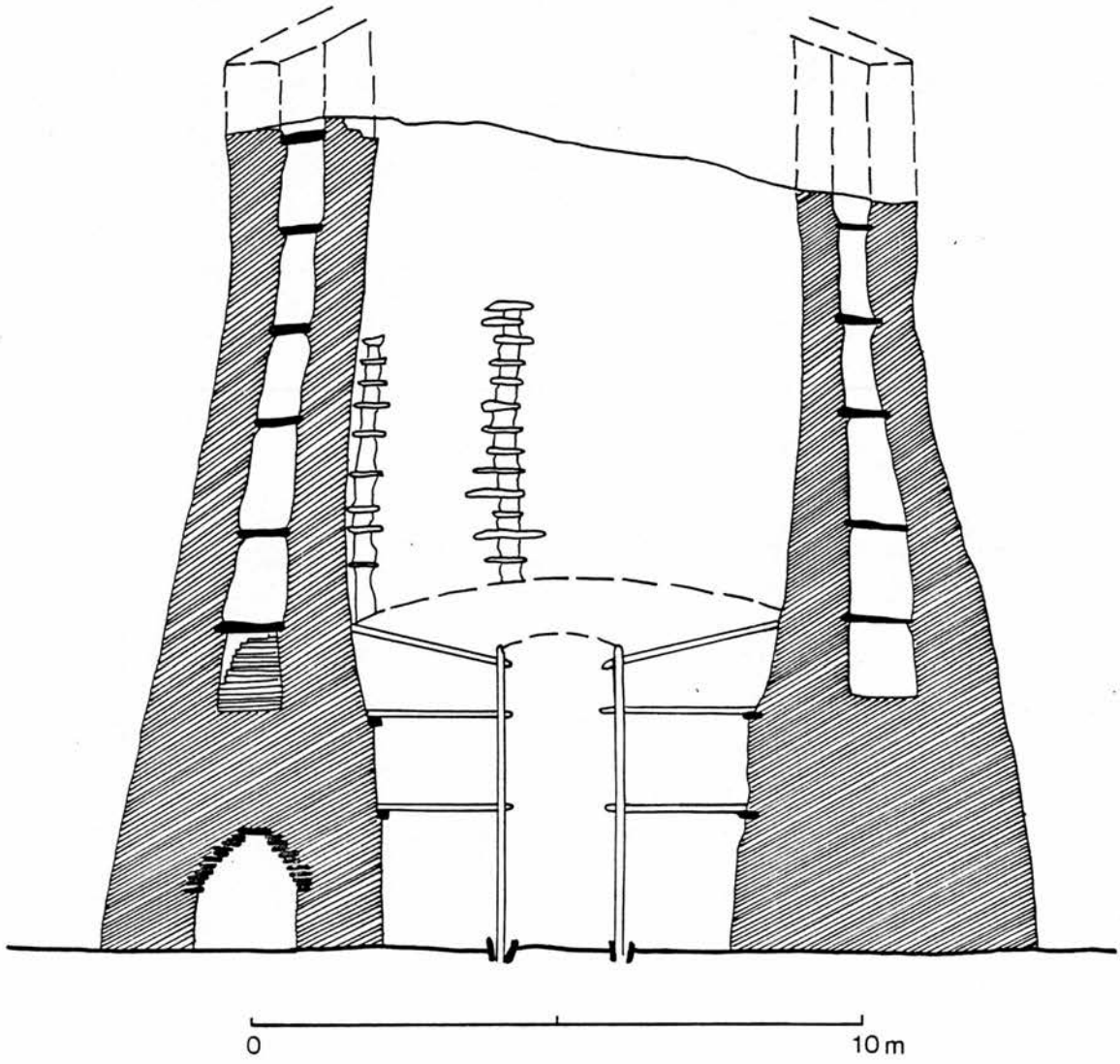
This historical record, coupled with the amount of debris around brochs, led Anderson to determine that in many brochs the original height could scarcely have been less than that of Mousa. Such a determination was speculation only. The early excavations had produced no evidence, either for a high wall, or for the roofing of brochs. Indeed these aspects are still problems today. In addition, Anderson took no account of the known occurrence of buildings around brochs and their potential contribution to the apparent amount of debris enveloping broch ruins.

Anderson had narrowly defined the broch both in form and in date. It was to prove to be a remarkably persistent definition, still recognisable in modern definitions of the typical broch (Hamilton in Rivet 1966, 114; MacKie in Fowler 1975, 73; Figure 2).

After Anderson's masterly bringing together of the evidence on brochs, interest in their further investigation waned. Perhaps it was felt that the mystery of brochs had been solved, and there was no particular need for further excavation. There was one notable exception to this general slackening of interest. In the 1890s and 1900s there occurred a wholesale digging out of brochs in a restricted area of east Caithness (excavation is an inappropriate word here). Altogether fifteen brochs were extensively uncovered by Sir Francis Tress Barry of Keiss Castle near Wick. Fourteen of these brochs are examined in the East Coast of Caithness section of the site catalogue (EC numbers). This intensive digging did not vary the conclusions on brochs which had been drawn by Anderson. The excavations were seen rather as confirming the established understanding.

Practically nothing about the sites was published. The only records are some fine photographs, some careful survey plans, a few notes, and a large collection of random and unstratified artefacts, which cannot always with certainty be attributed to any particular site.

Figure 2



THE PROFILE OF THE TYPICAL BROCH

Sources: Hamilton 1968, 51
RCAHMS 1946, no 1206 (Mousa)

Nonetheless the Tress Barry excavations in Caithness are very important. They revealed the complex detail of a large number of broch sites in a restricted geographical area. The details which Tress Barry uncovered actually pose many questions for the understanding of brochs established by Anderson. This was not recognised at the time, because archaeological thought at that period chose only to consider the features which conformed to the established rule, and to ignore anything which did not, as being either secondary modification or irrelevant.

During all of this intensive activity in the north of Scotland spanning a period of fifty to sixty years, little or no attention was given to structures on the west coast which have subsequently been firmly identified as brochs, with the exception of the drawings and descriptions by Captain Thomas of the duns of the Outer Hebrides, including a class of brochs or "Pictish Towers" (Thomas 1890, first published 1874). After the turn of the century and the production of the RCAHMS inventories of Sutherland and Caithness (1911a and b), interest in northern brochs subsided altogether and the range of monuments on the west coast began to be investigated. In terms of broch studies it was a shift of emphasis from the main area of broch occurrence to more peripheral areas of broch distribution. This shift of emphasis to the periphery was to persist for almost the next sixty years.

During the period of the First World War four brochs on the west coast were excavated, two in Skye by the Countess de Latour, and two in Glen Beag by Alexander Curle (Macleod 1914-5; Callander 1920-1; Curle 1915-6, 1920-1). The de Latour excavations of Dun Beag (IS 24 in the site catalogue) and Dun Fiadhairt (or Iardhard) (IS 17 in the site catalogue) provided information on the structure of brochs in the west plus a few interesting finds.

The Curle excavations of two of the best preserved brochs in Scotland, Dun Telve and Dun Troddan, were reasonably advanced in technique, but the publications were short. The Dun Troddan excavation had major significance for today's popular image of the typical broch, because Curle found a ring of post holes within the broch, roughly concentric with the wall face and some 6ft (1.8m) within it. This discovery gave

rise to much speculation in succeeding years in connection with scarcements, floors and roofs. As time passed the post holes at Dun Troddan became interwoven into the definition of the typical broch. Typically, depending on the viewpoint adopted, a broch is seen as having either a wooden balcony floor with its inner edge resting on a ring of posts and its outer edge on a scarcement, and/or a wooden roof similarly supported (Graham 1946-7, 69; Young 1961-2, 173; Hamilton in Rivet 1966, 126; MacKie in Fowler 1975, 76; Feachem 1977, 162; Harding in Miket and Burgess 1984, 209; Figure 2). Only Graham asked whether the arrangement obtaining at Dun Trodddan was necessarily the same in all brochs everywhere.

The antiquarian period of broch studies was extremely important. During this period a basic understanding of brochs was established, which was to shape and channel the future course of most archaeological thought on the subject. The main elements of that understanding have persisted to the present day.

"The class of monument was defined early in physical terms and our concept of it and approach to it has changed little since" (Hedges and Bell 1980, 89).

Much work on brochs took place after the antiquarian period, formulating and expanding ideas on the origins, development and function of brochs. But very rarely has the original concept and definition, formulated all those years ago in Victorian times, been seriously questioned.

1.2 The Inter-War Period

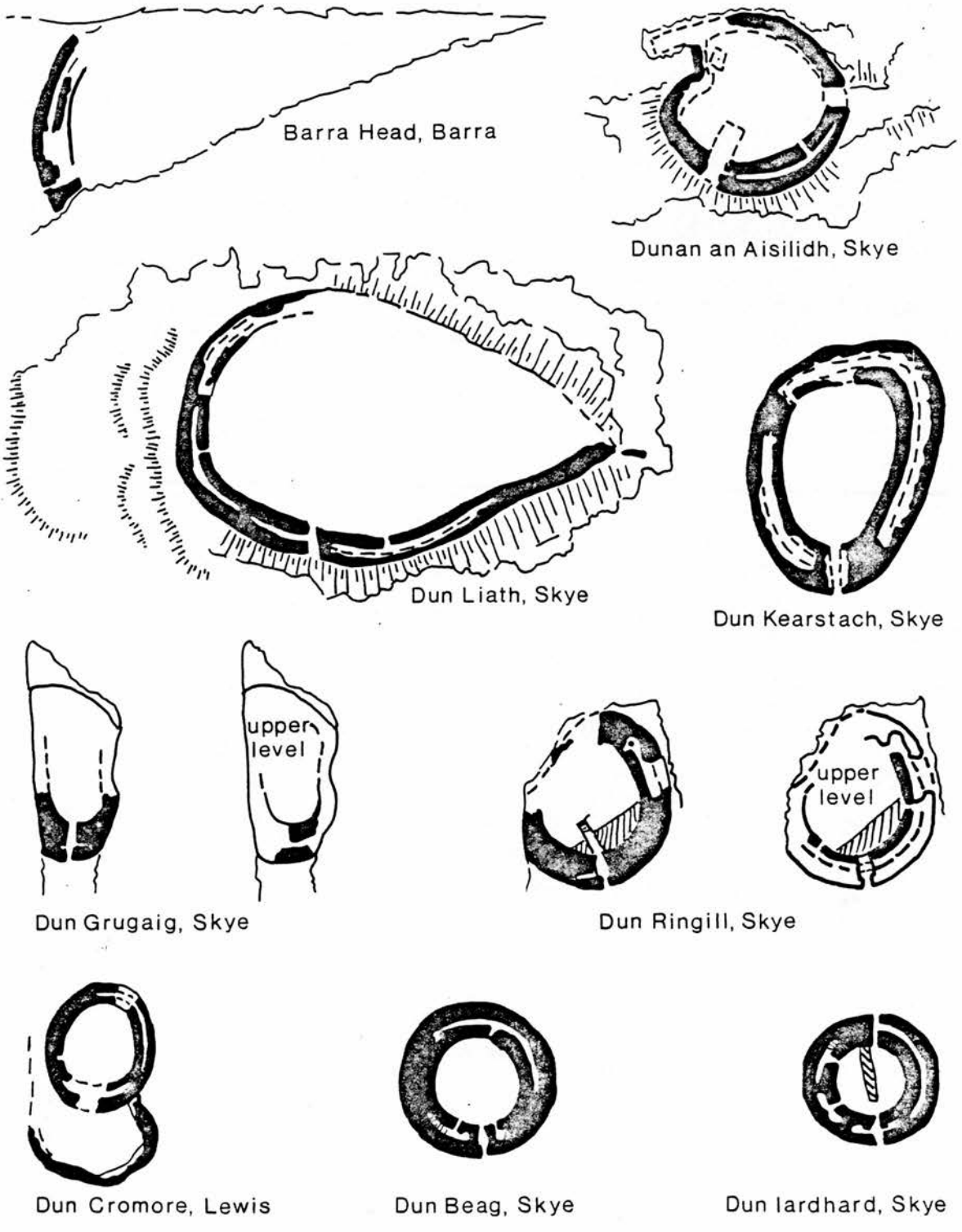
Broch studies in the inter-war period were heavily influenced by the survey work of the RCAHMS for the inventory of the Outer Hebrides, Skye and the Small Isles, published in 1928. The inventory provided detailed descriptions of a wide range of structures in the west for the first time. Some of the structures were classified as brochs on the criteria of circularity of plan, combined with a galleried wall. Others were not so readily classifiable, despite exhibiting some of the features usually associated with brochs, such as galleries, guard cells and scarcements. The term galleried dun was used to classify these structures, including within the class all galleried structures

where the ground plan was not circular, and also those sites where there was nothing more than a length of galleried wall cutting off a promontory, such as the galleried dun at Barra Head (RCAHMS 1928, 132-3, no 450). The RCAHMS produced a typological series of galleried structures beginning with Barra Head and terminating with Dun Fiadhairt (or Iardhard) (Figure 3). This was the beginning of the search for the origins of the broch amongst structures in the west, which differed from them, yet resembled them, a search which has continued to the present in the work of MacKie.

The earliest work on the origins and development of the broch was by Alexander Curle of the RCAHMS. He speculated on a possible connection between brochs and two other categories of site, galleried duns taking their form from the summits which they occupy, and the semi-brochs identified by Erskine Beveridge on Tiree (Curle 1927; Beveridge 1903, 73-83). Beveridge had introduced the term semi-broch to cover circular and sub-circular structures with hollow or galleried walls, where he considered there was no evidence for a high wall as in the typical broch. He identified four such semi-brochs on Tiree, two of which, Dun Mor Vaul and Dun a' Chaolais, have subsequently been classed as brochs, and two, Dun Boraige Mor and Dun Hiader, as duns (MacKie 1974a; RCAHMS 1980, 91-2, no 166; 92-4, no 167; 106-7, no 201; and 109-10, no 209). Curle thought that the common features of galleried duns, semi-brochs, and brochs, indicated the line of development and the probable origin of the broch, suggesting that the progenitors of the broch should probably be sought in other classes of galleried structures in the west, as the typological series drawn up by the RCAHMS in 1928 seemed to demonstrate. Neither Curle nor the RCAHMS in putting forward their views, had any evidence for the chronological priority of any galleried structure over any other. The typological series was simply based on progression from the simplest to the most advanced.

In a similar vein of stressing interconnections rather than differences, V Gordon Childe in 1935 introduced the idea of viewing all Atlantic Scotland structures in terms of cultural context. He suggested that there was a single cultural province across the Atlantic coasts of Scotland from Galloway to the northern isles, which

Figure 3



TYPOLOGICAL SERIES OF GALLERIED STRUCTURES

Source: RCAHMS 1928, fig 6 (drawn to uniform scale)

he called the "castle" complex (Childe 1935, 197-205). He maintained that within this province there were both architectural and artefactual similarities, which justified viewing the province and its structures as a cultural whole. The structures, whether brochs or duns, could be grouped together as a very miscellaneous assemblage of stone built forts, with the broch possibly the culminating point in the development of the "castle" type. Childe suggested that the artefactual record indicated that the "castles" were built by invading forces from south-west England and that they should be seen as the strongholds of Celtic chieftains. The artefacts he drew attention to were the long-handled bone weaving combs from broch sites, which he paralleled in finds from the Glastonbury lake village. This novel idea of south-west English parallels was to be taken up and greatly expanded later by MacKie.

Whereas the image of the typical broch was formed and hardened in the antiquarian period, ideas on the origins and development of the broch structure first began to appear in the inter-war period, although it was to be another three decades before these ideas were to become enshrined in popular belief about brochs, as a result of the work of MacKie. Brochs in general had begun to be assessed and analysed from a standpoint peripheral to the main nucleus of distribution. Such a development was possibly not surprising in the 1920s, given that the archaeological work of the period was concentrated on the west coast, but the emphasis on brochs in peripheral areas was to continue.

1.3 The Modern Period

The modern period saw a growth in broch studies unequalled since the early part of the antiquarian period nearly one hundred years previously. The growth took place both in detailed study of individual sites or groups of sites, and in general syntheses which sought a full understanding of the nature, function, origins, and development of the brochs. A number of brochs and possible related structures were excavated (see Tables 1-7, pp36-9 below). The inventory of Orkney and Shetland (RCAHMS 1946) was published, completing the RCAHMS record of brochs in the north. Conflicting viewpoints on the point of origin of brochs were expressed.

Most of the excavation work in the modern period took place in areas peripheral to the main distribution of brochs in the north mainland and Orkney. These excavations, in Shetland and on the west coast, were used by Hamilton and MacKie to argue radically different viewpoints on the point of origin of brochs. The only other excavation to take place in this period was at Crosskirk in Caithness between 1966 and 1972. There was a lengthy break in the excavation record in Orkney between the inter-war excavations at Midhowe and Gurness and the recent excavations at Bu, and at Howe near Stromness.

The first syntheses of the period appeared together in about 1947 (Graham 1946-7; Scott 1947). Angus Graham, with the advantage of inventories for the majority of the areas of broch occurrence, brought together the most complete summary of broch features since Anderson's Rhind Lectures in 1881, including a full assessment of original height and roofing. Two of his major conclusions were that brochs may have varied in height but there was no reason to exclude any of them from the general class of "tower"; and that a comparison of ground plans indicated that there could be two strains of broch, a western and a northern, which differed generally in size of internal diameter.

Sir Lindsay Scott continued this new theme of possible variations in brochs, but selected as the criterion of sub-division, the factor of wall height. He did not think there was sufficient evidence for concluding that the majority of brochs had been tall towers (Scott 1947, 10-5). He proposed instead three sub-divisions of brochs based on likely original height: simple farmhouses with low walls (the majority); strongly defended farmhouses; and only a few towers of Mousa proportions. He saw this as a chronological series with Mousa being a late development.

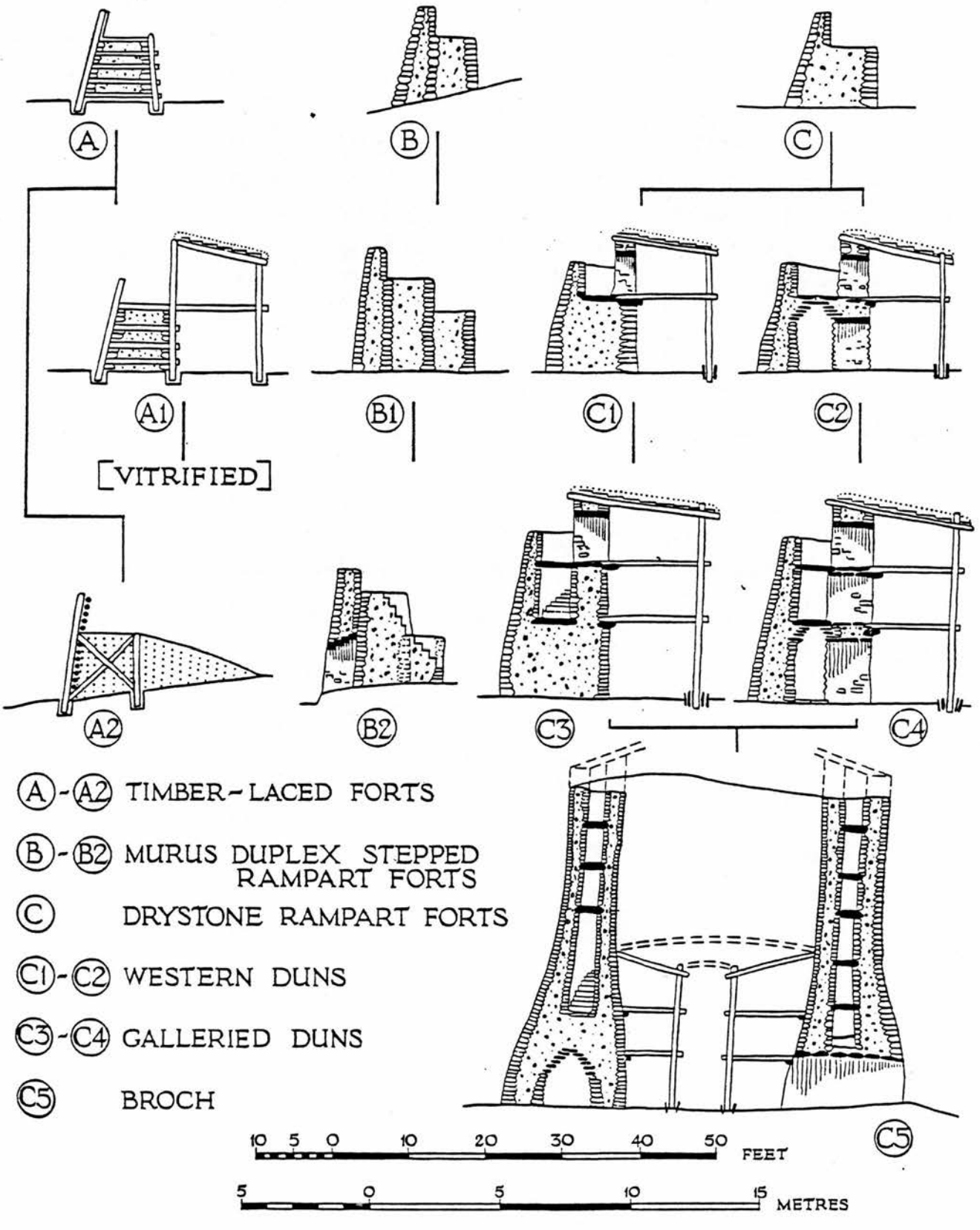
Later Young expanded on the theme of chronological variation in brochs, identifying Broch I and Broch II sub-types. She thought Broch I was earlier and was distinguished by larger diameters and flat locations, whereas Broch II was later, distinguished by smaller diameters and naturally defensive locations. Broch I she reckoned to occur only in the northern isles, Caithness, and the east coast of Sutherland, while Broch II had a wider distribution encompassing both the north and west (Young 1961-2).

It is possible to criticise the arguments in all three of these syntheses. For example, the original height of brochs seems to be an intractable problem no nearer solution today, and there is no independent evidence for the prior dating of brochs with larger or smaller diameters. Nonetheless these syntheses are significant as a group, for they are evidence of a subtle change which took place in thinking about brochs in the modern period. The concept of the typical broch was still intact despite Scott's attack on its tower-like proportions, but it was slowly being recognised that there could be sub-divisions of the class, either on the basis of structural characteristics (Graham), function (Scott), or chronology (Young). Euan MacKie over the latter part of the modern period was to develop this aspect of variation much further, offering a chronological and structural progression of brochs from western progenitors, which he attempted to support by specific excavation evidence.

In the mid-1960s a debate began about the origins of brochs which still continues in the literature today. JRC Hamilton had published in 1956 the results of the excavations at Jarlshof, Shetland, where he had briefly mentioned that he considered that the broch had been built by a "higher class" of people, whose pottery compared closely with that found at the brochs of Lingro and Ayre near Scapa Flow in Orkney (Hamilton 1956, 46-8). He saw Scapa Flow as the most natural anchorage for migrants sailing up the west coast of Britain, and identified affinities in the pottery with the late Iron Age pottery of Meare in south-west England (an echo of Childe's view of 1935). Following the excavation of the broch of Clickhimin, Shetland, Hamilton expanded this theory further, postulating an elaborate sequence of structures which culminated in the development of the broch (Figure 4); suggesting an early migration from the continent via south west England; and maintaining an Orkney origin for brochs (Hamilton 1968, 51, 92 and 98). Hamilton's only evidence for his theories were deductions on the basis of structural characteristics and perceived affinities in pottery.

Euan MacKie meantime had embarked on an extensive programme of research aimed at determining a plausible sequence of development both for brochs and wheelhouses (MacKie 1965, 95). MacKie's research was the most sustained study of brochs since the antiquarian period, and

Hamilton's Structural Sequence Culminating in the Broch Figure 4



Source: Hamilton 1968, 51

was unique in that he sought to support his hypotheses by the excavation of selected sites. The basic principles of his theory of broch evolution, developed over a twenty year period, may be summarised as follows:

(1) the broch developed in the west of Scotland;
(2) its progenitors should be sought in a type of structure labelled a semi-broch by MacKie, otherwise known as a C- or D-shaped galleried dun (Dun Ardtreck, Skye (IS 27 in the site catalogue) and Dun an Ruigh Ruaidh, Wester Ross, both of which were excavated by MacKie, are examples of his semi-brochs);
(3) it originated as the result of a combination of the ideas of natives and of migrants from south-west England (migrants were indicated to MacKie by pottery styles and particular artefacts);
(4) it was a tower-fort, probably designed for short term refuge for a large number of people; and
(5) as it spread to the north it changed from a large diameter ground-galleried structure to a smaller diameter solid-based structure, in response to the requirement for a taller tower for defence in flatter terrain (MacKie 1965 etc)

In some ways the theories of Hamilton and Mackie had remarkable similarities. Both envisaged the typical broch emerging at the end of a process of structural evolution, and both looked to migrants to give the necessary impetus for the development of such a structure. But they differed radically on the point most crucial to both their theories, the area of origin of the broch, the former preferring Orkney, the latter the west coast.

Mackie in his research sought to demonstrate the primacy of the semi-brochs on the basis of radio-carbon dates obtained at Dun Ardtreck and Dun an Ruigh Ruaidh in comparison with those for Dun Mor Vaul. He obtained the following dates:

Dun Ardtreck, rubble foundation		55±105 bc
Dun an Ruigh Ruaidh, postholes		275±80 bc
	primary floor	135±80 bc
	primary hearth	30±60 bc

Dun Mor Vaul, primary clay floor in
broch wall gallery 60±90 ad
(MacKie 1969, 17; 1974a, 92-5 and 228-31; 1980, 77).

MacKie maintained that the primacy of the semi-brochs was demonstrated by these dates. But there were no comparable radio-carbon dates from the north at the time to allow determination of whether western brochs represented by Dun Mor Vaul were earlier than northern brochs. There have been those who have disagreed with MacKie's theory of the western origin of the broch (Caulfield 1977-8), and recent radio-carbon dates from northern broch excavations have been much earlier than the dates obtained at Dun Mor Vaul (Hedges and Bell 1980, 90; Hedges 1987, Part I, 117; Fairhurst 1984, 160-3).

The modern period in broch studies was characterised by two main trends of thought. First the possibility of variation in brochs was noted but tentatively explained in different ways. Second there was marked incredulity about the possibility that brochs could have been a purely local invention. External influences were sought to explain what appeared to be the relatively sudden appearance and development of the broch in about three centuries from c100BC to c200AD. The perspective on brochs, particularly in the latter part of the modern period, was very much from the outside looking in, not only in terms of external influences, but also in terms of the physical locations selected for detailed study, which were well outside the area of the greatest concentration of brochs in Caithness, Sutherland, and Orkney. But some new ideas were beginning to emerge towards the end of the modern period with the excavation at Bu in Orkney, and Caulfield's reassessment of the quern evidence in relation to brochs (Hedges and Bell 1980; Hedges 1987, Part I; and Caulfield 1977-8). Broch studies were about to enter a new phase redressing the balance somewhat between research on the periphery and research in the core.

1.4 New Ideas

Towards the end of the 1970s it may be said that a new phase of broch studies opened, which when viewed in retrospect from the future may prove to be a very significant turning point in archaeological thought

on brochs. The new phase is characterised by two main themes:

(1) a shift in emphasis from the west to the northern area of broch concentration; and
(2) the introduction of new dimensions and flexibility to the study of brochs.

The first development in this phase of new ideas was an assessment of the quern evidence from brochs (Caulfield 1977-8). This provided the first serious challenge for many years to MacKie's assertion that brochs had developed in the west from semi-broch progenitors. Caulfield argued that the changeover from the saddle quern to the rotary quern was a major technological advance in the Iron Age, and the type of quern present on sites could be used as a tool to divide Iron Age sites into Pre-Replacement (earlier) and Post-Replacement (later) phases. In a broch context he suggested that both Pre- and Post-Replacement sites and levels could be recognised, concluding that the quern evidence pointed to brochs in the north being earlier than brochs in the west. The reverse situation could only have applied, if there had been a time lag between the introduction of the saddle quern in the west and its arrival in the north. Caulfield thought such a time lag was unlikely, and on the basis of quern evidence brochs appeared to have originated in the north.

It is possible to criticise several aspects of Caulfield's assessment of the quern evidence. He himself pointed out the appalling difficulties in identifying types and contexts of querns from old excavation reports. Manipulating the available evidence required much assumption, inference and interpretation. Nonetheless the paper provided an interesting new source of evidence and a new view in the old argument over broch origins, although the conclusions which Caulfield drew required some more substantial support. Caulfield's paper was extaordinarily well timed in this respect, in that in 1978 a rescue excavation of a mound in Orkney produced radiocarbon dates which supported the conclusion that brochs in the north were earlier than those in the west.

The excavation at Bu in Orkney was undertaken on an emergency basis and accomplished in a five week period which seriously restricted the

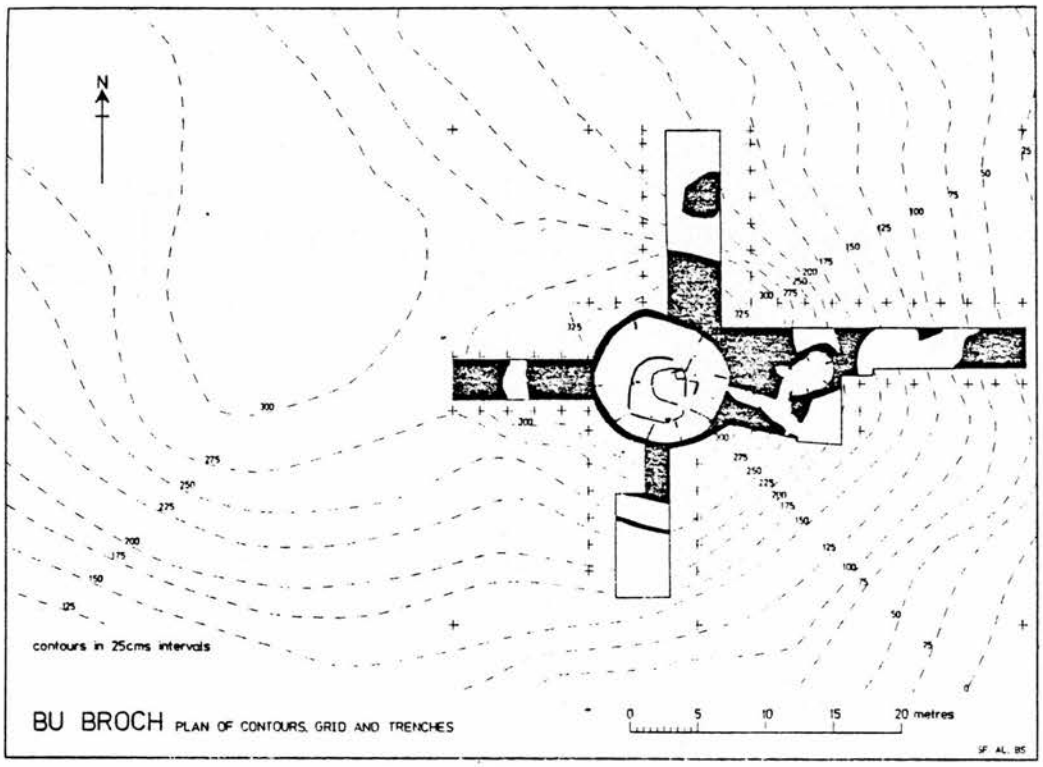
scope of the work. Prior to excavation the mound was thought to contain a small cairn. The site proved in fact to be a broch (Hedges and Bell 1980; Hedges 1987, Part I). The wall of the broch was composed of three skins, of which the outer was a definite addition. There were indications of some buildings around the structure, but no ramparts or ditches were located. Two radiocarbon determinations for the broch phase of the site were obtained from animal bone: 2440±65 bp and 2460±80 bp, indicating to Hedges and Bell an occupation date of about 600 BC (Hedges and Bell 1980, 90; Hedges 1987, Part I, 93 and 117).

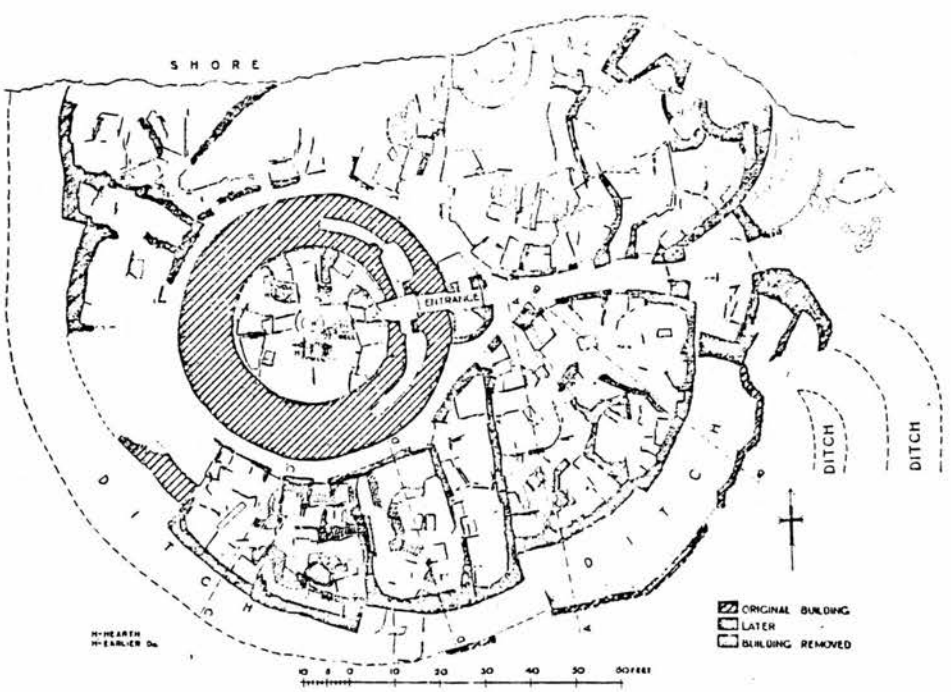
Hedges and Bell concluded that Bu was a simple example of a broch, but that it had every right to appear on a distribution map of Orkney brochs, possibly more right than many of the brochs which would normally be shown. They suggested that there may have been a continuum of brochs in Orkney spanning as many as eight centuries, from the simple, isolated farmhouse of Bu to the nucleated, heavily defended settlement of Gurness (Hedges and Bell 1980, 93; Figure 5). They maintained that the buildings around Gurness should be viewed as contemporary with the broch. Since then, excavations at Howe, Orkney, have led its excavators to comment that

"the emphasis in Iron Age studies must change to include surrounding buildings as an integral part of the broch settlement" (Carter et al, 1984, 72).

Such an early date as 600 BC for a site identified as a broch was clearly a direct challenge to what had become almost the prevailing view following MacKie's research, that brochs had developed in the west from semi-broch progenitors. MacKie's radiocarbon dates for the sites which he identified as semi-brochs were much later than those obtained for Bu (pp18-9 above). Hedges and Bell, possibly aware of the radical nature of such an early date and slightly intimidated by its implications, conceded that it might be possible to redefine Bu as a "defended roundhouse" or a "proto-broch" rather than a broch. Responding to the challenge of the early date for Bu, MacKie amplified this aspect of dubiety of classification, maintaining that no true broch could be earlier than 50 BC, and Bu must have been a low walled dun or a fortified roundhouse (MacKie 1983, 125). The flawed logic of MacKie's arguments in this respect has already been demonstrated

Excavated Brochs of Bu and Gurness in Orkney Figure 5





Source: Hedges 1987, Part I, fig 1.2 and RCAHMS 1946, fig 129

(Swanson 1984, see Appendix 1). These arguments over classification have served to open an area of dubiety over the number of structures which may legitimately carry the label of broch.

Shortly after the preliminary results of the Bu excavation were published, Barrett drew attention to the problems of classification in Iron Age studies in Atlantic Scotland particularly with reference to brochs, referring at one point to the "dictatorship of classifications" (Barrett 1981, 211). He urged that the refining of definitions in classification could not be an end in itself, and pointed out that archaeological classifications tended to direct analysis rather than being utilised for analysis, an inversion of the proper path of reasoning. He maintained with reference to brochs, that there was a case to be made for not constantly seeking only to analyse and discuss structures which conformed to the refined norm (for example MacKie's true broch), but accepting the reality of diversity and seeking to explain it adequately.

Barrett used the example of broch studies to explore some alternative approaches to archaeological interpretation. He suggested that there was a need to develop a theory of material culture in archaeological thought, which recognises not only that social actions create the material world, but also that those material creations in turn have an effect on social actions (Barrett 1981, 206). By this reasoning a monument or artefact should not be abstracted and studied in isolation from the total system which created it, and in which it existed.

It may be said that brochs have more often than not been abstracted and studied in isolation, usually as an architectural phenomenon, divorced from physical surroundings, and from functional, social, economic or political systems. There have been very few studies of brochs which have attempted to view them in detailed contexts, such as individual landscape settings, and wider land use and settlement patterns. Broch studies have tended to be either general syntheses, involving architectural details drawn from the whole population of brochs, or generalised speculations on the basis of structural and artefactual evidence from single excavations. Intensive studies of groupings of brochs in localised areas have been rare. For example, Scott (1947) attempted a very minor assessment of brochs in a limited

region, Barra and Harris, with the aim of approaching the problem of the brochs in a different way. It may be said that the area Scott selected for his purpose was of dubious value in view of its peripheral nature in terms of broch distribution, but the alternative approach he proposed was valuable.

It was not until the late 1970s that there appeared the first serious attempt to study intensively brochs in a localised area - with the aim of building a "geography" of Shetland brochs (Fojut 1980, 1982). Fojut's research, although again concentrated perhaps on a rather peripheral area, may be regarded as a significant contribution to the growing set of new ideas about brochs and new approaches to their study. It was an attempt to understand a set of brochs in their local economic-environmental sphere by means of assessing a number of geographical criteria, such as soils, solid geology, climate and natural vegetation. This novel assessment of landscape context, taken with Caulfield's assessment of quern evidence, and Barrett's theory of material culture, makes the case that there are ways of approaching an understanding of brochs, other than the single traditional approach of structural analysis favoured so strongly in the past. (Fojut's research is reviewed in Chapter 21.)

Between 1966 and 1972 the broch of Crosskirk in Caithness was excavated, although the report of the excavation did not appear until much later (Fairhurst 1984). The Crosskirk excavation was the first serious excavation of a broch in Caithness, where the largest number of identified broch sites occur (see Chapter 4). Prior to Crosskirk the only excavations of brochs in Caithness had been those before 1870; the Tress Barry explorations of the 1890s and 1900s; and a swift rescue excavation at Killimster (also called Skitten) in advance of aerodrome construction in 1940 (EC 17 in the site catalogue). Crosskirk, along with the excavation at Bu, and the not yet fully published excavation at Howe in Orkney (Carter et al 1984; Smith forthcoming), represents a dramatic shift in the balance of excavation evidence, constituting for the first time a solid body of evidence from the major area of broch distribution in the north, to set against MacKie's excavations on the west coast at the semi-brochs of Dun Ardtreck and Dun an Ruigh Ruaidh, and the broch of Dun Mor Vaul.

The wall of the broch at Crosskirk proved to be constructed of a core of earth, rubble and boulders faced with stone. There were buildings around the broch which exhibited several phases of occupation and reconstruction, and the broch appeared to have succeeded earlier occupation on the site, possibly a promontory fort. The radiocarbon determinations which were obtained suggested to Fairhurst that the earlier occupation had been about 400 BC and the broch had been developed about 200 BC (Fairhurst 1984, 164-8). As with Bu, MacKie argued that Crosskirk was not a true broch, since it was earlier than 50 BC (MacKie 1983, 125). The seemingly unusual nature of the wall construction at Crosskirk could lead some to agree with him, but Fairhurst concluded that Crosskirk was a broch "in the ordinary sense of the word" (Fairhurst 1984, 181), and that the case was now strong for the Old Red Sandstone area of Caithness and Orkney being the region where the early brochs emerged. He suggested that much could be learned about brochs in the Caithness-Orkney region from a careful study of existing monuments, from a reappraisal of old excavation reports, and from intensive fieldwork, which would support and amplify the evidence from Crosskirk, without the need for costly excavation. (The excavation at Crosskirk is reviewed in Appendix 3.)

Most recently attention has been drawn to the possible significance of the stone internal furnishings within Orkney brochs.

"There is no evidence that they were secondary: and it is now suggested they were used by the original broch occupants" (Hedges in Renfrew 1985, 162).

According to Hedges the courtyard at Bu bore incontrovertible testimony to the originality of the furnishings found in other brochs and previously described and dismissed as secondary. He noted that the floor plans in Orkney brochs seem to fall into two clear types, one unit dwellings, and those which were divided. The implication of this claim by Hedges is clear - internal furnishings, as well as outbuildings, may have considerable significance in elucidating broch function.

In summary the new ideas about brochs emerging in the decade of the 1980s are as follows:

(1) there is growing evidence that some brochs in the north are much

earlier than the date range to which brochs have been traditionally assigned (Caulfield 1977-8; Hedges and Bell 1980; Fairhurst 1984; Hedges 1987);

(2) there is now some dubiety about the nature of the majority of structures traditionally classed as brochs, since recently excavated examples do not seem to match the perception of the typical broch, and there have as a consequence been attempts to assign them to other classes (Hedges and Bell 1980; MacKie 1983; Swanson 1984);

(3) the structures traditionally classed under the single heading of broch may not conform to a single type in terms of form, function and chronology, but may instead form a range of structures, the differences possibly exemplified by the two extremes of Bu and Gurness (Hedges and Bell 1980);

(4) the surrounding buildings should be included in analysis as an integral part of broch settlement (Carter et al 1984);

(5) variety in Iron Age structures in Atlantic Scotland may be very significant, and deserves to be adequately studied and explained (Barrett 1981);

(6) there may be considerable value in studying Atlantic Iron Age structures in their contexts rather than as a set of abstracted structural phenomena, from the point of view of reaching an understanding of the various systems within which the structures functioned (Barrett 1981; Fojut 1980, 1982);

(7) the existing body of evidence for brochs, largely in the form of excavated monuments and old excavation reports, may have new information to reveal, if reassessed in the light of the evidence from the most recent excavations (Fairhurst 1984);

(8) the existing field survey evidence for brochs may be inadequate, and much may remain to be learned from intensive field survey of sites included within the class (Fairhurst 1984);

(9) internal furnishings previously dismissed as secondary may have been contemporary with the original broch occupation, and should be included in analysis of the broch's primary function (Hedges in

Renfrew 1985).

These new ideas about brochs, emerging from different sources over a short period of time, indicate the existence of a number of possible discrepancies in the traditional understanding of brochs, first established by Anderson, and subsequently refined and elaborated over the years. They question the form, function, and chronology of brochs, aspects long thought to have been indubitably established. They also suggest that approaches to the study of brochs in the past have been too narrow. Taken as a set, the new ideas make a strong case for a radical review of the entire subject of brochs to take place, a suggestion first made by Hedges and Bell in 1980, following the excavation at Bu (Hedges and Bell 1980, 89).

CHAPTER 2 THE QUALITY OF THE INFORMATION BASE

In view of the length of time over which brochs have been studied and discussed, it might seem reasonable to assume that the information base on brochs has been of sufficent quality to allow a meaningful debate to take place. To make such an assumption would however be incorrect. The information base on brochs is in fact very poor in a number of crucial areas:

(1) detailed survey information, including basic site plans at large scale;
(2) excavation coverage in terms of area and value;
(3) locational information such as past environmental contexts; and
(4) a detailed assessment of the past total of broch numbers and distribution.

With reference to (3), there has been no detailed gathering of environmental information specifically in connection with brochs, other than Fojut's work in Shetland (reviewed in Chapter 21). With reference to (4) there has been no intensive search to identify the likely number and locations of destroyed sites, although the well known destructions have been recorded (Graham 1946-7). In particular areas, such as the Caithness Plain and Orkney, the number of destroyed sites could be higher than that presently recorded, as a result of substantial agricultural improvements over the last two centuries. There are also a large number of doubtful sites in these areas, which may or may not be brochs, the existence of which affects perceptions of spacing and distribution. There has been no attempt to define criteria which may help to classify these doubtful sites with more certainty. The gathering of information on brochs over the years has been restricted to (1) and (2) above, and there are very serious gaps in the record on both of these counts.

2.1 The Survey Record

There have been various attempts over the past century to estimate the number of brochs in Scotland which exist, or are known to have existed (see Appendix 2). The first enumeration identified 374 brochs

(Anderson 1890, 178-98). The information was gathered from various local sources, and was published with a distribution map. In the next eighty years three further attempts were made to estimate the total population (Graham 1946-7, 91-9; Hamilton 1968, 172-81; MacKie 1973 vol 2). The three attempts varied in detail and objectives. Graham provided the first full list of brochs for fifty years. He identified 304 certain brochs, 67 broch sites, and 141 uncertain broch examples. Sites with visible dimensions and structural features were distinguished from the remainder. Hamilton provided an update of Graham's original list.

MacKie took the basic list provided by Graham and Hamilton, and expanded it into a site catalogue containing brief descriptions of each site, plus any available site plans. The site descriptions included measurements, such as diameter and wall thickness, at sites where such structural features were visible. MacKie required such measurements to develop his theory of the structural evolution of brochs. Structural features were visible for measurement at only 120 of the estimated potential population of 511 sites. MacKie's original site catalogue was never published, but he is presently compiling an updated gazetteer for publication (MacKie forthcoming).

In the absence of a detailed corpus of broch sites, information has to be gathered from a number of different and extremely variable sources. The sources are the RCAHMS inventories of ancient monuments; the OS archaeology record cards (now incorporated into the National Monument Record of Scotland); and surveys of small areas by individuals or teams. The RCAHMS have covered most of the areas of broch occurrence. The inventories, prepared over a seventy year period, vary enormously. The relevant inventories are:

Area	Public. Date	Survey Date
Sutherland	1911	1909
Caithness	1911	1910
Outer Hebrides, Skye and the Small Isles	1928	1914-25
Orkney and Shetland	1946	1928-37
Argyll 2: Lorn	1975	1966-73
Argyll 3: Mull, Tiree, Coll and Northern Argyll	1980	1971-6
Argyll 5: Islay, Jura, Colonsay and Oronsay	1984	1974-81

The OS record cards, although a useful guide, are variable in the information which they provide. Sites of antiquities were visited in the course of map preparation, and coverage of any area was dictated by the programme for map revision. Sites were sometimes planned at small scales for inclusion in maps. The cards provided a chronological check on the visible features and condition of the monuments.

Surveys of small areas may occur for a variety of reasons, such as postgraduate research, training of archaeology undergraduates, or amateur interest. Such surveys are designed to meet different purposes, and the scope and standards of survey differ. The results of the survey may, or may not, be deposited in the National Monument Record of Scotland depending on circumstances. In the area of broch occurrence Mercer has since 1976 conducted a number of surveys, generally along the north and east coasts of the mainland, in Sutherland and in Caithness (Mercer 1980, 1981, 1985). The surveys have provided basic training for undergraduates, and have been designed to update the RCAHMS inventory information, now grossly out of date. The survey records consist of site gazetteers and plans, including some plans at large scale of brochs occurring within the survey areas. In Shetland Fojut visited each potential broch site in order to accept or reject it as a broch, but did not plan the sites at large scale. In Orkney Lamb has assembled a sites and monuments record which updates the inventory information, and Hedges has produced a corpus of information on Orkney brochs (Hedges 1987, Part III). The corpus is based on available documentation, museum collections and maps, and relies on the fieldwork of the OS and the RCAHMS (1946) (Hedges 1987, Part III, 50). No new field survey was carried out for the corpus.

The survey record is probably most lacking in the major area of broch occurrence in Caithness and Sutherland. The RCAHMS inventories of Caithness and Sutherland (1911) are reputed to have been prepared by one man, who spent two pleasant summers visiting sites by bicycle. Considering the difficulties of access he must have encountered, the inventories are in fact a remarkable achievement. Each site is covered by a brief description, and an occasional survey plan is provided. In the case of brochs this was normally a silhouette or simple outline

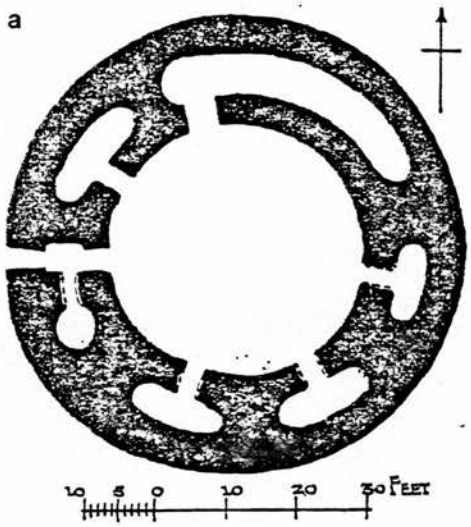


FIG. 36.—Broch, Feranach (No. 314).

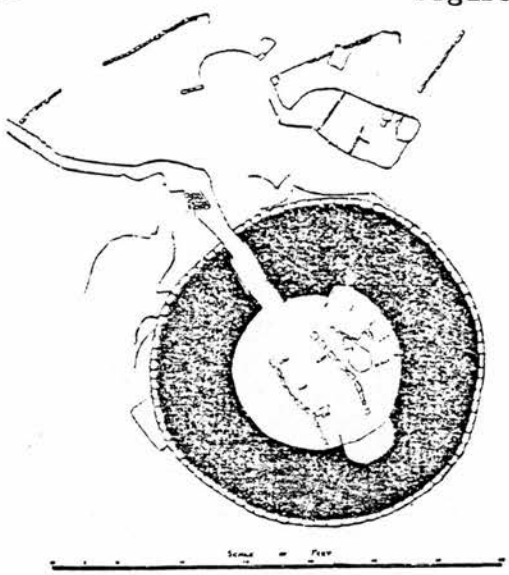


FIG. 40.—"Broch at the White Gate," Keiss (No. 516); Ground-plan.

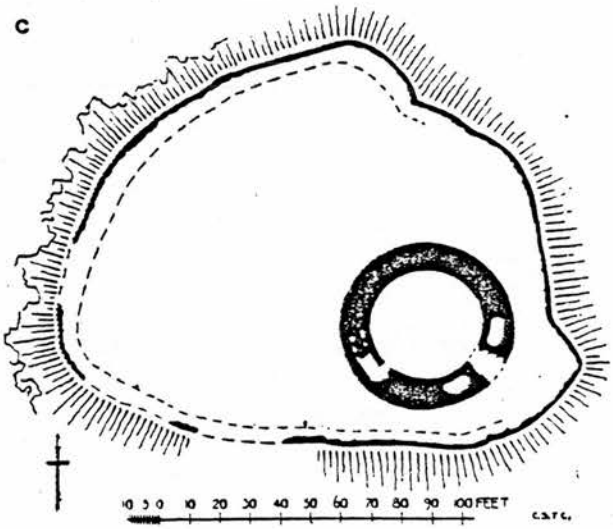


FIG. 226.—Dun Hallin (No. 509).

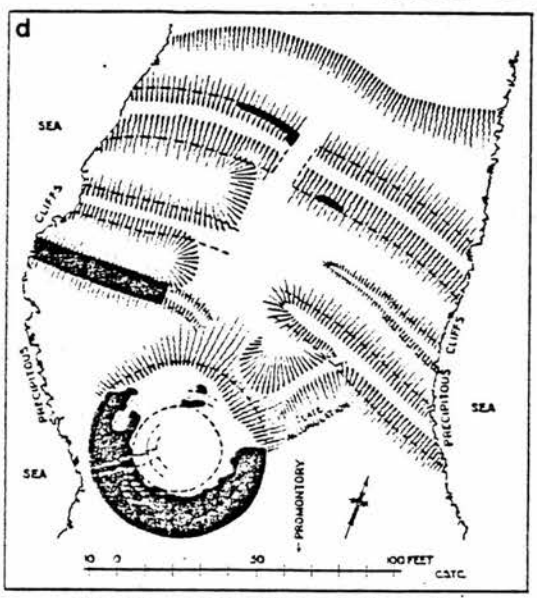


FIG. 574.—Broch of Burland (No. 1247).

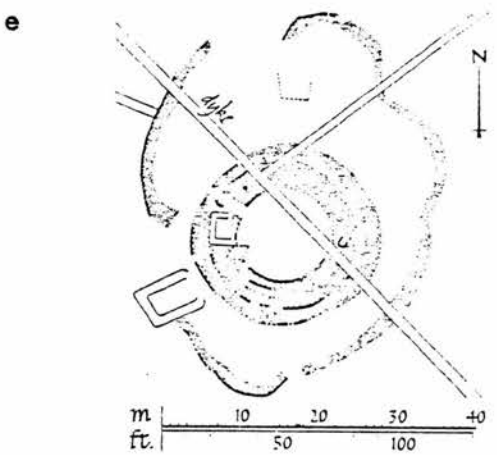


Fig. 90. Broch, Dùn Mór a' Chaolais, Tiree (No. 166)

Source: RCAHMS 1911a, 1911b, 1928, 1946, 1980

which showed intramural features, but was divorced from surroundings (Figure 6a). The exceptions were the plans of brochs in the inventory of Caithness, which were all of excavated sites, drawn at the time of their excavation. The plans of the Tress Barry sites showed a number of features around the brochs (Figure 6b). Before Mercer's recent northern surveys (Mercer 1980, 1981, and 1985), the very few plans in the inventories of Caithness and Sutherland were the most up to date survey plans available for brochs in the area.

The inventory of the Outer Hebrides and Skye, although published nearly twenty years after the inventories of Caithness and Sutherland, is little dissimilar from them. There are the same brief descriptions, supplemented by rather more plans (Figure 6c). But unlike Caithness which has seen some modern survey, the Outer Hebrides and Skye have been largely neglected as far as brochs are concerned. The most basic survey information on brochs in the area remains that of the inventory of 1928, supplemented by information gathered intermittently by the OS in the course of map preparation, and occasionally by others. A brief gazetteer of information has been produced recently for Skye, not only for brochs, but also for other possibly contemporary sites, such as duns and forts (MacSween 1984-5). The gazetteer contains brief descriptions of the sites, and plans drawn from available sources, but no new survey plans. In the Outer Hebrides there has been some recent survey and excavation work on duns and brochs by Professor Harding of the University of Edinburgh.

The inventory of Orkney and Shetland published after the war in 1946, provided more detailed information, both in site descriptions and plans, than previous inventories in the area of broch occurrence. The planning of sites was still highly selective, but those sites which were planned were frequently being placed in context, with features such as ramparts and ditches appearing for the first time (Figure 6d). A number of plans were however of the old divorced silhouette style, and excavated sites were sometimes not replanned, the plans made at the time of excavation being used instead.

The latest inventories prepared by the RCAHMS are for Argyll, and include 7 brochs in Lismore, Mull, Tiree and Islay (Argyll 2, 3 and 5, 1975, 1980, and 1984). These inventories, a culmination of the

post-war style of inventory production by the RCAHMS, are glossy, fully descriptive, and complete with detailed plans of sites where there are plannable remains (Figure 6e). It may be said that the 7 brochs occurring in the areas covered by the Argyll inventories, are as well planned and described as anyone could hope to have as a basis for research. But they are only 7 out of an estimated total of 511 possible brochs. The fact that there are not adequate survey plans at large scale of most of the brochs in Atlantic Scotland, covering the full range of structural details, surrounding features, and immediate location, is a serious gap in the available information. There is a pressing need for full detailed survey plans of all plannable broch sites.

2.2 The Excavation Record

The excavation record on brochs has already been referred to in Chapter 1. Tables 1-7 (see pp36-9 below) list the recorded excavations of brochs. Not all of those included in the tables may be regarded as excavations in the modern sense of the word, and there is no record of several which took place in the nineteenth century. The number of brochs which have been investigated to some degree is impressive, representing about 20% of traditional estimates of the population of brochs. But the total number is meaningless, for as Hedges and Bell have pointed out

"our legacy is voluminous but of limited worth" (1980, 89).

Most of the excavations took place before the second world war and indeed before the first world war.

The early excavations were usually extensive, and there is no doubt that much hard work went into digging out and revealing the main features of the sites. But the recording of information was minimal. The only record of these early excavations consists of a number of short published articles, a few notes, some survey plans, occasional photographs, and a large pile of unstratified artefacts. This poor recording of results in the past is a problem, but there is no doubt that the level and quality of information from old excavations can be improved. The reassessment of the broch of Burrian, North Ronaldsay

(Macgregor 1972-4), and the publication of the enormous inter-war excavations at Gurness (Hedges 1987, Part II), demonstrate that such an improvement is both possible and highly desirable. Fairhurst pointed out that much could perhaps be learned from a careful study of old excavation reports, as in the case of Burrian (Fairhurst 1984, 181).

It is no exaggeration to say that only six broch excavations in Atlantic Scotland may be regarded as forming a reasonably meaningful reservoir of excavation information. These excavations are in chronological order: Jarlshof in Shetland; Clickhimin in Shetland; Dun Mor Vaul in Tiree; Crosskirk in Caithness; Bu in Orkney; and Howe in Orkney (Hamilton 1956 and 1968; Mackie 1974a; Fairhurst 1984; Hedges and Bell 1980; Hedges 1987, Part I; Carter et al 1984; Smith forthcoming). The six excavations were carried out for different reasons, and the level and usefulness of recovered information varies. However this small reservoir of excavation information could possibly be extended, if many of the old excavations were to be reappraised in the light of evidence from these most recent broch excavations.

2.3 Improving the Information Base

There can be no doubt that there are many serious gaps in the information base on brochs. These have in fact acted as a major handicap to the building of theory in the past, although the existence of that handicap has not been acknowledged. Too frequently those building general theories on brochs, have placed reliance on secondary information, without returning to a detailed consideration of primary sources, of which the greatest is the sites themselves. In this way, inaccuracies and gaps in the information have been perpetuated. In order to progress further in understanding brochs, some basic improvement in the information base needs to take place. Further excavation would obviously be of great value, but is nowadays a rather expensive way of gaining information. The following three steps are suggested as a means of effecting a basic improvement in the information base on brochs, without recourse to costly excavation. They are steps which need to be carried out in any case, before a sensible excavation strategy for brochs can be formulated.

(1) There should be a detailed field analysis of every site which could conceivably be a broch, including large scale survey plans and detailed descriptions.

(2) There should be a reassessment as far as possible of old excavations, including a re-examination of any records, replanning of the sites at large scale, and cataloguing of the artefacts.

(3) There should be an attempt to gather additional categories of information relevant to understanding brochs, such as, palaeo-environmental information.

It was concluded in Chapter 1 that, following the emergence of a set of new ideas, a case exists for a radical review of brochs to take place. This chapter has sought to strengthen that case, by demonstrating that there are serious gaps in the basic information on brochs. Any review would need to include some major improvements to the information base. Without such improvements, it does not seem likely that much progress can reasonably be made towards a new understanding of brochs.

Table 1 Orkney: Excavated Brochs

Site	Date	Excavator
1 Burgar, Evie	1825	Peterkin
	1840s	Gordon (proprietor)
2 Oxtro, Birsay	1847	Leask (farmer)/Petrie
3 Hoxa, S Ronaldsay	1848	Petrie
4 Castle Bothican, Papa Westray (very partial)	1849?	Petrie
5 East Brough, Burray	1851-5	Farrer/Petrie
6 Redland, Firth	1858	Farrer/Petrie
7 Borrowston, Shapinsay	c1862	Balfour (proprietor)
8 Hunton, Stronsay	1863	Farrer/Petrie
9 Lamb Head, Stronsay (partial)	1864	Petrie
10 Manse of Harray	1865	Traill
11 Redland, Stromness	1866	Farrer/Petrie
12 Burrian (Russland), Harray	1866	Farrer/Petrie
13 Ingshowe, Firth (partial)	1866	Farrer/Petrie
14 Wasso, Sanday	1868	Dryden/Petrie
15 West Brough, Burray	1868	Farrer/Petrie
16 Knowe of Taft, Birsay	1868	Stephen
17 Stackrue, Sandwick	1870s	Watt (proprietor)
18 Burrian, Sandwick	1870s	Watt (proprietor)
19 Lingro, St Ola	1871	Petrie
20 Burrian, N Ronaldsay	1870-1	Traill
21 Dingishow, St Andrews	?	Farrer
22 Langskaill, St Andrews	?	Farrer
23 N Howe, Rousay	?	Petrie?
24 Birstane, St Ola	?	Tenant of Birstane
25 Dishero, Rendall (partial)	?	?
26 Chapel Knowe, Firth (partial)	?	?
27 Saverock, St Ola	?	Captain Thomas
28 Quoyness, Sanday	?	Farrer
29 Borwick, Sandwick	1881	Watt (proprietor)
30 Taft, Greenay, Birsay	pre-1881	
31 Eve's Howe, Deerness (very partial)	1883	Cursiter
32 St Tredwell's, Papa Westray (partial)	1883	
33 Green Hill, Hoy	1887	Cursiter/Heddle
34 How Farm, Howsgarth, Sanday (partial)	1887	Farmer
	?	?
35 Ayre, Holm	1901-9	Graeme
36 Gurness, Evie	1930-40	Craw/Richardson
37 Midhowe,Rousay	1930-6	Grant/Yorston
38 Burrian (Garth), Harray	1936	?
39 Bu, Stromness	1978	Hedges et al
40 Howe, Stromness	1978-82	Carter et al
41 Riggan of Kami (partial)	recent	Gelling

Sources: Petrie 1890; RCAHMS 1946; Hedges 1987, Part III

Table 2 Caithness: Excavated Brochs

Site and Site Catalogue No	Date	Excavator
1 Castlehill, Olrig	pre-1800?	?
2 Thrumster, Wick	pre-1800?	?
3 Thrumster Little, Wick (partial)	?	?
4 Kettleburn, Wick (EC 21) (destroyed)	1852	Rhind
5 Achvarasdal Lodge, Reay	c1865	Sinclair (proprietor)
6 Dunbeath, Latheron	1866	Sinclair (proprietor)
7 Yarrows, Wick	1866-7	Anderson
8 Brounaban, Wick	c1871	Shearer
9 Old Stirkoke, Wick	pre-1871	Farmer
10 Ha' of Bowermadden, Bower (destroyed)	pre-1874	Farmer
11 Thing's Va, Thurso (partial)	?	?
12 Ousedale Burn, Latheron	1891	Mackay
13 Wester, Wick (EC 16)	1891	Tress Barry
14 Harbour Mound, Keiss, Wick	1864	Laing
(EC 12)	1891-3	Tress Barry
15 Whitegate, Keiss, Wick (EC 11)	1892-3	Tress Barry
16 Road, Keiss, Wick (EC 10)	1864	Laing
	1893-4	Tress Barry
17 Nybster, Wick (EC 8)	1895-6	Tress Barry
18 Skirza Head, Canisbay (EC 3)	1897	Tress Barry
19 Freswick Links, Canisbay (EC 5)	1898-9	Tress Barry
20 Ness, Canisbay (EC 6)	1890s	Tress Barry
21 Everley, Canisbay (EC 4)	1890s	Tress Barry
22 Hill o'Works, Bower (EC 13)	1900	Tress Barry
23 Hillhead, Wick (EC 23)	1901	Tress Barry
24 Cairn of Elsay, Wick (EC 22)	1902	Tress Barry
25 Norwall, Wick (EC 18)	1903	Tress Barry
26 Bail a'Charn,Watten	1904	Tress Barry
27 Brabstermire, Canisbay (EC 2) (partial)	?	Nicolson
28 Hollandmey, Canisbay (very partial)	?	Nicolson
29 Cogle, Watten	1905	Davidson
30 Burg Langwell (partial)	c1910	?
31 Killimster (Skitten), Wick (EC 17) (destroyed)	1904	Tress Barry
	1940	Calder
32 Carn na Mairg, Thurso (TR 28) (partial)	1950s	Murray Threipland
33 Crosskirk, Reay	1966-72	Fairhurst

Sources: Anderson 1890, 184-188
RCAHMS 1911b
Photographic archive in the Nicolson Museum, Caithness

Table 3 **Sutherland: Excavated Brochs**

Site	Date	Excavator
1 Backies, Golspie	1846	Duke of Sutherland/ Worsaae
2 Carn Liath, Golspie	pre-1874	Duke of Sutherland
	1970s	Corcoran
	1984/6	Love
3 Craig Carril, Clyne	pre-1874	Duke of Sutherland
4 Kintradwell, Loth	pre-1874	Joass
5 Broch at Eriboll?	?	Captain Clarke

Sources: Joass 1890 (first published 1874)
RCAHMS 1911a
Disc Exc Scot 1984, 1986

Table 4 **Shetland: Excavated Brochs**

Site	Date	Excavator
1 Mousa, Dunrossness (clearing of debris)	1861	Proprietor
	1919	HM Ministry of Works
2 Clickhimin, Lerwick	1861-2	Shetland Lit Soc
	1953-8	Hamilton
3 Levenwick, Dunrossness (partial)	1880	Goudie
4 Clumlie, Dunrossness (partial)	1887	Goudie
5 Loch of Brindister, Lerwick (very partial)	1888	Goudie
6 Jarlshof, Dunrossness	1897-1905	Bruce
	1949-51	Hamilton
7 Fethaland, Northmaven	1904	Abercromby
8 Sae Breck, Northmaven (partial)	1949	Calder
9 Brough Head, Eastshore, Dunrossness (partial rescue)	1983	Strong/Haggerty

Sources: RCAHMS 1946
Hamilton 1956, 1968
Calder 1951-2
Disc Exc Scot 1983, 21

Table 5 West Coast: Excavated Brochs

Site and Site Catalogue No	Date	Excavator
1 Dun Fiadhairt (Iardhard), Skye (IS 17)	pre-1914	de Latour
2 Dun Telve, Glen Beag	1914	Curle
3 Dun Beag, Skye (IS 24)	1914-20	de Latour
4 Dun Troddan, Glen Beag	pre-1920	Curle
5 Dun Carloway, Lewis (partial)	1972	Tabraham
6 Dun Mor Vaul, Tiree	1962-4	MacKie
7 Dun Flodigarry, Skye (IS 1)	1979-82	Martlew
8 Traigh na Berie, Lewis	1985-ongoing	Harding/Armit

Sources: Curle 1915-6, 1920-1
RCAHMS 1928
Tabraham 1976-7
MacKie 1974a
Disc Exc Scot 1979-82; 1985, 63 and 1986, 46
Martlew 1985

Table 6 West Coast: Excavated Structures Identified as Semi-Brochs

Site and Site Catalogue No	Date	Excavator
1 Dun Ardtreck, Skye (IS 27)	1964-65	MacKie
2 Dun an Ruigh Ruaidh, West Ross	1968 1978	MacKie

Sources: MacKie 1965b
MacKie 1980

Table 7 Lowland Area: Excavated Brochs

Site	Date	Excavator
1 Tor Wood, Stirlingshire	1864	Dundas
2 Hurley Hawkin, Angus	1865	Jervise
	1958-68	Taylor
3 Bow Castle, Midlothian	1890	Curle
4 Torwoodlee, Selkirkshire	1891	Curle
	1950-51	Piggott
5 Leckie, Stirlingshire	1970-5	MacKie
6 Fairyknowe, Stirlingshire	1975-8	Main

Sources: Dundas 1864-6; Curle 1891-2
RCAHMS 1929, 1957; MacKie 1974b
Main 1979; Taylor 1971 and 1982

CHAPTER 3 SCOPE OF RESEARCH

It was concluded in Chapters 1 and 2 that it is time for a radical review of brochs to take place, and that improvements to the information base are critical to the success of such a review. To conduct a full review of brochs, with major improvements in the information sources, is a very large undertaking. There are very many broch sites, spread over a wide, geographically diverse, area. There are many aspects of the subject of brochs in need of review, requiring the efforts of several researchers from different backgrounds. Furthermore, the image of the typical broch has been firmly entrenched in the minds of archaeologists and public alike for over a century, and it is only very recently that the traditional understanding has been seriously questioned. In view of these facts, it does not seem likely that a new understanding of brochs can be put together, and accepted, over a short space of time.

The process of review has already to some extent begun, with the formulation in recent years of new ideas about the nature of brochs and approaches to their study. In Orkney, following the excavation at Bu and the seminal paper by Hedges and Bell in 1980, a specific review has taken place, including the publication of the inter-war excavations at the broch of Gurness, and a corpus of firmly identified brochs (Hedges 1987). Some work has also taken place in Shetland, where Fojut has looked recently at the archaeology and geography of Shetland brochs (Fojut 1980, 1982). There has however as yet been no attempt to review the subject of brochs across the wider scene of Atlantic Scotland. This thesis seeks to carry out such a review, recognising that a single thesis can be no more than a contribution to the longer term aim of achieving a new understanding of brochs.

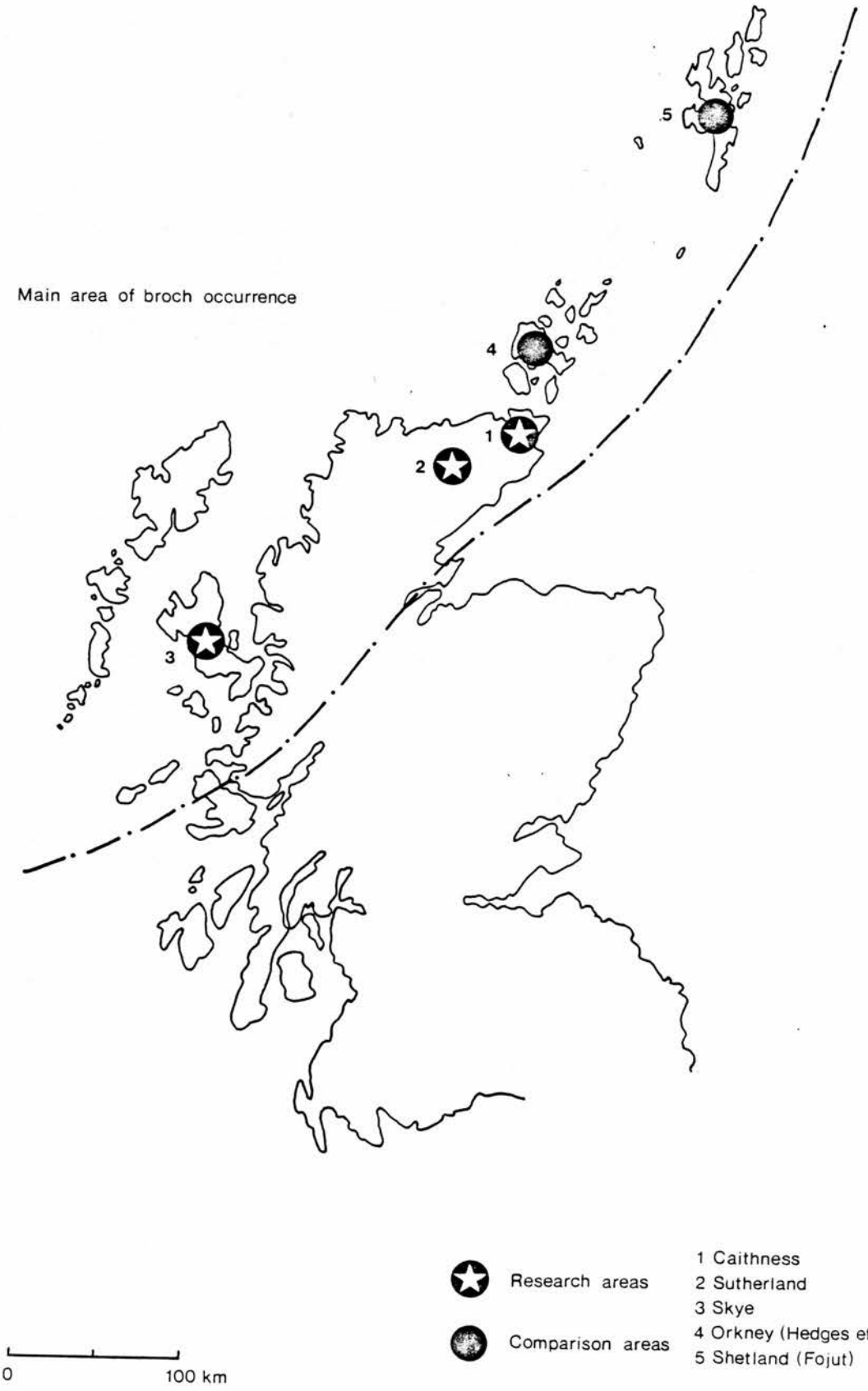
3.1 Aims and Objectives

The principal aim of this thesis is to make a substantial contribution to a new understanding of brochs across their main area of occurrence in Atlantic Scotland by:

(1) presenting the results of original research in Caithness,

Figure 7

Geographical Scope of Research



Sutherland, and Skye; and
(2) comparing and contrasting those results with the research work already carried out in Orkney and in Shetland by Hedges et al and Fojut (Figure 7).

Within this overall aim there are a number of sub-objectives. These are:

(a) to improve the information base on brochs;
(b) to recast the conceptual basis of broch study;
(c) to draw up a strategy for further research; and
(d) to draw up a strategy for selective excavation.

3.2 Methodology of Original Research

Chapter 2 proposed that the information base on brochs could be improved by three basic steps:

(1) detailed field analysis of individual sites, including survey plans and full descriptions;
(2) reassessment of old excavations, including re-examination of records, replanning of excavated sites, and cataloguing of artefacts; and
(3) gathering of additional categories of information, such as, palaeo-environmental data.

The original research content of this thesis is based on the general prosecution of these three steps in Caithness, Sutherland, and Skye.

Detailed Field Analysis

In all about 306 brochs or potential brochs appear to exist in Caithness, Sutherland, and Skye, (see Tables 9 (pp62-7), 10 (pp68-72), 18 (pp210-2), and 22 (pp335-9)), a large proportion of the traditional estimates of the total population of brochs. Caithness is at one extreme with the largest share of brochs anywhere, amounting to a potential total of about 200 sites. Skye by contrast is at the other extreme with only a handful of broch sites, about 30 in all, outnumbered by other, possibly contemporary, sites classed as duns and forts, giving a potential total of over 80 Iron Age sites on the

island (MacSween 1984-5, 1). Altogether then at least 400 sites could be involved in a full review of brochs in the three areas. This is clearly a very large number on which to carry out detailed field analysis of individual sites within the scope of a single thesis, and a sampling procedure is obviously necessary to bring this aspect of the work within manageable proportions. As one of the criticisms of past approaches to the study of brochs has been the abstraction of broch sites from their contexts (see Chapter 1), the sampling procedure adopted in the research for this thesis is the intensive study of brochs falling within selected study areas.

In Caithness there are three study areas (Figure 8):

(1) the East Coast area north of Wick (EC numbers in the site catalogue);
(2) the Thurso River area (TR numbers in the site catalogue); and
(3) the Dunbeath Water/Burn of Houstry area (DW numbers in the site catalogue).

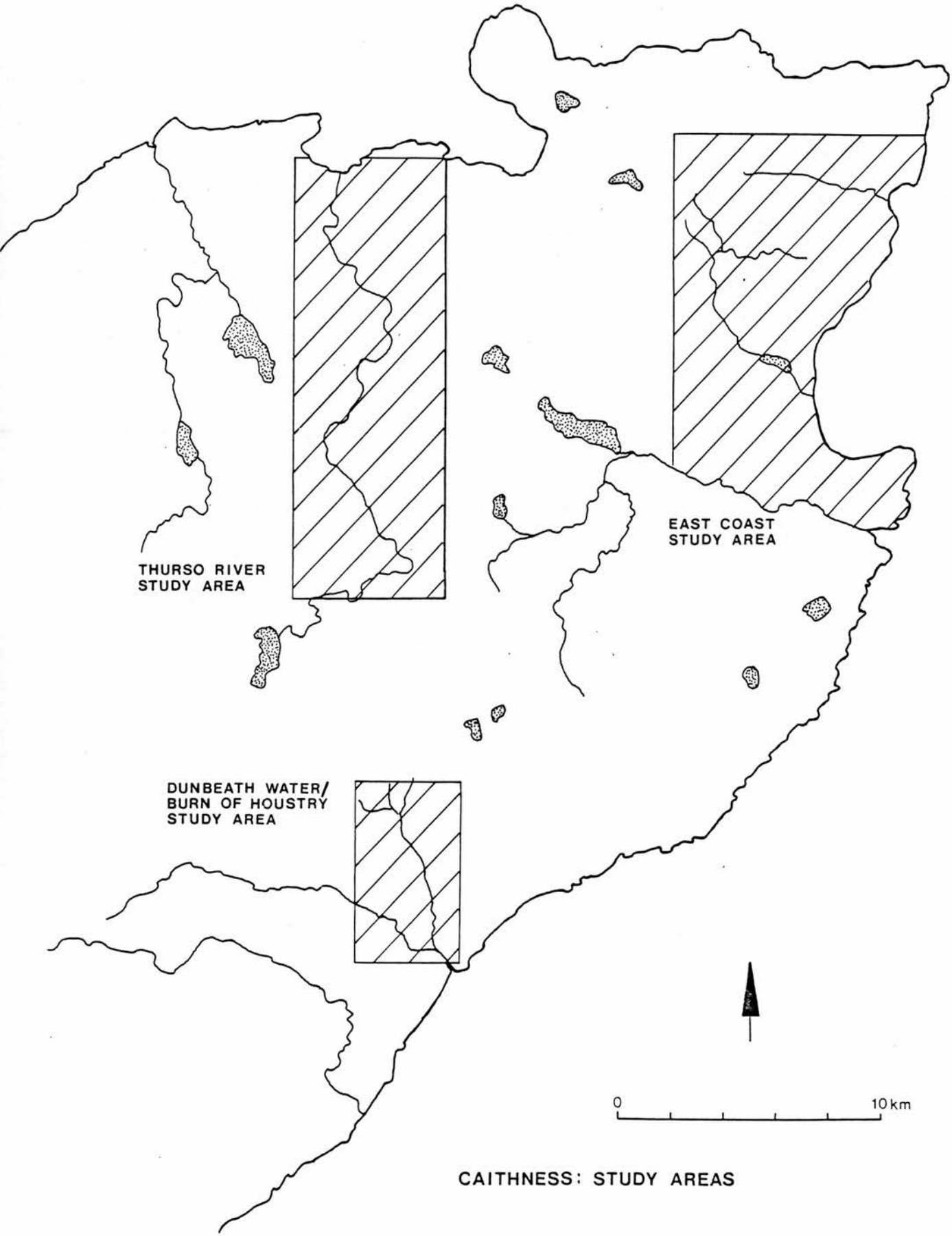
In the relatively flat Caithness Plain the drawing of boundaries to study areas is a somewhat arbitrary task. The three selected areas are spaced well apart, and their boundaries are drawn so that each contains a varying number of brochs. The total number of brochs selected by this means may be regarded as making up a very representative sample of the brochs occurring in Caithness as a whole. The East Coast area was additionally selected because fifteen of the brochs falling within it have been excavated, most of them by Sir Francis Tress Barry in the 1890s and 1900s. The existence of so many excavated sites within a restricted area offers considerable potential for a reassessment of old excavation evidence.

In Sutherland there are again three study areas (Figure 9):

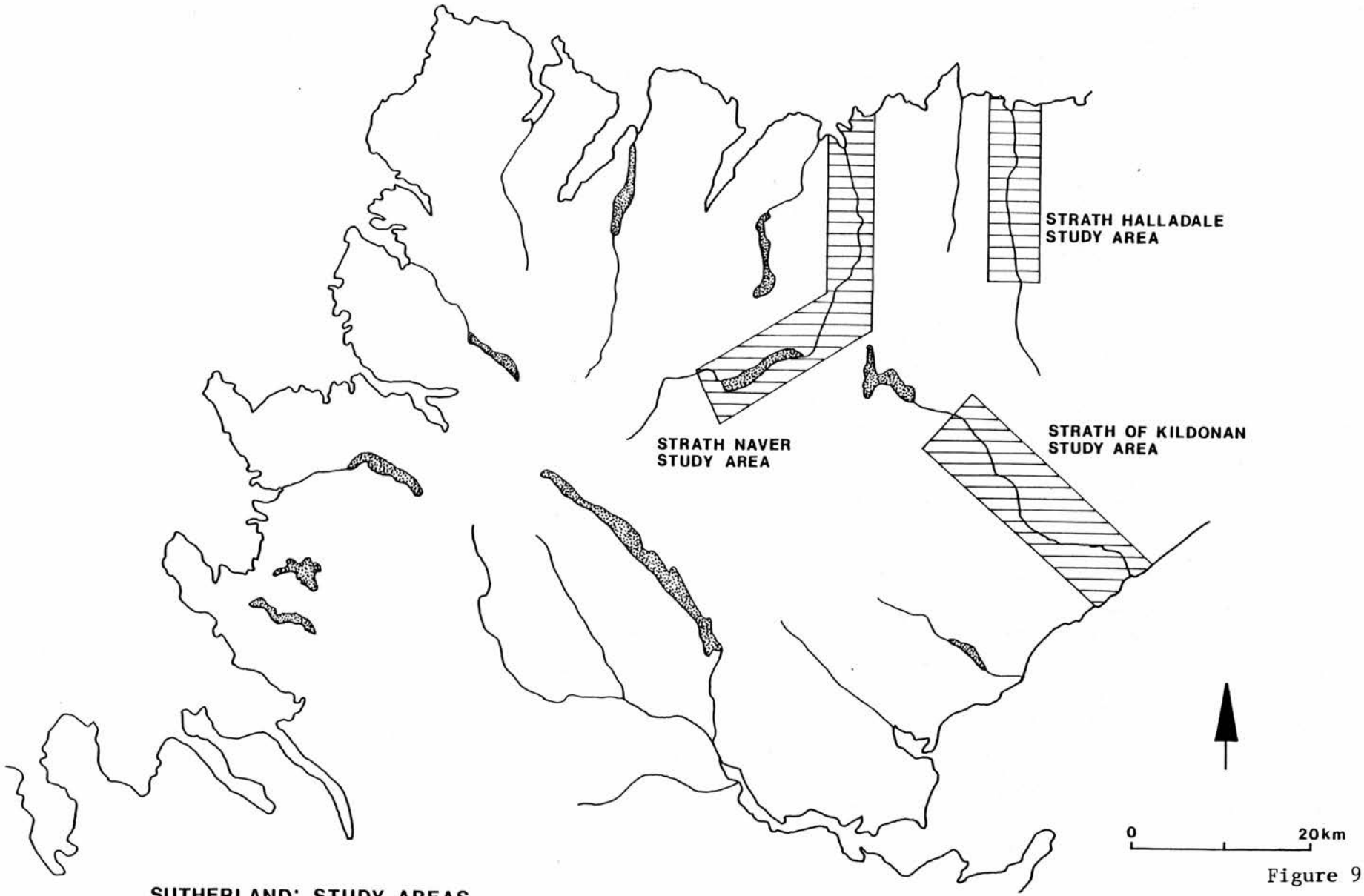
(1) Strath Naver (SN numbers in the site catalogue);
(2) Strath Halladale (SH numbers in the site catalogue); and
(3) the Strath of Kildonan (SK numbers in the site catalogue).

In the area of the Sutherland massif brochs are only to be found along narrow coastal strips, or strung out along the several sheltered river valleys which dissect the massif. The three areas selected are all

Figure 8



CAITHNESS: STUDY AREAS



SUTHERLAND: STUDY AREAS

Figure 9

major valleys, two draining to the north coast, and the third draining to the east. The two valleys draining to the north, Strath Naver and Strath Halladale, offer an interesting contrast in that they are different in geographical nature, and the former contains far more brochs than the latter. The third valley, the Strath of Kildonan, offers a further contrast in that it has an east/west orientation as opposed to the north/south orientation of Strath Naver and Strath Halladale, so that one side of the valley is distinctly north facing, with potential implications for settlement and land use pattern.

In Skye where there are so few brochs, it is not appropriate to select study areas. Instead all of the sites identified as brochs, plus some sites identified as semi-brochs by MacKie, are analysed in detail. This still represents a sample of the sites in Skye, because there are a large number of possibly contemporary sites, not identified as brochs. These other sites obviously have relevance to attempts to understand brochs in Skye, but they are only considered in general terms in the body of the thesis, and are not analysed in detail in the site catalogue.

The results of the detailed field analysis of individual sites in the seven areas identified above, may be found in the site catalogue (Volume 3). The analysis consists of the following. Within each area every upstanding structure identified as a broch by any authority, is included, plus all potential former sites of brochs, no matter how tenuous the evidence. A number of other upstanding structures are included where appropriate, either because they have formerly been classed as brochs, or it has been suggested that they are a type of site closely related to brochs, such as, the semi-brochs on Skye. For each site in the catalogue there is a detailed description, and a new survey plan, where the remains are capable of measurement. (In the field the sites are normally planned at large scale, generally 1:100.) Any previous plans of the sites are included for the purposes of comparison. In the description the physical features of each site are described in detail, referring to the new survey plan, any previous plans, and the record of any excavation as appropriate. At a number of sites newly identified features are recorded, and new interpretations of the field information advanced.

Altogether 138 individual sites are included in the catalogue, constituting about 20% of traditional estimates of the total population of brochs, although not all of the sites are brochs, and there are no longer upstanding structures at a few sites. There are reasons to believe however that traditional estimates of the broch population may be rather low. This aspect is investigated further in considering brochs in Caithness (see Chapter 4).

Reassessment of Old Excavations

As far as practicable within the scope of a single thesis, a number of old excavations are reassessed, involving a reconsideration of available records, and a replanning of excavated sites. The thesis does not include work on the artefacts from excavated sites. Research on the artefacts is regarded as a very important and major area of work, forming the basis for another thesis in its own right. The research is in fact currently being undertaken elsewhere, with the artefacts from old broch excavations being assessed against securely dated sequences from the most recent broch excavations (Foster, University of Glasgow).

Palaeo-Environmental Data

One of the sub-objectives of the thesis is to recast the conceptual basis of broch study. To this end it is important that alternative approaches to the study of brochs should be considered, other than the traditional one of analysing only details of structural design (favoured for a hundred years from the work of Anderson 1883, through Graham 1946-7 and MacKie 1965a etc, to Martlew 1982). One alternative approach is to consider brochs in terms of their contemporary environment, and what this may reveal about land use, settlement pattern, and site function. The gathering of palaeo-environmental data is a specialist field, and again constitutes a major area of research in its own right. A certain amount of preparatory work can be done however to define an initial research strategy in this respect, by bringing together existing sources of data, such as local pollen diagrams and soil maps, and comparing them against archaeological information.

Following the above methodology, a substantial, detailed, but highly variable picture is built of brochs in Caithness, Sutherland, and Skye, in terms of settlement pattern, land use, site form, site function, and relative chronology. Most of these aspects have never been satisfactorily examined and explained by past approaches to the study of brochs, which have tended to concentrate on individual broch structures divorced from such contexts as the continuing history of settlement in an area, the contemporary landscape, or the contemporary settlement pattern. The new picture of brochs, emerging from a consideration of such contexts, as well as a consideration of individual site morphology, is presented in Parts Two (Caithness), Three (Sutherland), and Four (Skye) of the thesis.

3.3 The Wider Scene

The original research content of this thesis is concerned only with certain sub-regions of the main area of broch occurrence, but the thesis purports to review brochs across the wider scene in Atlantic Scotland. The existence of some results of recent research work by others on brochs in Orkney and in Shetland, makes it possible for the thesis to move towards this aim. Between the original research content of this thesis, and the work of Hedges et al in Orkney and Fojut in Shetland, it may reasonably be claimed that a sufficient basis exists for the drawing of comparisons and contrasts across the full population of brochs in Atlantic Scotland.

To this end Part Five of the thesis reviews the work of Hedges et al and of Fojut, drawing a number of pertinent conclusions. The results of the research in the various sub-regions of Atlantic Scotland are then considered together, and comparisons and contrasts made.

3.4 Towards a New Understanding

Part Six, the concluding part of the thesis, reviews the research in terms of its contribution to a new understanding of brochs. It considers the implications of the research results for the traditional understanding of the nature of a broch, and examines some difficulties

of terminology and classification arising from the new understanding. It discusses approaches to broch study, and suggests an amended conceptual basis for further study of brochs.

PART TWO

CHAPTER 4 INTRODUCTION

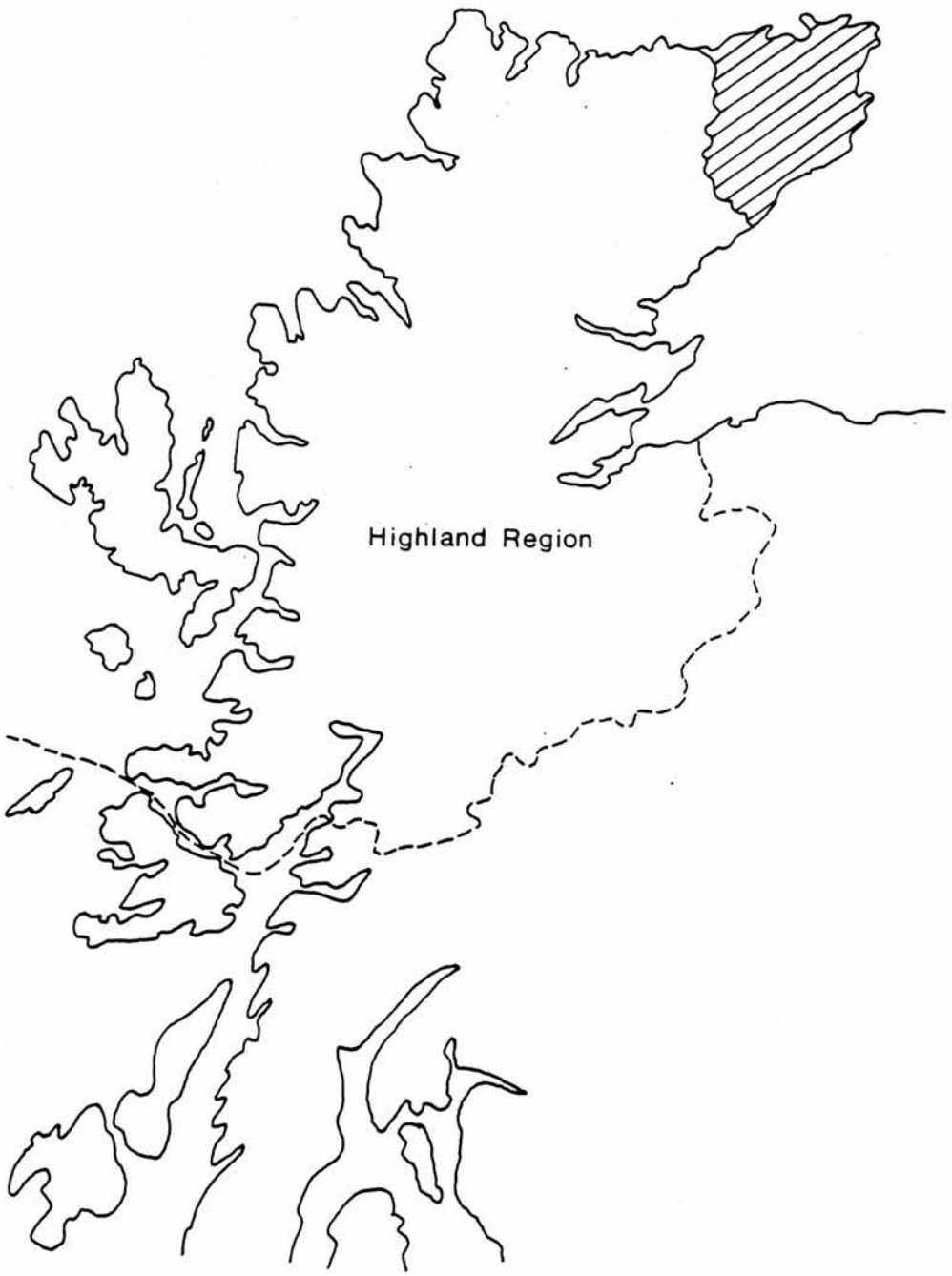
Part Two of this thesis is concerned with an examination of brochs in Caithness. Caithness lies in the extreme north of the Scottish mainland, a triangular area of land separated from the Orkney Islands by the Pentland Firth (Figure 10). It is one of the Districts of Highland Region, but is a low lying, gently undulating tableland, quite different from neighbouring areas to the south and west, which may more justifiably be described as highland. The topography of the District, and its implications for settlement pattern, is more fully considered in Chapter 5.

Caithness has a large number of brochs. In 1911 the RCAHMS estimated that there were 145 brochs in the then County (RCAHMS 1911b, xxxi). In 1968 Hamilton advanced a figure of 148, including within the total both broch sites and uncertain examples (Hamilton 1968, 175-9). This represents over 30% of traditional estimates of the total population of brochs in Scotland, usually put at about 510. But despite such a large share of the population, Caithness has not been treated as a prime resource for the development of theory on brochs. Section 4.1 below traces the reasons for this by outlining the history of broch investigation in Caithness. It is concluded that the neglect of Caithness has constituted a very serious deficiency in broch studies, which has gone unrecognised for a long time.

Because Caithness has had a low profile in the history of broch studies, particularly in the twentieth century, there is a consequent problem with the information base on brochs in the District. Section 4.2 looks at the sources which are available, and evaluates their usefulness.

The question of the actual number of brochs which exist, or may have existed, in Caithness is tackled in section 4.3. It can be very difficult to identify monuments positively in Caithness. They frequently appear in the landscape as grass covered mounds exhibiting few diagnostic features. To enable a sensible assessment of contemporary settlement pattern and landscape to take place however, it is important that as true a picture as possible is obtained of the number of brochs which exist, or may have existed, and their

Figure 10



LOCATION OF CAITHNESS DISTRICT

locations.

4.1 Historical Perspective

As mentioned in Chapter 1, Caithness was prominent in broch studies in the antiquarian period. The first recorded broch excavation took place at Kettleburn near Wick (EC 21) in 1852. Between then and 1905 a number of brochs appear to have been excavated, and some others were dug into, although no record of these exists (see Table 2, p37). Knowledge gleaned from Caithness was a significant contributor to the pool of broch wisdom which accumulated in the latter half of the nineteenth century, and some of the earliest Caithness excavations were included in Joseph Anderson's masterly summary of the state of knowledge on brochs in the Rhind lectures for 1881 (Anderson 1883).

The fifteen Tress Barry excavations in Caithness between 1891 and 1904 may be claimed to be the most concentrated campaign of broch investigation which has ever taken place in Atlantic Scotland, rivalled perhaps only by the earlier work of George Petrie in Orkney. But they were appallingly poorly recorded even by the standards of the time. Interest in brochs in the north had also waned by the end of the nineteenth century, perhaps because those first involved in the flurry of activity between 1850 and 1870, had died or were getting old. Possibly as a consequence, the Tress Barry excavations did not pass into the public record as a recognisable major source of information on brochs in the north. They remain largely unrecognised today, even though they offer some limited potential to expand the pool of available information on Caithness brochs by a re-examination of the excavated sites.

The antiquarian period was the zenith of interest in brochs in Caithness. In the twentieth century whilst broch studies in general intensified as the century progressed, the profile of Caithness brochs within those studies steadily diminished. This was a reflection of the general shift of interest towards brochs and other structures on the west coast of Scotland. By the time of the major formative period of broch theory in the years following the second world war, Caithness reached its nadir in broch studies. Between the publication of the

inventory of Caithness by the RCAHMS in 1911 and the publication of the excavations at the broch of Crosskirk in 1984 (Fairhurst 1984), very little new information on Caithness brochs emerged. In that seventy year period the only new sources of information from the area with the greatest number of brochs were: occasional field survey reports on individual sites; and a 2-3 week excavation at the broch of Killimster (EC 17), conducted in advance of aerodrome construction in 1940. It is difficult to envisage how theories purporting to be of general relevance to brochs could be advanced, whilst such a serious gap in broch studies existed. It can only be assumed that the existence of the gap was not identified as such, or its significance for the development of general theories on brochs was not recognised.

4.2 Information Sources

Chapter 2 pointed out that the survey record on brochs is probably most lacking in the major area of broch occurrence in Caithness and Sutherland, where the RCAHMS inventories are old. Survey work by Mercer with the aid of students from the University of Edinburgh (1980, 1981, and 1985) has to some extent rectified this situation, with the production of large scale plans of a number of brochs in Caithness, mainly around the coastal fringe in the north and in the south-east of the District. Unfortunately the plans are not accompanied by a detailed description and interpretation of each site, which limits their usefulness to some extent. The plans were also made by a number of different surveyors, with a consequent variation in the standard of survey work. Batey (1984) included some brochs in her coastal survey of Caithness, but provided only 4 plans, either of eroding sites or doubtful brochs.

The original research for this thesis covers 63 locations in Caithness, not all of them upstanding monuments. There are detailed descriptions of each site, plus a total of 38 new, large scale survey plans (see site catalogue). The areas selected for original research do not overlap with the published Mercer surveys. A substantial number of brochs in Caithness has now been covered by modern survey work, a considerable improvement in the level and quality of survey information.

By contrast the excavation record of brochs in Caithness has been impressive only in terms of numbers (see Table 2, p37). Altogether 33 brochs appear to have been excavated, or dug into at some time. Table 8 (pp60-1) lists those excavations for which some record exists and its form(s). Apart from Crosskirk, it does not constitute a large, or a particularly useful pool of information. The excavation at Killimster (EC 17) in 1940 was remarkably well documented considering the 2-3 week period which was available for its investigation. The other early excavations however can be said to provide nothing more than a collection of pieces of information, forming a potential reservoir of corroborative evidence, which may serve to support aspects of an interpretation of Caithness brochs developed in the first instance on a more reliable information base, such as up-to-date survey information. By itself the collection of excavation information does not provide much of an understanding of Caithness brochs, despite what the antiquaries thought.

The excavation at Crosskirk is the most recent broch excavation in the District, carried out between 1966 and 1972, although the report only appeared in 1984 (Fairhurst 1984). It was a rescue excavation, required because coastal erosion was gradually destroying the site. On excavation the site proved to be much more complex than anticipated, providing a task far greater than originally contemplated (Fairhurst 1984, 14). The general impression gained from the excavation report is that the unexpected complexities of the site proved too much to unravel. There is a reference in the report at one point to an "almost unmanageable mass of detail" (Fairhurst 1984, 71).

The Crosskirk excavation presents a considerable dilemma. In terms of modern approaches to excavation, it was still relatively early, being perhaps more akin in style to Hamilton's excavations at Jarlshof and Clickhimin in Shetland, than to the most recent broch excavations at Bu and Howe in Orkney. On the excavator's own admission there were problems in handling the mass of detail which emerged from the site. Barrett has also warned against an uncritical acceptance of the sequence postulated for the site, because of the few plans, the even fewer sections, and the lack of demonstrable stratigraphic observation in the published report (1984, 135). Crosskirk is however the only

broch excavation in Caithness for which there is a reasonable amount of documentation, and it is therefore important. At the very least extreme caution in the use of the Crosskirk excavation results would seem to be strongly indicated. (The Crosskirk excavation is reviewed in detail in Appendix 3.)

4.3 Broch Numbers

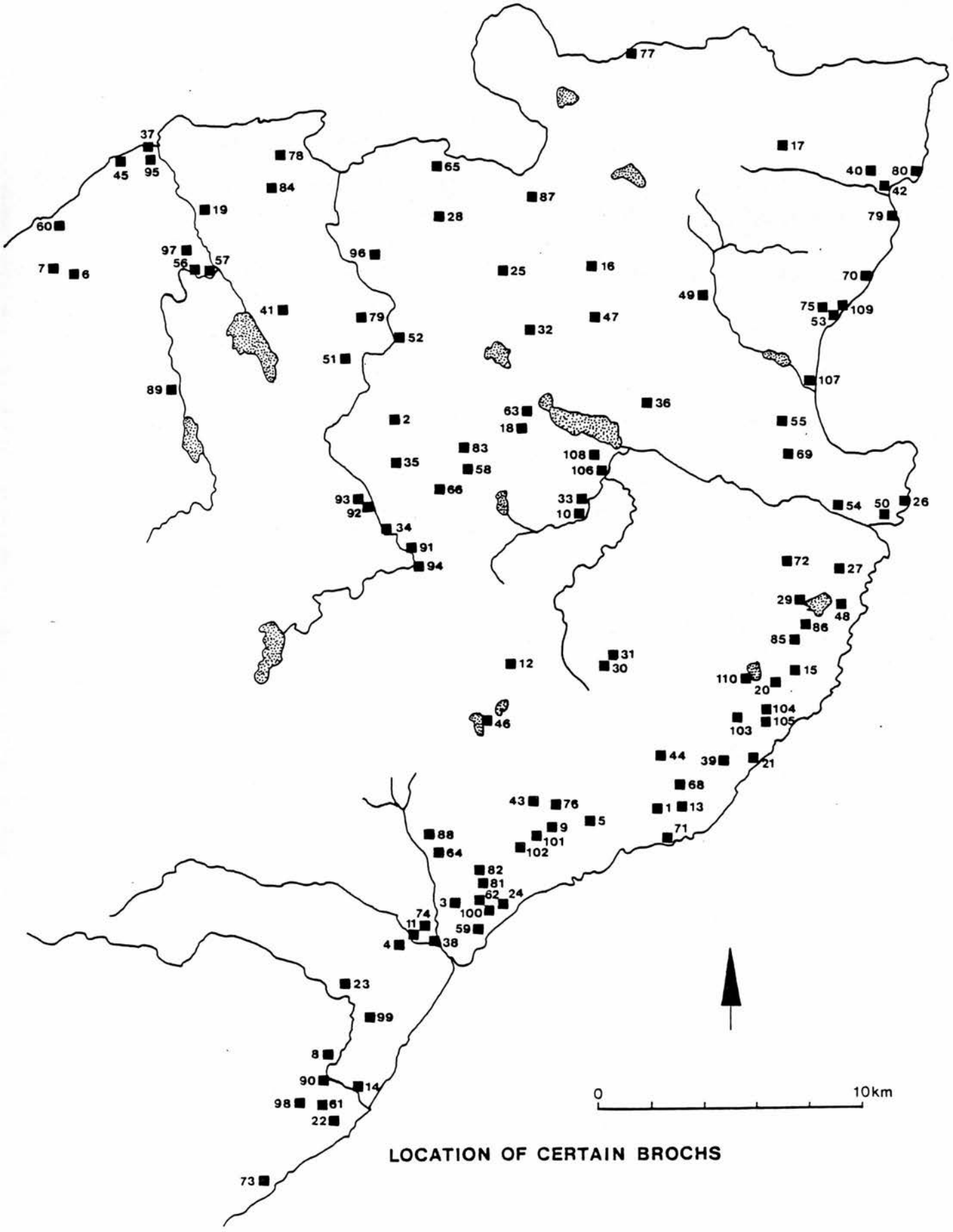
Brochs in Caithness, as in Orkney, frequently appear in the landscape as smooth, grassy mounds, sometimes referred to as broch mounds. Unfortunately other types of site, such as cairns, can have a similar outward appearance. For example, when the excavation took place at Bu in Orkney, the excavators expected to find a cairn in the mound and not a broch (Hedges and Bell 1980, 90). Accordingly there has always been a degree of doubt about the exact number of brochs upstanding in both Orkney and Caithness.

"Many potential brochs can only be classed as 'probables' owing to their grass-grown appearance" (Fairhurst 1984, 24).

In addition some broch mounds have been totally removed, such as, the broch of Kettleburn, which was taken away after its excavation (EC 21; RCAHMS 1911b, 191, no 588); and the broch of Bowermadden (RCAHMS 1911b, 6-7, no 22). It is possible that there have been a number of other removals, of which there is either only a vague record, or no record at all.

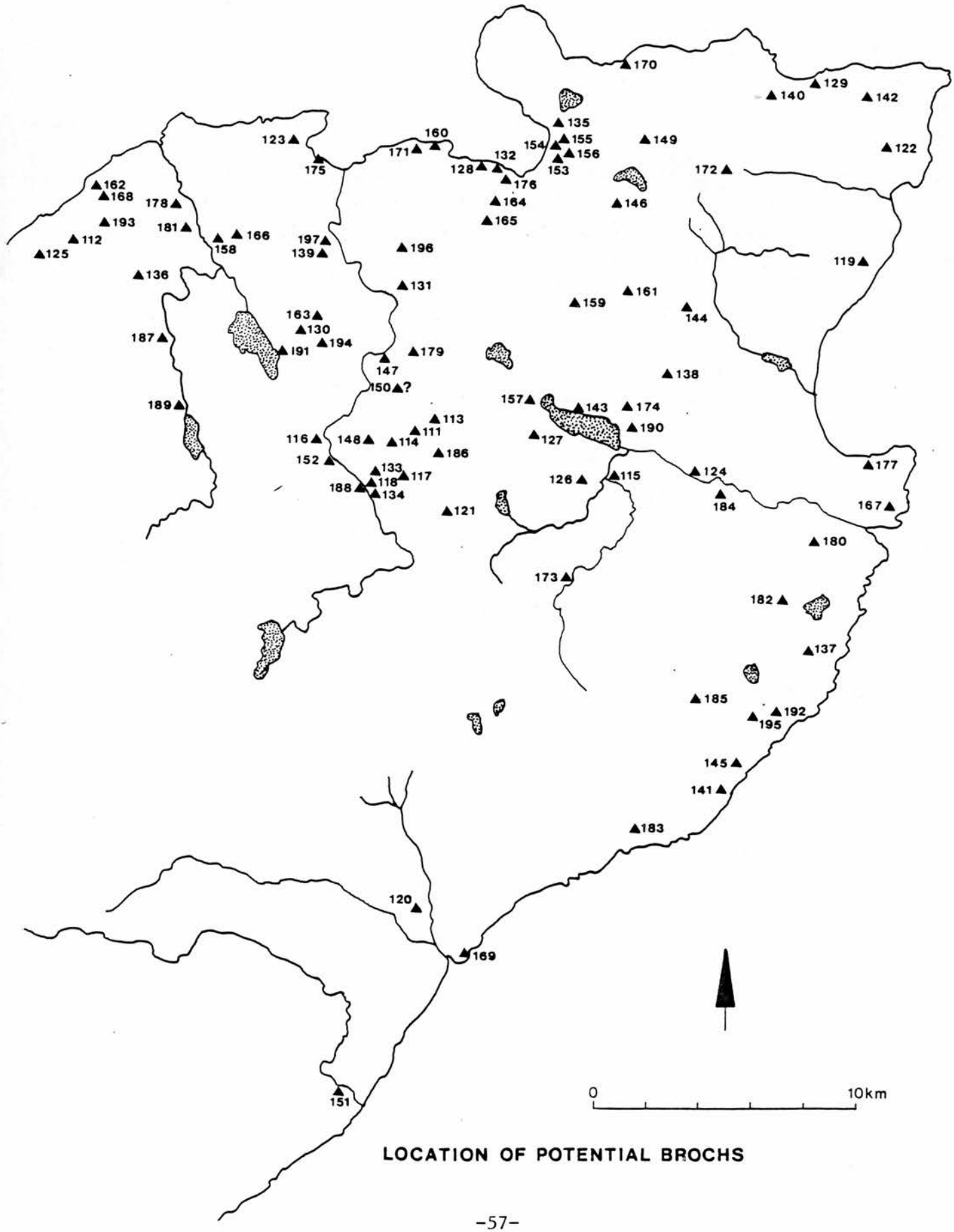
For the purposes of examining the contemporary landscape and settlement pattern in Chapter 5, it is important that an attempt is made to enumerate as nearly as possible the population of brochs in Caithness. It is not sufficient simply to accept the count of broch numbers carried out by the RCAHMS in the inventory of Caithness, upon which all later counts, including Hamilton's, would appear to have depended. The RCAHMS survey was early, brief, and incomplete. A new count needs to be made, examining afresh all potential sites. Ideally, for a proper identification of brochs to take place, every potential site should be visited, and subjected to the detailed field analysis carried out within the three study areas. But as a large number of potential sites are involved, such detailed work is a task well beyond the research scope of this thesis.

Figure 11



LOCATION OF CERTAIN BROCHS

Figure 12



LOCATION OF POTENTIAL BROCHS

However an evaluation may still be made, albeit with a lesser degree of certainty, by comparing the information on individual sites available from all survey sources, against a set of identification criteria, evolved from the detailed field analysis in the three study areas. The morphology of the upstanding monuments in the three study areas varies considerably, but certain features are consistently replicated. These are as follows:

(1) a configuration of banking on the mound surface indicating the presence of underlying walls, in particular a massive surrounding rampart or wall;
(2) upright slabs protruding through the turf indicating the presence of surrounding buildings;
(3) a substantial curving wall face, or other structural feature, such as the wall of a cell, indicating the exact location of the broch structure;
(4) a mound of large dimensions with a distinctly stepped or mound-on-mound profile;
(5) a depression in the mound top, possibly indicating the location of the broch interior; and
(6) a ditch either encircling a large mound, or outlining a large area in cases where a mound appears to have been mainly removed.

These criteria should preferably appear in combination for a positive identification to take place, but in some circumstances an individual criterion may be sufficient by itself. In particular, (4) a large mound with a distinctly stepped profile, may be taken as a certain indicator of a broch. (See Chapter 6 for a detailed discussion of the definitive features of a Caithness broch mound, particularly the stepped profile.)

Comparing the full range of available field survey information on brochs in Caithness against the six identification criteria above, the following population of brochs may be identified:

Category	Number	Table No	Figure No
Certain brochs	110	9	11
Potential brochs	87	10	12

Potential brochs consist generally of large mounds where no diagnostic features are visible, but a broch is indicated by the dimensions of

the mound coupled to the geographical location of the site. This latter point is considered further in Chapter 5. It is by no means clear that all of the sites in the potential category are in fact brochs. But it is likely that most would prove to be brochs on excavation.

Sites of destroyed brochs have been included in both categories. Where there is a reliable record of destruction, the site is identified as a certain broch. There are only three of these. Where the evidence for the former site of a broch is more tenuous, it has been included in the potential category. There are twenty of these. This large number of vaguely recorded destructions indicates that it is highly possible that some brochs may have disappeared altogether with no record of their passing. This aspect is considered further in Chapter 5.

Despite the uncertainties and difficulties inherent in any attempt at a comprehensive identification of brochs in the Caithness Plain, a potential population well in excess of traditional estimates seems to be indicated. The traditional total of brochs in Caithness has always been given as about 145. The truer figure would appear to be nearer 200, an increase of well over 30%. The recognition that the population of brochs in Caithness is substantially higher than was previously thought to be the case, must necessarily have implications for many aspects of the traditional understanding of brochs. The distribution pattern of such a high number of sites is particularly important, and is considered in detail in Chapter 5.

No consideration has been given in this chapter to the possibility of contemporary sites other than brochs existing in Caithness. There are some sites in the District identified as forts or promontory forts, but nothing is known of their chronological period. The hilltop enclosures of Buaile Oscar (RCAHMS 1911b, 95-6, no 354) and Garrywhin (RCAHMS 1911b, 165, no 528) may be much earlier than brochs (Mercer 1985, 110). On the other hand a site such as Sgarbach (EC 7) exhibited broch-like features in its cross-promontory wall on excavation, but with no apparent trace of a broch on the promontory (RCAHMS 1911b, 18, no 45). On the basis of experience in Orkney (see Chapter 20) contemporary sites of types other than brochs should perhaps be expected to exist in Caithness, and some research should be carried out in this respect.

Table 8 Caithness: Information Sources on Excavated Brochs

Name of Site	Excav. Date	Form(s) of Record
Kettleburn	1852	Report and plan (Rhind 1853)
Dunbeath	1866	Brief report (Anderson 1890)
Yarrows	1866-7	Report, plan, and photographs (Anderson 1883 and 1890)
Brounaban	c1871	Brief report (Anderson 1890); plan by Dryden and Shearer 1871 (NMRS)
Old Stirkoke	pre-1871	Brief report (Anderson 1890)
Ha' of Bowermadden	pre-1874	Brief report (Anderson 1890)
Ousedale Burn	1891	Report, plan, and sections (Mackay 1891-2)
Wester	1891	Brief report (Anderson 1900-1); plan (RCAHMS 1911b); photographs (mainly in Nicolson Collection, Caithness)
Harbour Mound	1864	Brief report and drawings, including sections (Laing 1866)
	1891-3	Brief reports (Tress Barry 1899; Anderson 1900-1); plan (RCAHMS 1911b); photographs (mainly in Nicolson Collection)
Whitegate	1892-3	Brief report (Anderson 1900-1); plan (RCAHMS 1911b); photographs (mainly in Nicolson Collection)
Road	1864	Brief report and section (Laing 1866)
	1893-4	Brief report (Anderson 1900-1); plan (RCAHMS 1911b); photographs (mainly in Nicolson Collection)
Nybster	1895-6	Brief report (Anderson 1900-1); plan (RCAHMS 1911b); photographs (mainly in Nicolson Collection)
Skirza Head	1897	Brief report (Anderson 1900-1); photographs (in Nicolson Collection)
Freswick Links	1898-9	Brief report (Anderson 1900-1); plan (RCAHMS 1911b); photographs (mainly in Nicolson Collection)
Ness	1890s	Brief report (Anderson 1900-1); plan (RCAHMS 1911b)
Everley	1890s	Brief report (Anderson 1900-1)
Hill o'Works	1900	Brief report and plan (RCAHMS 1911b); photographs (in Nicolson Collection)
Hillhead	1901	Brief report and plan (RCAHMS 1911b); draft addresss to Society of Antiquaries (London) by Tress Barry, photographs etc (in Nicolson Collection)
Cairn of Elsay	1902	Brief report and plan (RCAHMS 1911b); photographs etc (in Nicolson Collection)
Norwall	1903	Brief report and plan (RCAHMS 1911b)

Table 8 (continued)

Name of Site	Excav. Date	Form(s) of Record
Bail a'Charn	1904	Brief report and plan (RCAHMS 1911b); detailed plan, drawings etc (in Nicolson Collection)
Cogle	1905	Brief report and plan (RCAHMS 1911b)
Killimster	1904	Brief report and plan (RCAHMS 1911b)
	1940	Report, plans, sections, photographs (Calder 1947-8)
Crosskirk	1966-72	Detailed excavation report (Fairhurst 1984)
		Photographs, daybooks, correspondence in NMRS
		Correspondence and some additional material in Hunterian Museum (See Appendix 3)

(The Nicolson Collection is in the care of Caithness District Council).

Table 9 Caithness: Certain Brochs

No	Name	NGR	Identif. Criteria	Survey Sources
1	Achavar	ND 2617 3697	(4) (5)	RCAHMS no 199; NMRS card no ND 23 NE 3
2	Achies 2	ND 1400 5565	(1) (4) (6)	RCAHMS no 98; NMRS card no ND 15 NW 3 Site Catalogue TR 13
3	Achnagoul	ND 1627 3233	(3) (4)	NMRS card no ND 13 NE 14; Site Catalogue DW 3
4	Achorn	ND 1369 3050	(1) (3) (4)	RCAHMS no 214; NMRS card no ND 13 SW 3; Site Catalogue DW 7
5	Achow	ND 2303 3617	(2) (4)	RCAHMS no 208; NMRS card no ND 23 NW 3
6	Achunabust	NC 9943 6463	(2) (3)	RCAHMS no 351; NMRS card no NC 96 SE 7; Mercer 1985, 158, mon FOR 24 (no plan)
7	Achvarasdal Lodge	NC 9834 6469	Excavated	RCAHMS no 353; NMRS card no NC 96 SE 5 Mercer 1985, 156, mon FOR 12 (no plan)
8	An Dun, Berriedale	ND 1033 2492	(3) (4) (6)	RCAHMS no 203; NMRS card no ND 12 SW 10
9	Appnag Tulloch	ND 2121 3591	(2) (3)	RCAHMS no 218; NMRS card no ND 23 NW 4
10	Bail a'Charn	ND 2280 5170	Excavated	RCAHMS no 466; NMRS card no ND 25 SW 8
11	Balantrath	ND 1439 3072	(2) (3) (4)	RCAHMS no 213; NMRS card no ND 13 SW 6; Site Catalogue DW 6
12	Ballachly	ND 1956 4423	(2) (4) (6)	RCAHMS no 192; NMRS card no ND 14 SE 6
13	Bardintulloch	ND 2730 3727	(3)	NMRS card no ND 23 NE 9
14	Berriedale	ND 1168 2335	(3)	RCAHMS no 205; NMRS card no ND 12 SW 4
15	Borrowston	ND 3288 4353	(4)	RCAHMS no 510; NMRS card no ND 34 SW 8 Mercer 1985, 263, mon WAR 232 and figure 65
16	Bowermadden (site of)	ND 2398 6369	Excavated	RCAHMS no 22; NMRS card no ND 26 SW 7; Anderson 1890, 143
17	Brabstermire	ND 3285 6993	Partially excavated	RCAHMS no 37; NMRS card no ND 36 NW 1; Site Catalogue EC 2
18	Bridge of Dunn	ND 2041 5613	(4)	RCAHMS no 461; NMRS card no ND 25 NW 7
19	Brimside Tulloch	ND 0495 6696	(3) (4) (5)	RCAHMS no 434; NMRS card no ND 06 NW 22; Mercer 1985, 177, mon FOR 173 (no plan)
20	Brounaban	ND 3231 4347	Excavated	RCAHMS no 511; NMRS card no ND 34 SW 33; Anderson 1890, 142; Dryden plan (1871) Mercer 1985, 262, mon WAR 230 and figure 64

Table 9 (continued)

No	Name	NGR	Identif. Criteria	Survey Sources
21	Bruan	ND 3102 3949	(1) (3) (4) (5) (6)	RCAHMS no 193; NMRS card no ND 33 NW 1; Mercer 1985, 239, mon WAR 113 and figure 60
22	Burg Langwell	ND 1026 2181	(3)	RCAHMS no 201; NMRS card no ND 12 SW 1
23	Burg Ruadh	ND 1160 2852	(2) (3)	RCAHMS no 207; NMRS card no ND 12 NW 6
24	Burn of Latheronwheel	ND 1865 3260	(3)	RCAHMS no 212; NMRS card no ND 13 SE 5
25	Burnside, Durran	ND 1951 6359	(4) (6)	RCAHMS no 436, NMRS card no ND 16 SE 13
26	Cairn of Elsay	ND 3871 5198	Excavated	RCAHMS no 521; NMRS card no ND 35 SE 6; Site Catalogue EC 22
27	Cairn of Humster	ND 3529 4848	(6)	RCAHMS no 506; NMRS card no ND 34 NE 3
28	Cairn of Sibmister	ND 1651 6622	(1) (4)	RCAHMS no 321; NMRS card no ND 16 NE 3
29	Cairnquoy	ND 3309 4743	(3)	NMRS card no ND 34 NW 6
30	Camster 1	ND 2520 4518	(1) (4) (6)	RCAHMS no 189; NMRS card no ND 24 NE 4
31	Camster 2	ND 2555 4558	(2) (4) (6)	RCAHMS no 522; NMRS card no ND 24 NE 5
32	Camster Farm	ND 2093 6098	(6)	RCAHMS no 18; NMRS card no ND 26 SW 4
33	Carn a'Chladda	ND 2313 5233	(3) (4)	RCAHMS no 467; NMRS card no ND 25 SW 4
34	Carn na Mairg	ND 1331 5103	Partially excavated	RCAHMS no 105; NMRS card no ND 15 SW 22; Site Catalogue TR 28
35	Cnoc Donn	ND 1400 5330	(1) (4) (6)	RCAHMS no 103; NMRS card no ND 15 SW 5; Site Catalogue TR 20
36	Cogle	ND 2670 5708	Excavated	RCAHMS no 469; NMRS card no ND 25 NE 8
37	Crosskirk	ND 0248 7012	Excavated	RCAHMS no 347; NMRS card no ND 07 SW 4; Fairhurst 1984
38	Dunbeath	ND 1553 3044	Excavated	RCAHMS no 215; NMRS card no ND 13 SE 17
39	East Clyth	ND 2995 3923	(3) (5)	NMRS card no ND 23 NE 11
40	Everley	ND 3699 6828	Excavated	RCAHMS no 36; NMRS card no ND 36 NE 6 Anderson 1900-1, 142-3; Site Catalogue EC 4
41	Framside	ND 0890 6199	(4)	RCAHMS no 111; NMRS card no ND 06 SE 5
42	Freswick Links	ND 3761 6761	Excavated	RCAHMS no 187; NMRS card no ND 36 NE 5 Anderson 1900-1, 143-4; Site Catalogue EC 5
43	Golsary	ND 2057 3749	(2) (3) (6)	RCAHMS no 220; NMRS card no ND 23 NW 14
44	Green Hill, Roster	ND 2664 3986	(2) (3) (4)	RCAHMS no 191; NMRS card no ND 23 NE 10

Table 9 (continued)

No	Name	NGR	Identif. Criteria	Survey Sources
45	Green Tullochs	ND 0131 6964	(1) (3) (4) (6)	RCAHMS no 348; NMRS card no ND 06 NW 18; Mercer 1981, 139, mon 326 and figure 32
46	Greysteil Castle	ND 1795 4167	(3)	RCAHMS no 222; NMRS card no ND 14 SE 4
47	Halcro Manse	ND 2389 6119	(4)	RCAHMS no 1; NMRS card no ND 26 SW 1
48	Hempriggs	ND 3511 4717	(3)	RCAHMS no 504; NMRS card no ND 34 NE 4
49	Hill o' Works	ND 2903 6255	Excavated	RCAHMS no 3; NMRS card no ND 26 SE 2
50	Hillhead	ND 3762 5140	Excavated	RCAHMS no 520; NMRS card no ND 35 SE 5 Site Catalogue EC 23
51	Housle Cairn, Gerston	ND 1190 5960	(4) (5)	RCAHMS no 115; NMRS card no ND 15 NW 1 Site Catalogue TR 7
52	Hoy	ND 1416 6062	(3) (4)	RCAHMS no 435; NMRS card no ND 16 SW 6; Site Catalogue TR 8
53	Keiss (Harbour Mound)	ND 3531 6108	Excavated	RCAHMS no 515; NMRS card no ND 36 SE 2; Anderson 1900-1, 122-7; Site Catalogue EC 12
54	Kettleburn (site of)	ND 3497 5191	Excavated	RCAHMS no 588; NMRS card no ND 35 SW 11; Rhind 1853; Site Catalogue EC 21
55	Killimster (site of)	ND 3234 5655	Excavated	RCAHMS no 507; NMRS card no ND 35 NW 3; Calder 1947-8; Site Catalogue EC 17
56	Knockglass 1	ND 0489 6345	(3)	RCAHMS no 171; NMRS card no ND 06 SE 11
57	Knockglass 2	ND 0547 6358	(4)	RCAHMS no 117; NMRS card no ND 06 SE 18
58	Knockglass 3	ND 1761 5329	(3)	RCAHMS no 475; NMRS card no ND 15 SE 5
59	Knockinnon	ND 1764 3105	(1) (4)	RCAHMS no 216; NMRS card no ND 13 SE 10
60	Knock Urray	NC 9838 6630	(4) (6)	RCAHMS no 349; NMRS card no NC 96 NE 16
61	Langwell Tulloch	ND 0974 2231	(4)	RCAHMS no 301; NMRS card no ND 02 SE 10
62	Latheronwheel	ND 1762 3251	(1) (4) (5)	RCAHMS no 211; NMRS card no ND 13 SE 6
63	Lower Dunn 1	ND 2026 5670	(4) (5)	RCAHMS no 463; NMRS card no ND 25 NW 2
64	Minera	ND 1558 3461	(1) (2) (3) (4) (5)	RCAHMS no 197; NMRS card no ND 13 SE 19; Site Catalogue DW 2
65	Murkle	ND 1626 6881	(4) (5) (6)	RCAHMS no 319; NMRS card no ND 16 NE 2; Mercer 1981, 154. mon 516 and figure 35
66	Mybster	ND 1619 5280	(2) (4)	RCAHMS no 96; NMRS card no ND 15 SE 8; Site Catalogue TR 22

Table 9 (continued)

No	Name	NGR	Identif. Criteria	Survey Sources
67	Ness	ND 3814 6665	Excavated	RCAHMS no 33; NMRS card no ND 36 NE 1; Anderson 1900-1, 143; Site Catalogue EC 6
68	Newlands of Clyth	ND 2724 3811	(3) (4)	NMRS card no ND 23 NE 7
69	Norwall	ND 3266 5445	Excavated	RCAHMS no 508; NMRS card no ND 35 SW 10 Site Catalogue EC 18
70	Nybster	ND 3702 6314	Excavated	RCAHMS no 518; NMRS card no ND 36 SE 4; Anderson 1900-1, 139-143;Site Catalogue EC 8
71	Occumster	ND 2693 3565	(3)	RCAHMS no 198; NMRS card no ND 23 NE 2; Batey 1984, 86, LAT 232
72	Old Stirkoke	ND 3275 4928	Partially excavated	RCAHMS no 499; NMRS card no ND 34 NW 4; Anderson 1890, 143
73	Ousedale Burn	ND 0713 1881	Excavated	RCAHMS no 204; NMRS card no ND 01 NE 1 Mackay 1891-2, 351-7
74	Rhemullen	ND 1532 3098	(1) (3) (4)	RCAHMS no 304; NMRS card no ND 13 SE 11; Site Catalogue DW 5
75	Road, Keiss	ND 3488 6151	Excavated	RCAHMS no 517; NMRS card no ND 36 SW 1; Anderson 1900-1, 131-9; Site Catalogue EC 10
76	Rumster	ND 2125 3725	(3)	RCAHMS no 219; NMRS card no ND 23 NW 5
77	Scarfskerry	ND 2564 7420	(6)	RCAHMS no 62; NMRS card no ND 27 SE 5 Batey 1984, 56, DUN 021 (plan)
78	Scrabster	ND 0867 6969	(1) (5) (6)	RCAHMS no 429; NMRS card no ND 06 NE 4; Mercer 1981, 149, mon 449 and figure 33
79	Skinnet	ND 1257 6136	(4) (6)	RCAHMS no 116; NMRS card no ND 16 SW 3; Site Catalogue TR 5
80	Skirza Head	ND 3940 6844	Excavated	RCAHMS no 35; NMRS card no ND 36 NE 2; Anderson 1900-1, 144-5; Site Catalogue EC 3
81	Smerral 1	ND 1780 3379	(2) (3)	RCAHMS no 209; NMRS card no ND 13 SE 4
82	Smerral 2	ND 1773 3396	(2) (3) (5)	RCAHMS no 210; NMRS card no ND 13 SE 23
83	Spittal Farm	ND 1756 5438	(3) (5)	RCAHMS no 474; NMRS card no ND 15 SE 2
84	Thing's Va	ND 0808 6824	(1) (3) (4) (6)	RCAHMS no 432; NMRS card no ND 06 NE 1; Mercer 1981, 150, mon 461 and figure 34
85	Thrumster Mains	ND 3319 4505	Excavated	RCAHMS no 502; NMRS card no ND 34 NW 1

Table 9 (continued)

No	Name	NGR	Identif. Criteria	Survey Sources
86	Thrumster Little	ND 3384 4583	(3)	RCAHMS no 503; NMRS card no ND 34 NW 2
87	Thurdistoft	ND 2078 6731	(3)	RCAHMS no 318; NMRS card no ND 26 NW 1
88	Tiantulloch	ND 1524 3522	(2) (3) (4)	RCAHMS no 196; NMRS card no ND 13 NE 2; Site Catalogue DW 1
89	Tota an Dranndain	ND 0374 5792	(3) (4)	RCAHMS no 391; NMRS card no ND 05 NW 8; Mercer 1985, 196, mon FOR 312 and figure 56
90	Tulach Bad a'Choilich	ND 1005 2404	(3)	RCAHMS no 202; NMRS card no ND 12 SW 9
91	Tulach Beag	ND 1459 4980	(3)	RCAHMS no 107; NMRS card no ND 14 NW 1; Site Catalogue TR 29
92	Tulach Buaile a'Chnoic	ND 1299 5186	(1) (4)	RCAHMS no 106; NMRS card no ND 15 SW 20; Site Catalogue TR 27
93	Tulach Lochan Bhraseil	ND 1282 5203	(3) (4)	RCAHMS no 143; NMRS card no ND 15 SW 19; Site Catalogue TR 26
94	Tulach Mor	ND 1485 4940	(3) (4) (5) (6)	RCAHMS no 108; NMRS card no ND 14 NW 2; Site Catalogue TR 30
95	Tulloch of Lybster	ND 0268 6947	(1) (2) (3) (6)	RCAHMS no 346; NMRS card no ND 06 NW 20; Mercer 1981, 140, mon 337 (no plan)
96	Tulloch of Shalmstry	ND 1316 6443	(2) (3)	RCAHMS no 437; NMRS card no ND 16 SW 8; Site Catalogue TR 2
97	Tulloch of Stemster	ND 0399 6548	(1) (2) (4)	RCAHMS no 344; NMRS card no ND 06 NW 13; Mercer 1985, 178, mon FOR 179 (no plan)
98	Tulloch Turnal	ND 0904 2286	(3)	RCAHMS no 200; NMRS card no ND 02 SE 4
99	Upper Borgue	ND 1243 2708	(1) (3) (4) (5)	RCAHMS no 206; NMRS card no ND 12 NW 7
100	Upper Latheron	ND 1824 3186	(2) (3)	RCAHMS no 217; NMRS card no ND 13 SE 8
101	Usshilly Tulloch	ND 2075 3552	(2)	RCAHMS no 221, NMRS card no ND 23 NW 6
102	Wag of Forse	ND 2048 3520	Excavated	RCAHMS no 263; NMRS card no ND 23 NW 1
103	Warehouse	ND 3034 4124	(1) (2) (3) (4) (5) (6)	RCAHMS no 190; NMRS card no ND 34 SW 43; Mercer 1985, 233, mon WAR 76 and figure 59
104	Watenan 1	ND 3180 4146	(3) (4)	RCAHMS no 524; NMRS card no ND 34 SW 10; Mercer 1985, 255, mon WAR 184 and figure 63
105	Watenan 2	ND 3171 4115	(3) (6)	RCAHMS no 526; NMRS card no ND 34 SW 11; Mercer 1985, 253, mon WAR 177 and figure 61

Table 9 (continued)

No	Name	NGR	Identif. Criteria	Survey Sources
106	Watten	ND 2410 5397	(1) (3)	RCAHMS no 468; NMRS card no ND 25 SW 13
107	Wester	ND 3385 5831	Excavated	RCAHMS no 513; NMRS card no ND 35 NW 4; Anderson 1900-1, 119-122;Site Catalogue EC16
108	West Watten	ND 2299 5502	(3)	RCAHMS no 464; NMRS card no ND 25 NW 9
109	White Gate, Keiss	ND 3541 6120	Excavated	RCAHMS no 516; NMRS card no ND 36 SE 3; Anderson 1900-1, 127-130;Site Catalogue EC11
110	Yarrows	ND 3083 4349	Excavated	RCAHMS no 509; NMRS card no ND 34 SW 1; Mercer 1985, 223, mon WAR 13 and figure 58; Anderson 1883, 223

Table 10 Caithness: Potential Brochs (* denotes that site traditionally identified as a broch)

No	Name	NGR	Comments	Survey Sources
111*	Achanarras (site of)	ND 1511 5515	Recently destroyed	RCAHMS no 99; NMRS card no ND 15 NE 2; Site Catalogue TR 17
112*	Achbuiligan Tulloch	NC 9894 6570	Slightly stepped profile	RCAHMS no 350; NMRS card no NC 96 NE 17; Mercer 1985, 156, FOR 14 and figure 57
113	Achcomhairle	ND 1596 5566	Depression in mound top	NMRS card no ND 15 NE 5; ONB 4 1872, 161
114*	Achies 1	ND 1364 5506	Large mound, slightly stepped profile	RCAHMS no 97; NMRS card no ND 15 NW 15; Site Catalogue TR 14
115*	Achingale	ND 2434 5353	Slightly stepped profile	RCAHMS no 473; NMRS card no ND 25 SW 14
116*	Achingoul	ND 1047 5463	Broad ring, outer bank	NMRS card no ND 15 SW 1; Site Catalogue TR 16
117*	Achlochlan Moss	ND 1418 5306	Broad ring similar to Achingoul	RCAHMS no 102; NMRS card no ND 15 SW 6; Site Catalogue TR 21
118	Aisle (site of)	cND 130 525	Reported destroyed about 1840, stone dish found	Anderson 1890, 185; Site Catalogue TR 23
119	Auckengill (site of)	cND 366 641	RCAHMS reported site of broch	RCAHMS no 52; NMRS card no ND 36 SE 7; Site Catalogue EC 9
120	Ballentink	ND 1508 3135	Indefinite remains	RCAHMS no 261; NMRS card no ND 13 SE 12; Site Catalogue DW 4
121	Balvedavist	ND 1680 5158	Depression in mound top	NMRS card no ND 15 SE 11; ONB 4 1871, 177
122	Beil of Duncansby	ND 3775 7012	Broch or earthhouse	NMRS card no ND 37 SE 24; Batey 1984, 59, CAN 044a (plan)
123	Bell Mount	ND 0936 7035	Indefinite remains	RCAHMS no 431; NMRS card no ND 07 SE 2; Mercer 1981, 149, mon 444 and figure 41
124*	Bilbster	ND 2817 5381	Depression in mound top	RCAHMS no 514; NMRS card no ND 25 SE 14 Site Catalogue EC 19
125	Bridge of Isauld (site of)	NC 9767 6504	Reported destroyed about 1860, querns found	NMRS card no NC 96 NE 19; ONB 9 1873, 39
126	Cairn of Achoy	ND 2260 5348	Very large mound	RCAHMS no 465; NMRS card no ND 25 SW 1
127*	Cairn of Dunn	ND 2065 5605	Featureless large mound	RCAHMS no 462; NMRS card no ND 25 NW 8
128	Cairn of Hattel (site of)	ND 1903 6895	ONB reported destruction of Pict's House	NMRS card no ND 16 NE 23; ONB 7 1873, 27

Table 10 (continued)

No	Name	NGR	Comments	Survey Sources
129	Canisbay Church (site of)	ND 3434 7285	Church reputedly on top of broch, hammerstones and deer antlers found	NMRS card no ND 37 SW 4
130	Carnavagry (site of)	ND 0967 6128	ONB reported destroyed "many years before"	NMRS card no ND 06 SE 4; ONB 4 1872, 43
131	Carsgoe (site of)	?ND 14 63	Anderson reported destroyed "long before"	Anderson 1890, 184; Site Catalogue TR 3
132*	Castlehill	ND 1936 6876	Indefinite remains	RCAHMS no 320; NMRS card no ND 16 NE 11
133*	Dale Farm	ND 1320 5304	Formerly large mound, slightly stepped profile	RCAHMS no 104; NMRS card no ND 15 SW 7; Site Catalogue TR 19
134	Dale House (site of)	ND 1297 5227	Reported destroyed when house built, quern found	NMRS card no ND 15 SW 16; Anderson 1890, 186; Site Catalogue TR 24
135	Dunnet Church	ND 2195 7118	Church supposedly on top of broch, deer horns, flint pivot found	Nicolson Collection Doc 32
136	East Shebster	ND 0250 6339	Ditch around mound, Mercer classed as cairn	RCAHMS no 385; NMRS card no ND 06 SW 10; Mercer 1985, 180, mon FOR 200
137*	Gansclet (site of)	ND 3362 4441	Record of destruction in 1930s	RCAHMS no 501; NMRS card no ND 34 SW 7;
138*	Gearsay Cairn	ND 2726 5819	Mound on a low knoll	RCAHMS no 472; NMRS card no ND 25 NE 8
139*	Geise	ND 1036 6480	Indefinite remains	RCAHMS no 430; NMRS card no ND 16 SW 9; Site Catalogue TR 1
140*	Gills	ND 3204 7238	Rotary quern found	RCAHMS no 53; NMRS card no ND 37 SW 3
141*	Greenhill, Mid Clyth	ND 2945 3732	Large mound, mutilated	RCAHMS no 195; NMRS card no ND 23 NE 1
142*	Green Hill, Stemster	ND 3691 7194	Indefinite remains	RCAHMS no 54; NMRS card no ND 37 SE 1
143	Grey Cairn, Lynegar	ND 2304 5662	"Tunnel" found in 1935	RCAHMS no 479; NMRS card no ND 25 NW 3
144*	Gunn's Hillock 1	ND 2792 6201	Low mound	RCAHMS no 2; NMRS card no ND 26 NE 1; Site Catalogue EC 14
145	Gunn's Hillock 2	ND 3029 3904	Indefinite remains	RCAHMS no 194; NMRS card no ND 33 NW 2
146	Ha' of Greenland	ND 2490 6709	Very large low mound	RCAHMS no 64; NMRS card no ND 26 NW 3
147	Halkirk (site of)	ND 1347 5951	ONB reported destroyed "number of years ago"	NMRS card no ND 15 NW 10; ONB 4 1872, 80; Site Catalogue TR 10

Table 10 (continued)

No	Name	NGR	Comments	Survey Sources
148*	Harpsdale (site of)	ND 1305 5522	Reported destroyed in 1841, well in interior	RCAHMS no 180; NMRS card no ND 15 NW 16; Anderson 1890, 185; Site Catalogue TR 15
149	Hollandmey	ND 2929 7083	Indefinite remains	RCAHMS no 39; NMRS card no ND 27 SE 3
150	Houstry Mains (site of)	(ND 1350 5801 (ND 1350 5803 (ND 1404 5801	ONB reported site of Pict's house, no trace at suggested locations	NMRS card nos ND 15 NW 8, ND 15 NW 9; ONB 4 1872, 101; Site Catalogue TR 11
151	Langwell	ND 1074 2327	ONB reported destruction of Pictish dwelling	NMRS card no ND 12 SW 22; ONB 15 1871, 124
152	Leosag	ND 1162 5384	Heavily ploughed, OS class as a cairn	RCAHMS no 109; NMRS card no ND 15 SW 4; Site Catalogue TR 18
153	Links of Dunnet 1	ND 2224 6967	Sub-oval chamber revealed by excavation	RCAHMS no 66; NMRS card no ND 26 NW 5; Mercer 1981, 158, mon 552 and figure 24
154	Links of Dunnet 2	ND 2214 7028	Indefinite remains	RCAHMS no 78; NMRS card no ND 27 SW 10; Mercer 1981, 167, mon 657
155	Links of Dunnet 3	ND 2213 7037	ONB reported remains of large Pictish House	NMRS card no ND 27 SW 11; ONB 3 1873, 93; Mercer 1981, 167, mon 658
156	Links of Dunnet 4	ND 2243 7000	ONB reported a Pictish House on a small hillock	NMRS card no ND 27 SW 12; ONB 3 1873, 94; Mercer 1981, 167, mon 655
157	Lower Dunn 2	ND 2035 5694	Indefinite remains	NMRS card no ND 25 NW 6
158	Lythmore	ND 0545 6545	Large low mound, narrow ditch, souterrain	NMRS card no ND 06 NE 21
159	Mains of Bower Tower	ND 2279 6179	Indefinite remains	RCAHMS no 19; NMRS card no ND 26 SW 5
160	Methow Hillock	ND 1618 6992	Heavily ploughed large mound	RCAHMS no 327; NMRS card no ND 16 NE 8; Mercer 1981, 154, mon 507 (no plan)
161*	Murza	ND 2538 6290	Indefinite remains	RCAHMS no 63; NMRS card no ND 26 SE 7
162	North Cairn (site of)	NC 9874 6716	Reported destroyed in 1866, cells complete	NMRS card no NC 96 NE 4; ONB 9 1873, 25
163*	North Calder	ND 1035 6160	Very large mound	RCAHMS no 110; NMRS card no ND 16 SW 10; Site Catalogue TR 4
164	Olrig Glebe	ND 1912 6709	Heavily ploughed	RCAHMS no 322; NMRS card no ND 16 NE 12
165	Olrig House	ND 1890 6628	Indefinite remains	RCAHMS no 323; NMRS card no ND 16 NE 14

Table 10 (continued)

No	Name	NGR	Comments	Survey Sources
166*	Oust (site of)	ND 0632 6552	Apparent well & cellar remaining	RCAHMS no 455; NMRS card no ND 06 NE 7
167	Papigoe	ND 3828 5176	May be a natural mound	RCAHMS no 585; NMRS card no ND 35 SE 7; Batey 1984, 75, WIC 154;Site Catalogue EC 24
168	Peas Cairn (site of)	NC 9887 6694	Reported destroyed about 1832, sea shells found	NMRS card no NC 96 NE 5; ONB 9 1873, 25; Anderson 1890, 185
169	Poll Gorm	ND 1703 2949	Circular drystone structure, outwork	NMRS card no ND 12 NE 3; Batey 1984, 94, LAT 281 (plan)
170*	Rattar Burn (site of)	ND 2525 7389	No certain traces	RCAHMS no 84; NMRS card no ND 27 SE 2
171	Rossy Hillock	ND 1552 6992	Indefinite remains	RCAHMS no 448; NMRS card no ND 16 NE 6; Mercer 1981, 153, mon 504 (no plan)
172*	Scoolary	ND 2982 6847	Wall met in ploughing	RCAHMS no 38; NMRS card no ND 26 NE 3
173	Scorriclet	ND 2485 5051	Formerly a large mound, slightly stepped profile	NMRS card no ND 25 SW 9
174*	Scottag	ND 2566 5699	Slightly stepped profile	RCAHMS no 470; NMRS card no ND 25 NE 5
175	Scrabster Castle	ND 1066 6916	Broch type pottery found	NMRS card no ND 16 NW 3; Talbot 1973, 21-2
176	Shelley Hill (site of)	ND 1953 6832	ONB reported large mound on small hill, midden, building, sea shells	NMRS card no ND 16 NE 18; ONB 7 1873, 41
177	Shorelands	ND 3647 5425	Heavily ploughed	RCAHMS no 584; NMRS card no ND 35 SE 19; Batey 1984, 73, WIC 140a and 140b
178	Skiall	ND 0375 6730	Recently bulldozed, no wall faces to be seen	NMRS card no ND 06 NW 25; Anderson 1890, 185; Mercer 1985, 177, mon FOR 167 (no plan)
179	Sibster (site of)	ND 1499 6011	Reported destroyed in 1841	NMRS card no ND 16 SW 7; ONB 4 1872, 54; Site Catalogue TR 9
180*	Stemster 1	ND 3384 5029	Heavily ploughed	RCAHMS no 505; NMRS card no ND 35 SW 5
181	Stemster 2	ND 0400 6642	Mercer classed as cairn	RCAHMS no 345; NMRS card no ND 06 NW 21; Mercer 1985, 177, mon FOR 175
182*	Tannach Mains	ND 3236 4748	Indefinite remains	RCAHMS no 500; NMRS card no ND 34 NW 5
183	The Tullochs	ND 2529 3597	Batey identified as a possible broch	NMRS card no ND 23 NE 16; Batey 1984, 87, LAT 239 (plan)

Table 10 (continued)

No	Name	NGR	Comments	Survey Sources
184*	Thuster	ND 3004 5254	Very large low mound	RCAHMS no 519; NMRS card no ND 35 SW 6
185*	Toftgun	ND 2798 4241	Turf covered substantial circular stone structure	RCAHMS no 525; NMRS card no ND 24 SE 6; Mercer 1980, 89, mon TOF 2 (no plan)
186	Torr an Fhidlier	ND 1632 5473	Indefinite remains	RCAHMS no 101; NMRS card no ND 15 SE 4
187	Torr na Craoibhe	ND 0339 6029	Possibly not a broch, but a homestead	RCAHMS no 384; ONB 9 1873, 121
188	Tulach an Fheurain	ND 1287 5208	Indefinite remains, OS class as a cairn	RCAHMS no 144; NMRS card no ND 15 SW 18; Site Catalogue TR 25
189	Tulach Gorm 1	ND 0418 5710	Slightly stepped profile	RCAHMS no 389; NMRS card no ND 05 NW 12; Mercer 1985, 200, mon FOR 333 and figure 57
190	Tulach Gorm 2 (site of)	ND 2510 5604	ONB reported Pict's House cut by road 1790	NMRS card no ND 25 NE 1; ONB 12 1871, 89
191*	Tulloch of Achavarn	ND 0854 5962	Indefinite remains	RCAHMS no 112; NMRS card no ND 05 NE 29
192*	Ulbster School	ND 3243 4150	Depression in mound top	RCAHMS no 523; NMRS card no ND 34 SW 9
193	Upper Dounreay (site of)	NC 9990 6626	Reported destroyed about 1866, sea shells found	NMRS card no NC 96 NE 18; ONB 9 1873, 32, 47
194*	Upper Sour	ND 1085 6056	Large mound, stepped profile	RCAHMS no 114; NMRS card no ND 16 SW 4; Site Catalogue TR 6
195	Watenan West	ND 3162 4134	Mercer classed as a fort or a broch	RCAHMS no 527; NMRS card no ND 34 SW 12; Mercer 1985, mon WAR 183 and figure 62
196	Weydale	ND 1487 6472	Indefinite remains	NMRS card no ND 16 SW 11; ONB 1871, 191
197	Whitefield (site of)	ND 1054 6514	ONB reported destruction of Pict's House	NMRS card no ND 16 NW 6; ONB 11 1872, 179

CHAPTER 5 BROCHS AND THE LAND

In attempting to assess the distribution pattern of brochs in Caithness, the most important factor to recognise is that the landscape has undergone dramatic changes in the last two centuries. Obviously the underlying geology has remained the same, but other elements, such as the pattern of drainage and soils, have changed as a result of substantial agricultural improvements. It is difficult to find evidence of the immediately pre-improvement landscape in Caithness, let alone a landscape at least 2000 years older. The vital link between brochs and the land has been effectively severed. The only way to understand that relationship now is by reconstruction of the various elements which may have made up the contemporary landscape of brochs. The relationship can no longer be readily assessed in the field, beyond a crude statement that brochs seem to lie within the area of modern farmland, and outside the peat which covers two thirds of the District.

There has been no comprehensive attempt to reconstruct past landscapes in Caithness. Information in this respect has to be gleaned from a number of disparate and limited sources, both modern and historical, and in both written and map form. The modern sources consist of maps of geology, soils and landscape, particularly OS maps, and a number of pollen diagrams from various sites in the District. The historical sources include accounts of agriculture in the District prior to the major improvements of the last two hundred years, and old maps such as Roy's military survey.

The aim of this chapter is to use the range of available sources of environmental information to examine the main elements of the contemporary relationship between brochs and the land in Caithness. It is suggested that this relationship has a bearing on attempts to reach an understanding of broch function. Section 5.1 describes the modern landscape of Caithness. Section 5.2 attempts a tentative reconstruction of the contemporary landscape of brochs. Section 5.3 assesses the distribution pattern of broch sites. Finally, section 5.4 summarises the landscape evidence for understanding broch function in Caithness.

5.1 The Modern Landscape

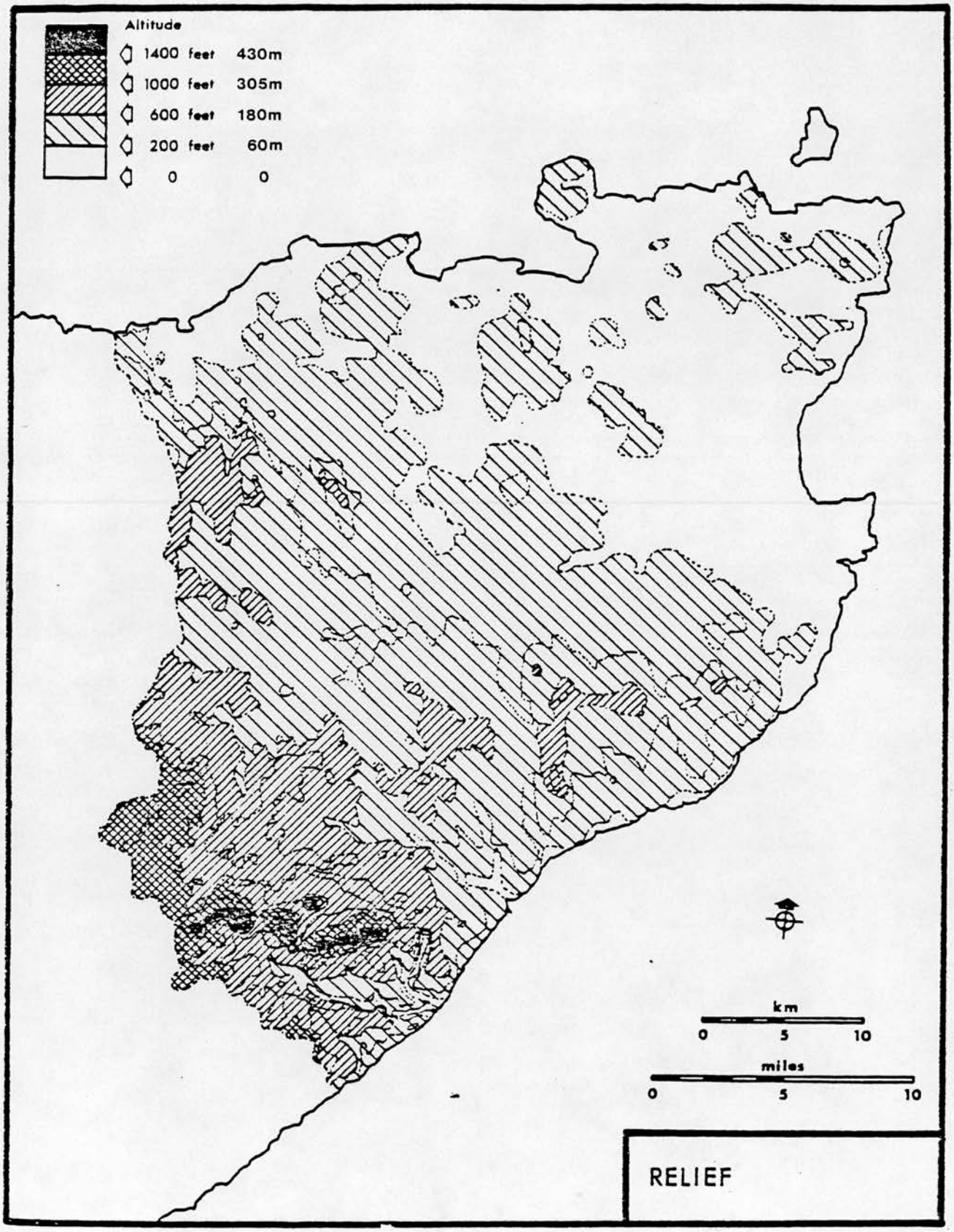
The area of the Caithness Plain is a gently undulating tableland or erosion surface of Middle Old Red Sandstone rocks, bordered to the south and west by a much more highland landscape in the vicinity of the District boundary (Figure 13). The tableland slopes gently down from the hills on the southern border of the District towards the north. High cliffs form the edge of the land around most of the coastline.

The Caithness Plain may be divided into three sectors: the Northern, Central, and Southern Plains (Futty and Dry 1977, 3; Figure 14). Much of the Northern Plain lies below 60m and is covered in glacial till. It has an extensive peat deposit in its NE corner, but also contains the main arable land of the District, in a broad belt between Wick and Thurso. The Central Plain varies from about 75m to over 180m, and is largely covered with deep peat, which stretches beyond the boundary with Sutherland in the west. There is no arable land in this sector, although there may be occasional small holdings where reclamation of the peat has taken place either recently or at some point in the past. The Southern Plain lies generally between 60m and 180m, and the topography is much more dissected with deep steep-sided valleys. There is arable land along the coastal fringe, and along some of the valleys draining to the Moray Firth, but the higher ground is uncultivated. To the south-west of the Southern Plain lies the area of the Moine Plateau which consists of peat covered rolling moorland, lying generally between 180 and 240m, deeply dissected by river valleys. It contains the only really high ground in the District, with Morven rising to 705m and the Scarabens to 600m. Most of the plateau is uncultivated, and is used for rough grazing and deer forest.

The climate of the area is cool and equable (Futty and Dry 1977, 7; the main climatic elements are summarised in Figure 15 and Table 11, p97). The annual rainfall is well below the average for the UK, ranging from about 750 millimetres on the eastern seaboard to about 900 millimetres in the west. Relatively low evaporation however, associated with low summer temperatures and high relative humidities, leads to a surplus of soil water across the District.

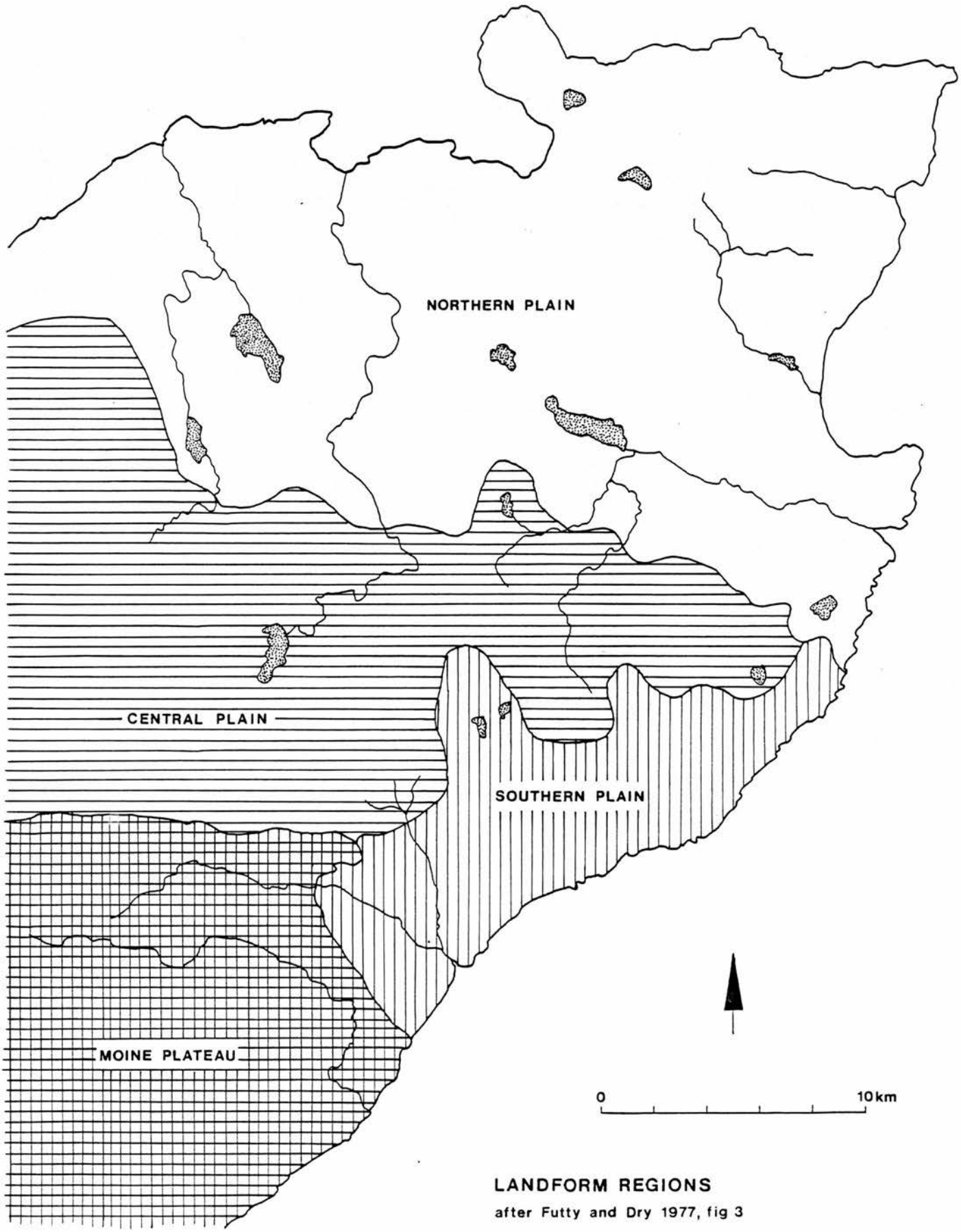
Relief of Caithness

Figure 13



Source: Omand 1972, fig 6

Figure 14

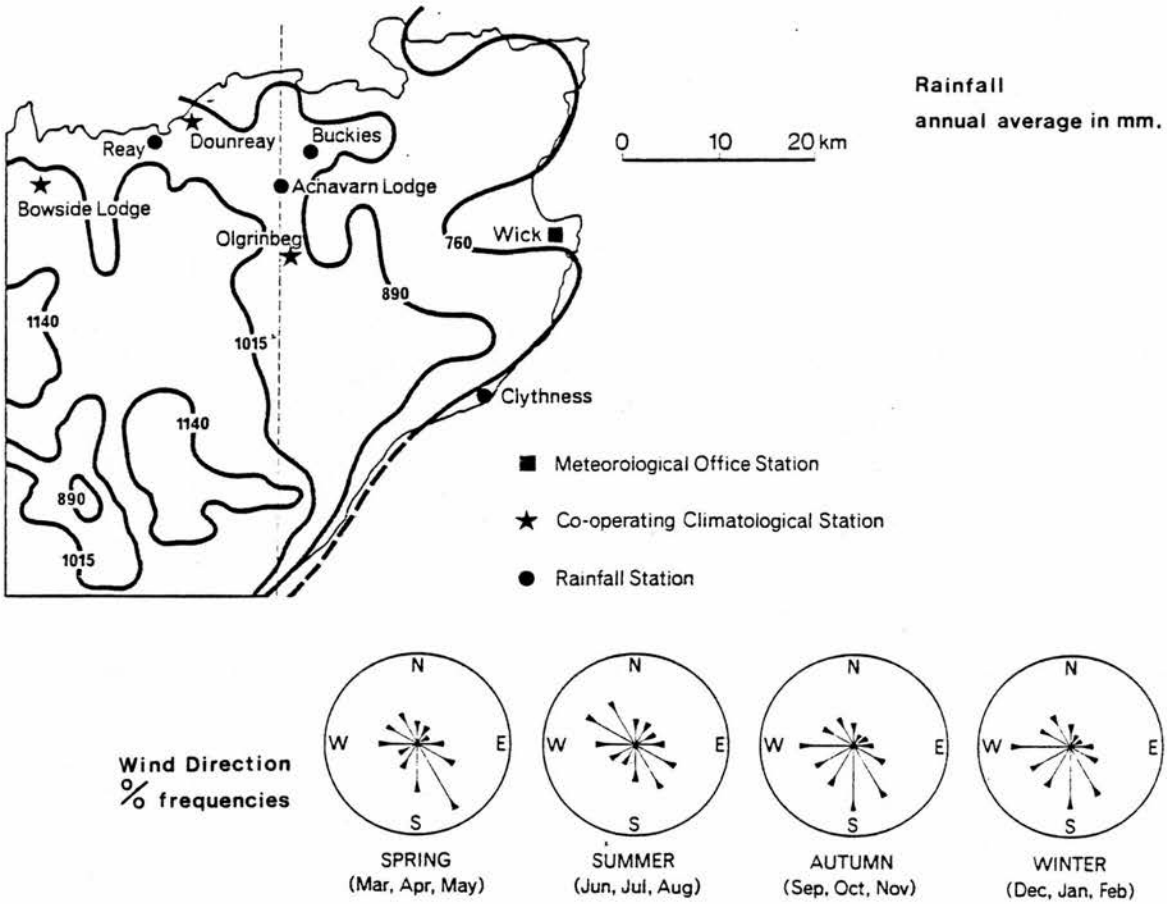


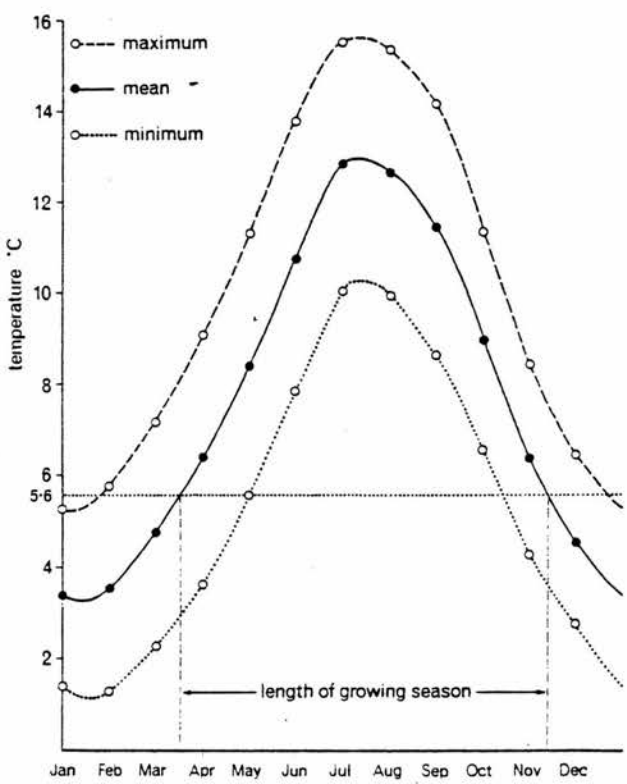
LANDFORM REGIONS

after Futty and Dry 1977, fig 3

Caithness: Main Climatic Elements

Figure 15

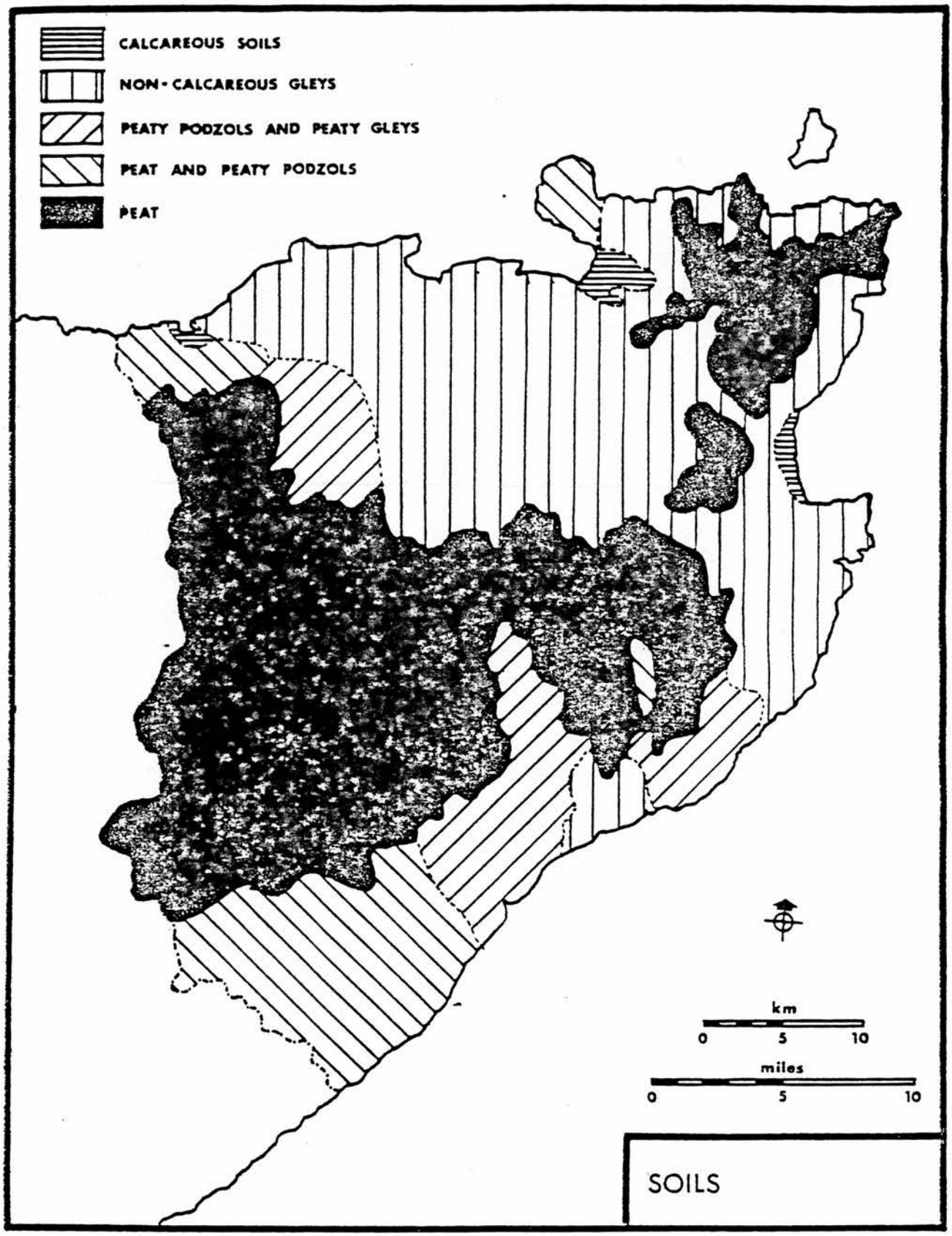




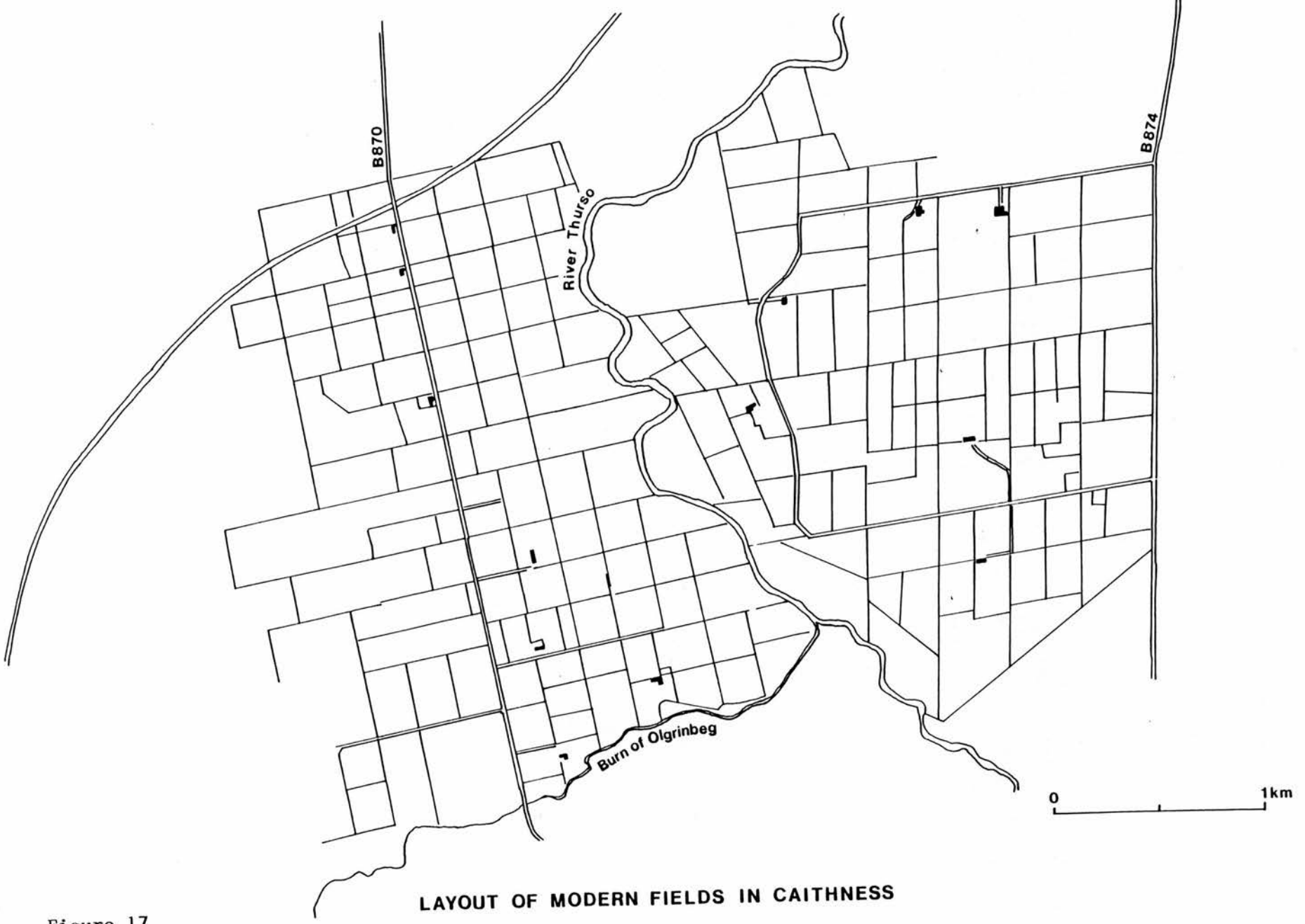
Temperatures and Growing Season

Source: Futty and Dry 1977, 8, 12, and 14

The Soils of Caithness Figure 16



Source: Omand 1972, fig 8



LAYOUT OF MODERN FIELDS IN CAITHNESS

Figure 17

The soils of the District as elsewhere are the product of a set of well recognised soil forming factors: parent material, climate, relief, vegetation, time, and man. Climate, man and time have been particularly significant in the formation of Caithness soils. Climate, with a combination of low summer temperatures and high relative humidities, has been largely responsible for the predominance of gleys, peaty podzols and blanket peat in the soils of the District (Futty and Dry 1977, 32; Figure 16). Blanket peat covers about two thirds of the District (Futty in Omand 1972, 54), and the entire landscape is virtually treeless. Man and time have contributed significantly to the present extent and type of arable soils. According to Futty and Dry, the cultivated parts of Caithness have "mostly been broken in from peaty moorland", and evidence of this origin is retained in the profiles of many soils (1977, 33).

The arable land of the District lies mainly in the Northern Plain. Medium to large sized farms are found on the best ground, particularly in a band between Thurso and Wick, with crofts occupying less productive land (Donald in Omand 1972, 184). There has been a decrease over the years in very small units, and an increase in larger sized units. Much of the land is turned over to stock grazing and the growing of stock feedstuffs, almost certainly in response to current agricultural policies and subsidies. It is fully capable of growing a range of crops, such as oats, barley, turnips and potatoes. As early as the fourteenth century, Caithness had an established trade in grain with the Baltic, and in the eighteenth century it was estimated that the average yield for oats and bere in Scotland was twofold, whereas in Caithness it was fivefold for oats and sevenfold for bere (Donaldson 1938, 16 and 26).

The modern field layout is very regular with a patchwork pattern of rectangular fields, formerly fenced by lines of standing flagstones, but now more commonly by stob and wire (Figure 17). Because there is a persistent soil water problem induced by climate, the fields are intensively drained. Ditches follow the regular lines of fences to join streams, which have been diverted and canalised to flow in straight lines towards larger water courses, such as major lochs and rivers. Occasionally a whole loch has been drained. Alterations to the natural drainage pattern also extend into some peat areas, and

programmes of reclamation are taking place, pushing back the edge of the peat.

5.2 Reconstruction of the Contemporary Landscape of Brochs

Beginning of Peat Formation

Blanket peat covers two-thirds of modern Caithness. As early as 1911, it was claimed that before the advent of cultivation, moorland had possession of nearly the whole county (Crampton 1911, 47). Crampton suggested that after the ice had retreated from Caithness, the conditions of climate, drainage, and soil formation were such, that peat growth was favoured from the beginning, growing initially in suitable hollows, and gradually spreading into a blanket cover. The only evidence for trees consisted of remains of dwarf willow in basal layers of the peat, succeeded later by remains of birch, hazel, and alder, although nearer the surface of the peat, there was some evidence in the form of preserved stumps, that pine had advanced into central Caithness from the straths of Sutherland (Crampton 1911, 1-19).

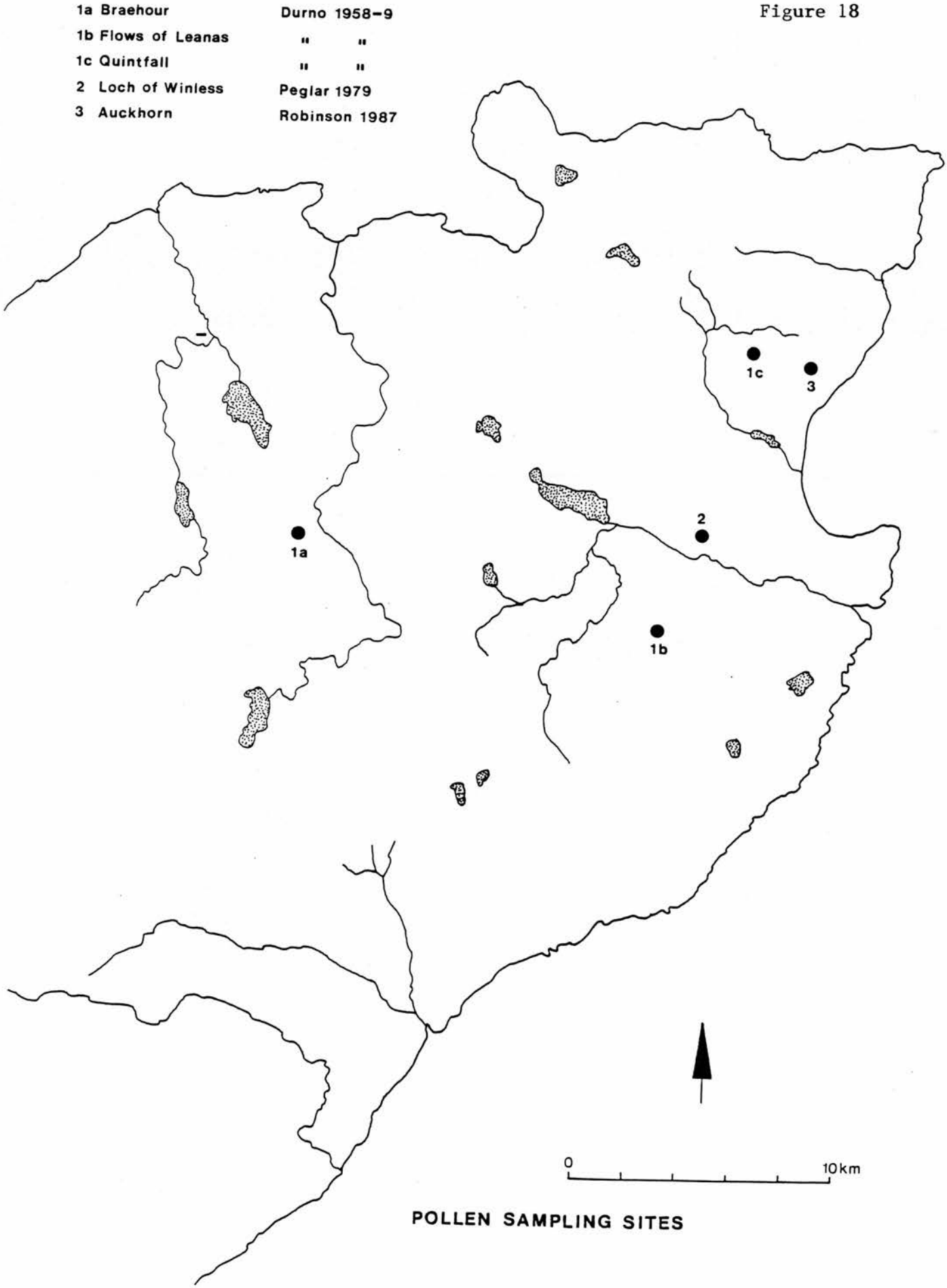
The advent of cultivation in Caithness may be presumed to have taken place at an early date, possibly the Neolithic. There is ample evidence of Man's presence at that time in the many chambered tombs in the District. Did the first agriculturalists have to deal with a virtually treeless landscape already well covered with peat, from which they had to break in arable land?.

There are a number of pieces of evidence to help answer this question.

(1) It was noted above that most of the cultivated soils of the District retain evidence that they were broken in from peaty moorland.

"Some of the cultivated soils can be clearly recognised as peaty gleys, because the horizons of the natural soil, apart from a slightly modified surface, are intact. Others, such as the Thurso series, are noncalcareous gleys, but gradations are found between this profile type and the corresponding peaty gley, indicating that over a period of time the process of cultivation can convert a peaty gley into a noncalcareous gley. Further evidence is provided by the fact that the boundaries between cultivated noncalcareous gleys and uncultivated peaty gleys sometimes coincide with fence lines. Similarly, in the peaty podzols cultivation over a long period of time destroys the upper horizons completely. Evidence for this is that fragments of a thin iron pan sometimes occur in soils which, because of cultivation, now possess a dark brown ploughed layer in place of the former organic and podzolised horizons." (Futty and Dry 1977, 33).

Figure 18



POLLEN SAMPLING SITES

(2) Durno, on the basis of three pollen diagrams for locations in the District (Figure 18), disagreed with Crampton's theory of general moorland development immediately in the postglacial period, but nonetheless confirmed an early development of peat in hollows, followed by a general growth of blanket peat by the time of the Boreal/Atlantic climatic transition, that is, between 7500 and 5000 BP or 5500 and 3000 BC (Durno 1958-9, 134). Futty and Dry concluded that the Durno diagrams indicated that the Caithness moors had had a long and continuous history of several thousand years, and that a dramatic rise in Ericoid pollen (heaths and heathers) coincided with a sharp reduction in arboreal pollen (Futty and Dry 1977, 108-9).

(3) A radio-carbon dated pollen diagram from the Loch of Winless in the East Coast Study Area (Figure 18), revealed consistently low values of tree pollen (40% or less) throughout the column, in contrast to diagrams from locations in W Sutherland and NW Ross. Between 3000 and 2200 BP tree pollen dropped to 5% or less of total pollen. The pollen evidence from the Loch of Winless suggested to its investigator that throughout post-glacial times, Caithness has been the least forested area of mainland Britain, just as it is today (Peglar 1979, 261).

(4) Investigations into peat mounds at Aukhorn, Caithness, also in the East Coast Study Area (Figure 18), confirmed the existence of very low tree pollen values, the diagrams from Aukhorn being markedly similar to those from the Loch of Winless. Peat formation at the Aukhorn mounds seems to have begun as early as 8000 bp (radiocarbon years), with a change from sedge-dominated vegetation, first to grassland, and then to heath. Peat initiation seems to have been accompanied by widespread burning, indicating the possible involvement of Mesolithic populations in the process by which peat began forming (Robinson 1987).

(5) Palaeo-environmental reconstruction in Orkney concluded that the modern vegetational and climatic environments had altered little since the Neolithic (Davidson, Jones, and Renfrew 1976, 356). A similar conclusion has been drawn for the Western Highlands of Scotland, in sharp contrast to most of the British Isles (Romans and Robertson in Evans et al 1975). It seems reasonable to infer that the Caithness

Plain may have had a similar vegetational and climatic history to its neighbouring areas.

All the available evidence points to an early onset of general peat growth in Caithness, possibly by 6000 BC. Since then there would seem to have been little change either in climate or other conditions conducive to peat formation. It would appear that the current extent of arable land has been gradually carved over the millennia from peaty moorland, but it is not clear what the extent of arable land may have been at any stage in the past, including the period when brochs were occupied.

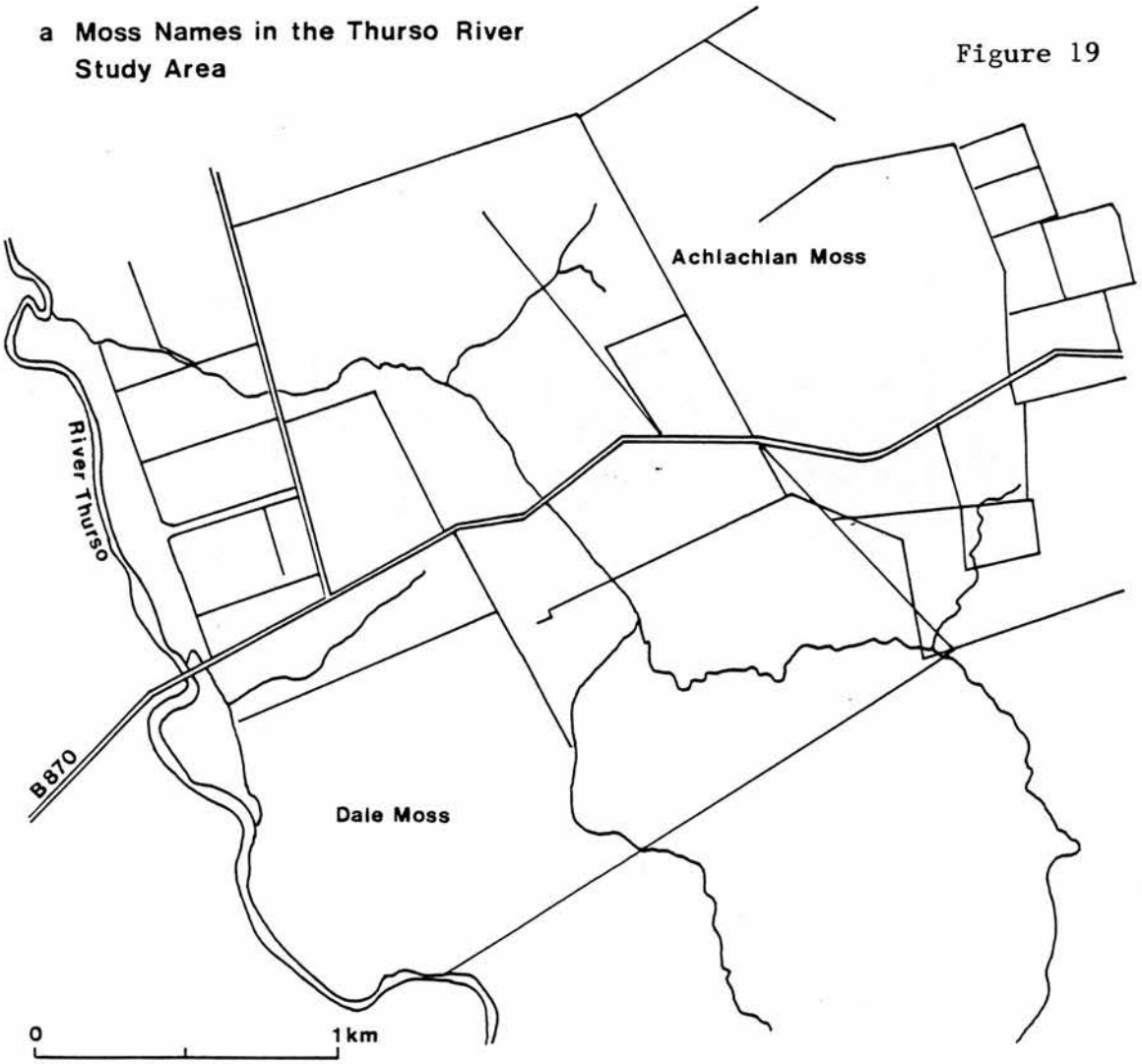
Peat/Arable Interface

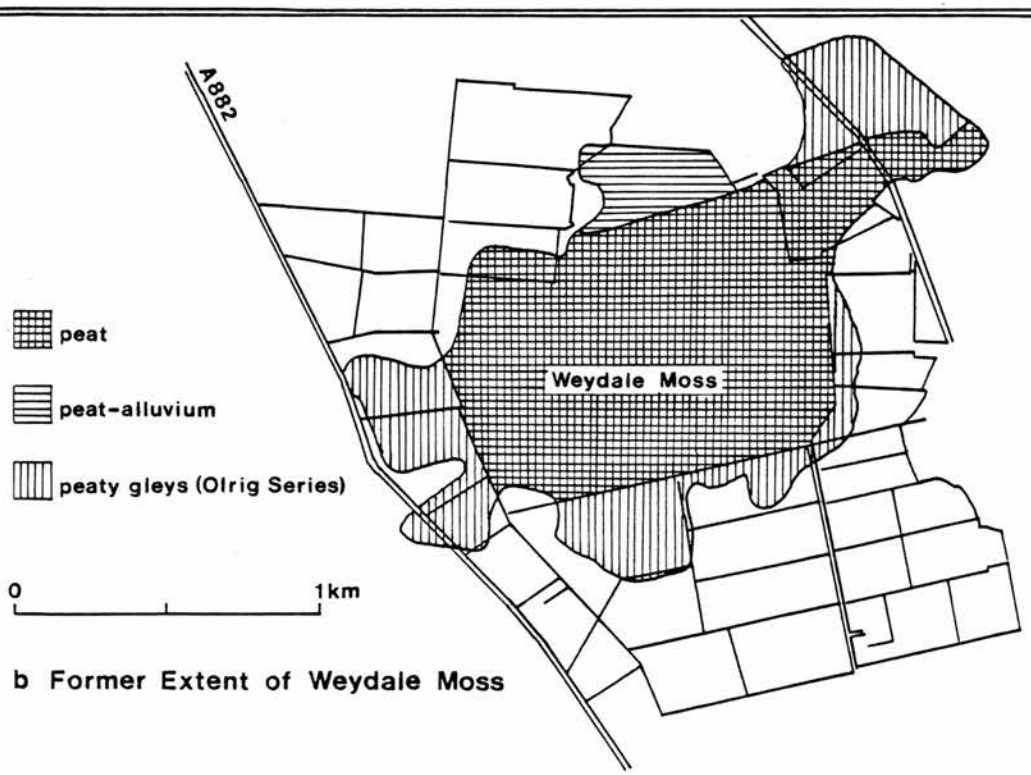
It is clear that the area of peat in the Caithness Plain was formerly much more extensive than it is today. The peat edge seems to have been particularly pushed back in the last two hundred years. The records of the Mey estate on the north coast of the District between Dunnet Bay and Duncansby Head, indicate an interest in land reclamation in the eigthteenth century (Donaldson 1938, 76-106). Arable land probably formed only about one sixth or seventh of the eighteenth century Mey estate, the remainder being moorland used for pasture. The arable land lay in blocks of varying sizes, which were being gradually enlarged by the addition of "outbreaks", that is, patches of moor broken in by the tenants. The estate rentals record that the tenants paid rent for the "outbreaks", in addition to their ordinary rent. In 1772 fourteen of the Laird of Mey's tenants were paying additional rent for "outbreaks" (Donaldson 1938, 77).

In addition to the records of the Mey estate, there is other evidence that additional arable land has been broken in from peat in recent times. Modern OS maps for the District preserve many old names for areas. In particular the maps have a large number of "moss" names, such as Weydale Moss, Achlochlan Moss and Dale Moss in the Thurso River Study Area (Figure 19a). A "moss" in Caithness is a peat area, which was used for peat cutting in the past, and which is sometimes still used for that purpose today. The name of the "moss" is usually that of the adjoining settlement, which probably had the peat cutting rights.

Figure 19

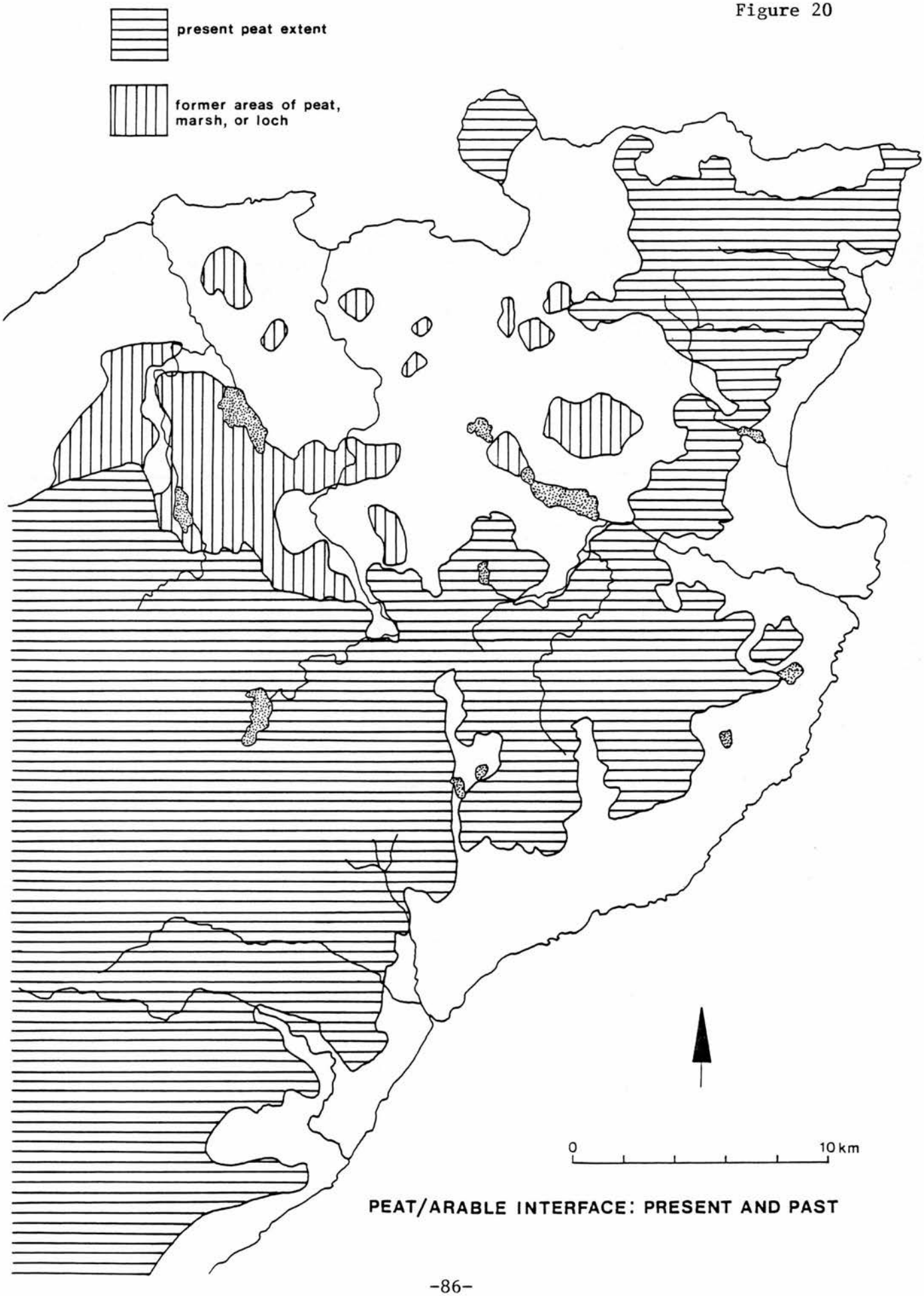
a Moss Names in the Thurso River Study Area





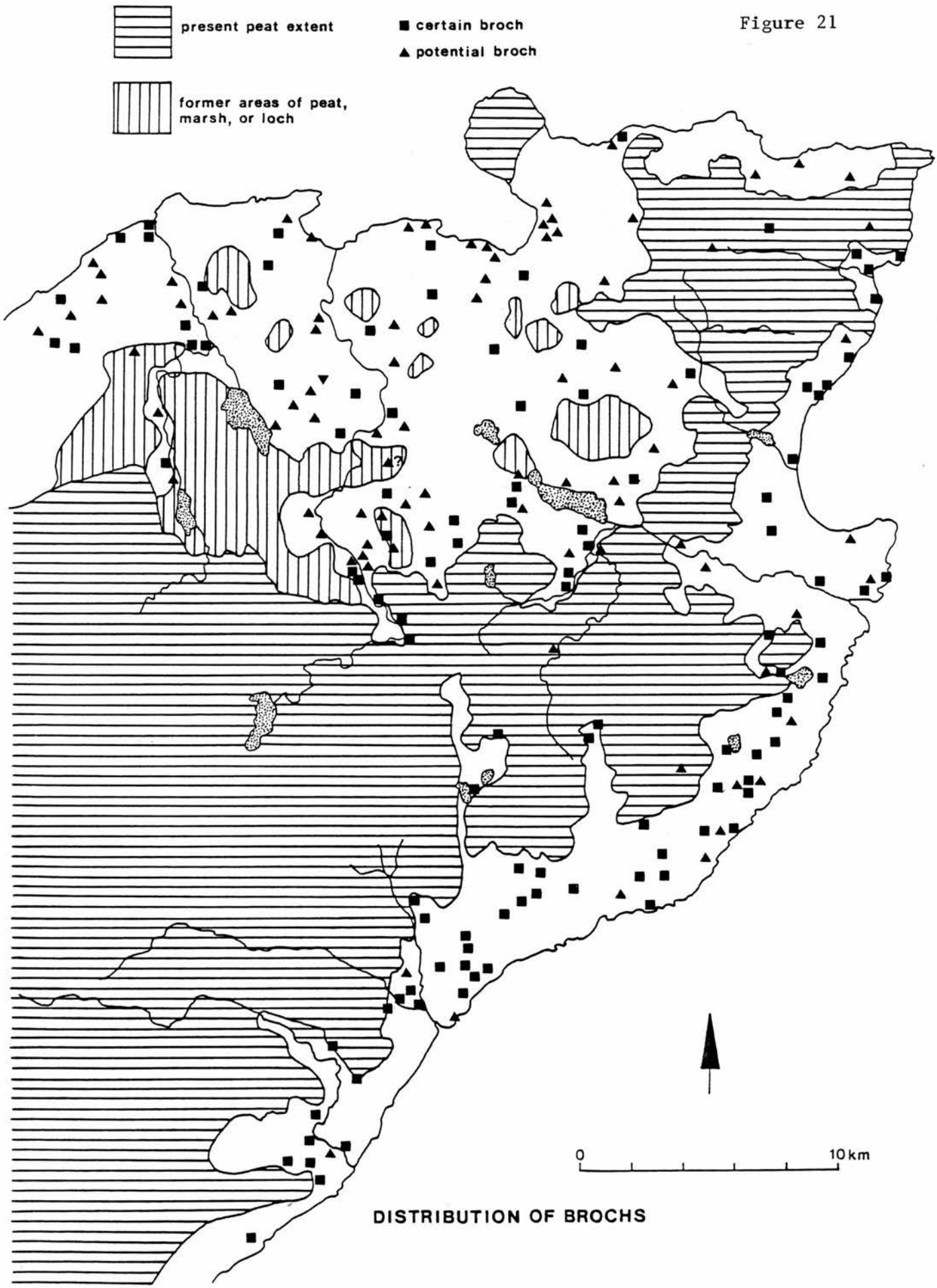
b Former Extent of Weydale Moss

Figure 20



PEAT/ARABLE INTERFACE: PRESENT AND PAST

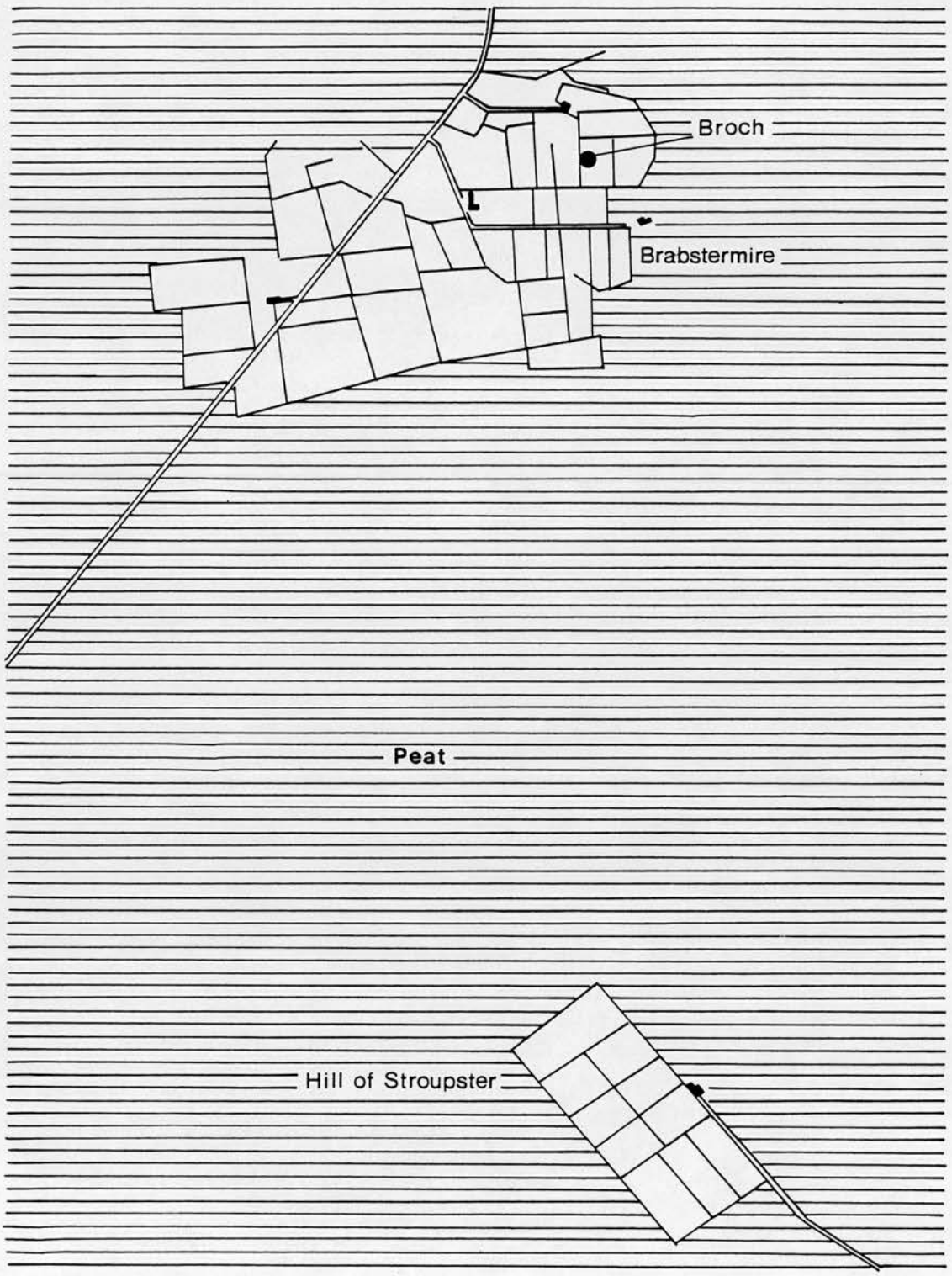
Figure 21



DISTRIBUTION OF BROCHS

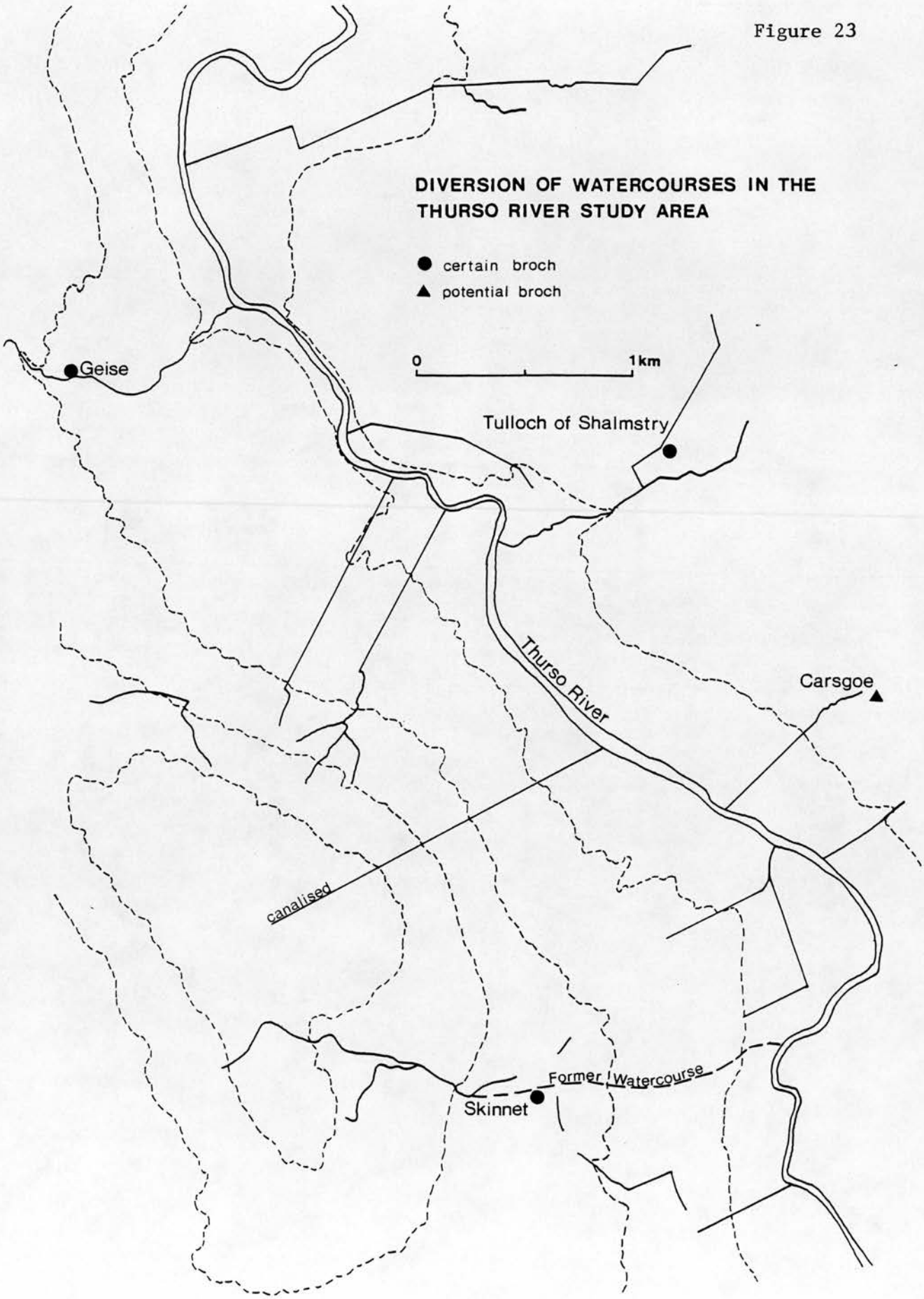
a Prehistoric Island Arable

Figure 22



b More Recent Island Arable

Figure 23


DIVERSION OF WATERCOURSES IN THE THURSO RIVER STUDY AREA
certain broch
potential broch
0
1km
Geise
Tulloch of Shalmstry
Thurso River
Carsgoe
canalised
Former Watercourse
Skinnet

Some of the Caithness "mosses" are still large peat areas, for example, Dale Moss, which is now being cut as a commercial peat operation. Others however are shrunken remnants of their former extent as a result of reclamation, such as Weydale Moss. The former extent of the peat at Weydale Moss is indicated by a soil map of the area, the land reclaimed from the peat being a soil belonging to the Olrig Series, a poorly drained peaty gley (Figure 19b). Yet other "mosses" have almost completely disappeared, such as Achlochlan Moss, which has recently undergone a major drainage scheme, and been turned over to fields of lush improved pasture. In areas where there is no "moss" name, the OS maps can sometimes still preserve indications of the peat origins of the arable land in other names. For example in the East Coast Study Area, there is Brabstermire, Myreland Horn, and Blackpark, all indicators that the ground in the vicinity was once peat.

The large-scale drainage works which have accompanied the reclamation of the peat in the last two hundred years, have not only turned large peat mosses into arable land, but have also drained a number of marshy areas, and in some cases substantial bodies of water. The former existence of lochs and marshes can be detected on modern OS maps, where boundaries indicated by fences, still follow the outlines of such areas. The soil map of the District also shows the beds of former lochs and marshes as areas of peat-alluvium complex, or as areas of undifferentiated alluvium. A final indicator of the former existence of now drained lochs is General Roy's map of Scotland, compiled between 1745 and 1760. Roy's map, for example, shows in the East Coast Study Area a loch called Loch Alterwall, which no longer exists in the landscape.

Using the available OS and soil maps for the District plus Roy's map, a distribution map of the interface between peat and arable land prior to the major agricultural improvements of the last two centuries can be drawn (Figure 20). It cannot be concluded that this map represents the distribution of arable at the time brochs were occupied, but it seems reasonable to conclude that the additional areas of peat, marsh, and loch which are shown, probably existed at that time. The map therefore allows a rather more meaningful assessment to be made of the distribution of brochs, than could be made against a modern landscape map.

5.3 Distribution Pattern of Brochs

The distribution pattern of brochs in the modern Caithness landscape is distinctly biased. Brochs crowd within the modern arable farmland and lie outside the extensive area of peat in the District (Figure 21). They also lie outside the identified former areas of peat, marsh or loch, thereby confirming the likely existence of these areas as unusable land at the time brochs were occupied. The brochs of Brabstermire (no 17) and Scoolary (no 172) in the NE of the District may appear to lie within the peat area, but closer examination shows that they are located in islands of arable land within the peat (Figure 22a). The highly regular outlines of the islands point to recent drainage and enclosure of fields, but the presence of possible broch sites suggests that these islands of arable have a much longer history, and had been broken in from the peat at least by the time of broch occupation. (The mire part of the name Brabstermire probably indicates an extension of the arable land in this area in the last two centuries, but the Brabster part of the name points to the existence of a Norse farm in the area, confirming continuity in the cultivation of this particular island of arable from the prehistoric period.) By way of contrast it should be noted that there are other islands of arable, which also have highly regular outlines, but have no evidence of the presence of a broch or any other prehistoric site (Figure 22b). These other islands of arable would appear to be much later additions to the extent of arable land, and indicate the complexity involved in attempting to trace the details of the peat/arable interface over time.

A further indication of this complexity can be found in the location of some broch sites close to the peat edge. It is likely that the peat edge has oscillated in a complex fashion, rather than the peat being constantly pushed back over the millennia. In some areas land which may have been arable in prehistoric times, seems to have been abandoned, and a deep peat cover has grown over it. This can be seen in the area of the Camster cairns, where there are small cairns, which may be burial, land clearance, or both, under about a metre of peat (an excavation of one of these cairns was carried out in 1979 during the Masters excavation at the chambered cairn of Camster Long). The

location of some certain brochs within or very close to the peat edge, such as, Camster 1 (no 30), Camster 2 (no 31), Carn na Mairg (no 34), Tulach Beag (no 91), Tulach Mor (no 94), and Warehouse (no 103) (Figure 21), seems to indicate that the peat edge may have been allowed to advance in some areas since the period when brochs were occupied. Indeed there are field boundaries under the peat at Dale Moss in the vicinity of Carn na Mairg, Tulach Beag, and Tulach Mor (Robert Gourlay, pers. comm.).

Within the extent of pre-eighteenth century arable land the distribution of brochs is far from even. There are distinct clusters of sites in some areas, such as, at Westerdale on the Thurso River (nos 34, 35, 91, 92, 93, 94, 117, 133, 134, 188); at Watten (nos 10, 33, 106, 108, 115, 126); and at Keiss (nos 53, 75, 109) (Figure 21). There are other distinct clusters along the coastal fringe to the south of Wick. It is possible that some sites may have been misidentified, but the majority of the sites in the clusters would appear to be brochs. For example, the three sites in the Keiss cluster in the East Coast Study Area have been proved to be brochs by excavation. The Harbour Mound (EC 12) and the Whitegate (EC 11) brochs are about 180m apart on the foreshore at Keiss, and the Road broch (EC 10) lies about 600m NW of them. These sites do not of course have to be contemporary, but the very lengthy sequence of occupation indicated on Caithness broch sites in general (see Chapters 7 and 8), points to the strong likelihood that the sites did overlap in time.

As well as distinct clusters in the distribution, there are distinct gaps. The gaps seem strange when contrasted with the apparent high density of sites in the clusters. Some of the gaps have been identified as likely areas of peat, marsh, or loch at the time brochs were occupied, but on present evidence other gaps cannot be accounted for in this way. It may be that there were further unusable areas of ground, or it may be that there have been a number of unrecorded destructions of brochs. The close spacing of sites in the clusters, plus the existence of sites in islands of arable land within major peat areas, would seem to indicate that there was perhaps some pressure on available arable land, with a consequent need to colonise and break in less usable areas. In such circumstances it does not seem

reasonable to assume that existing suitable arable land would have remained without a broch site, unless there were very particular reasons for this. The scale of agricultural improvements which have taken place in Caithness should perhaps warn that in the first instance a search should be made for further destroyed sites, and further reclaimed areas, before any other explanations for the gaps are sought.

In some areas there is a sense of regular land division with broch sites regularly spaced, for example, along the valley of the Forss Water towards the western boundary of the District (nos 19, 97, 158, 181), and in the uppermost reaches of the Thurso River (nos 34, 91, and 94) (Figure 21). In other areas land division appears to be less regular, and sites crowd closely together. It may be that the closely crowded areas had been settled and worked for a long period before brochs were built, and the distribution of broch sites in these areas is a reflection of this.

Brochs are generally more densely spaced than the modern villages in the District, for example, there are three brochs adjacent to the village of Keiss in the East Coast Study Area. They are however generally less densely spaced than modern farms, in that not every farm has a broch on its land, even in areas where arable land has probably been established for a very long time. By contrast some farms have more than one broch, for example, there are two at Knockglass in the valley of the Forss Water (nos 56 and 57) (Figure 21). In many cases the broch sits very close to the modern farmhouse. At Cogle (no 36), Hoy (no 52), and Achanarras (no 111) (Figure 21), the broch mound is actually incorporated within the farm stackyard.

There is no evidence of a particularly coastal distribution of sites, except in as much as arable land fringes the coastline in the north and east of the District. Most of the sites lie well inland from the coast. There is some evidence that many sites may have been located close to watercourses. This can be seen clearly in the Thurso River Study Area where the broch sites are located along both banks of the river, generally above the level of the floodplain in its lower reaches, but close to the banks in its upper reaches. In the lower reaches some sites appear to have been located on or close to small

tributaries of the river, such as, Geise (no 139) and Housle Cairn, Gerston (no 51) (Figure 23). Other sites, such as, Skinnet (no 79) and Tulloch of Shalmstry (no 96) appear to have been similarly located, but large scale drainage works have diverted, canalised, and largely removed the tributary streams, so that they are no longer obvious (Figure 23). There are indications that this location characteristic may have occurred in other parts of the District, but has been obscured by drainage works. The existence of such a location characteristic may allow unidentifiable mounds, such as Leosag (no 152) (Figure 21), lying in the angle of the confluence of the Olgrimbeg Burn and the Thurso River, to be more certainly identified as a broch.

5.4 Landscape and Broch Function

There can be no doubt that the distribution of brochs in Caithness has a significant correlation with land suitable for arable cultivation, both today and at the period when brochs were occupied. The correlation with arable land is confirmed by the many finds of querns, both saddle and rotary, from broch sites in the District, indicating that grain was grown, albeit that most of the finds from old excavations are unstratified (Caulfield 1977-8). The only broch excavation in Caithness to produce a range of environmental evidence, was Crosskirk, where there was found:

"abundant evidence of both pastoral and arable agriculture in a treeless landscape.
Six row barley was grown, with oats if only as a weed and may have been threshed in the broch. Flax may also have been a crop." (Dickson and Dickson in Fairhurst 1984, 155).

Bones of cattle, domestic pig and sheep were also found at Crosskirk, with cattle bones predominating (Macartney in Fairhurst 1984, 133-47). Not all of the bone material found during the excavation was kept for detailed examination (Macartney in Fairhurst 1984, 135), and there is no discussion in the specialist report of any changes in numbers and proportions of animal bones on the site over time. The following general remarks were made however with regard to the bones:

"Unless there is quite dense deciduous woodland available, the pig, being neither a grazing animal nor able to feed on seaweed, has to be fed almost entirely by the farmer. We can quite confidently assert

that this would have been so at Crosskirk. Sheep on the other hand, are grazers and can use poorer natural feed than cattle, especially if they are either hill sheep or not highly bred. If, in addition to modest supplies of grass and good supplies of stored fodder, there was also available seaweed, on which both sheep and cattle browse very willingly, then the capacity to maintain healthy and quite large breeding stocks of both would have been assured. Seaweed is found in greater quantities in winter than in summer, and thus offers the possibility of an all-year grass/seaweed balance. If the foreshore at Crosskirk was not accessible to livestock, and this is very doubtful, the seaweed could have been gathered for them." (Macartney in Fairhurst 1984, 147).

Brochs were evidently closely connected with the process of gaining a living from the land by means of a mixed agricultural system. In terms of function it seems reasonable to see brochs first as an integral part of the contemporary land use pattern, and to identify them at a general level as the farming settlements of their time. This does not preclude a range of more specific functions for the broch structure, and problems in this respect are discussed in detail in Chapter 8.

If brochs were farming units, they were connected with the operation of a mixed farming economy, as revealed by the Crosskirk excavation where evidence of both pastoral and arable agriculture was found. It is difficult to envisage how this could have been achieved without some kind of field system to keep the animals out of the crops. Because of the major difficulties with soil water in the District, which led to the formation of so much peat, any fields must have had some form of drainage, possibly by being located on available slopes and being ploughed or dug in rig and furrow. No evidence of any field system around brochs has been found by field survey. This is perhaps not surprising in view of the changes which have taken place in the Caithness landscape. On the other hand there has been no attempt to pick up evidence of field systems by other means, such as, excavation outside the confines of the broch site, or aerial survey in selected areas under optimum conditions, or probing through the peat. For instance, the field boundaries under the Dale Moss may be related to the three brochs on the edge of the Thurso River in that area. It seems reasonable at least to hypothesise that field systems must have existed around brochs, and to design some means of testing such a hypothesis by further research.

This chapter has sought to portray a general picture of brochs and the land in Caithness, by bringing together available sources of

palaeo-environmental information. It can be no more than a general review, because the evidence simply does not exist at present to allow a definitive picture to be built. For instance, it would be premature to consider size of contemporary land divisions, or contemporary carrying capacities (Heisler 1978), when there is so much uncertainty about the identification of upstanding sites as brochs (see Chapter 4), about the possible number of site destructions, and about the extent of arable land and rough grazing during the period of broch occupation. The chapter does however provide a number of pointers to specific research work which could be done in order to approach a closer understanding of the relationship between brochs and the land in Caithness. These may be summarised as follows.

(1) A programme of survey work to identify broch mounds with more certainty.
(2) Further work to identify the detailed location of the peat/arable interface in the broch period.
(3) Detailed geomorphological analysis of individual broch locations, to identify local topography and the natural system of drainage.
(4) Survey work to identify any field systems around brochs.
(5) Research into contemporary land divisions, possibly through work on the settlement and land holding patterns of later periods, such as, the Norse period, which may encapsulate some earlier patterns.

Table 11 **Caithness: Potential Water Balances (mm)**

	Oct-Mar	Apr	May	June	July	Aug	Sept	Accumulated Deficit	Accumulated Surplus
Wick 36m OD									
Rainfall	405	52	46	52	65	67	74		
Potential Evapo-Transpiration	71	55	74	82	76	60	42		
Potential Water Balance	+334	-3	-28	-30	-11	+7	+32	-72	+373
Buckies 73m OD									
Rainfall	548	63	56	63	79	84	95		
Potential Evapo-Transpiration	43	52	73	81	73	58	39		
Potential Water Balance	+505	+11	-17	-18	+6	+26	+56	-35	+604

Source: Futty and Dry, 1977, 18

CHAPTER 6 SITE MORPHOLOGY 1: THE BROCH MOUND

The detailed morphology of the typical broch has been known and accepted for a very long time (see Introduction, Chapter 1, and Figure 2, p9). However, in terms of the archaeological sites which are called brochs in Caithness, there is considerable variation between the traditional understanding of broch morphology and the actuality of site morphology as revealed both by excavation and field survey. In attempting to reach a better understanding of brochs, it is important that actual details of site morphology should be identified on as many individual sites as possible. It is the object of this chapter and the following two chapters to examine the actual morphology of brochs in Caithness, by reference to the detailed field analysis in the three study areas and the excavation record.

Discussion of site morphology has to be split among three chapters because of the sheer complexity of broch sites in Caithness. Brochs in Caithness are by no means the single isolated buildings portrayed in the traditional understanding of the typical broch. It has been known from the antiquarian period, that there is more than just a broch structure on broch sites in the northern mainland and islands, but until recently the fuller archaeological picture has been largely ignored, with the additional material being dismissed as the remains of secondary buildings. There is now reason to believe that this was a misconception of the true nature of broch sites in the north. In order to examine the true nature in detail, this chapter deals with the wider morphology of the broch mound in Caithness, whilst Chapter 7 examines the buildings around brochs and their relationships to the broch structure, and Chapter 8 concentrates finally on the morphology of the broch structure and its internal area, the aspects which have received most attention in the past.

Section 6.1 below examines the dimensions and profiles of broch mounds in Caithness; section 6.2 assesses the average contents of a Caithness broch mound as revealed by the excavation and survey record; and section 6.3 considers the occurrence and nature of outworks at broch sites in Caithness.

6.1 Dimensions and Profile of the Broch Mound

As pointed out in Chapter 4, except where excavated, sites called brochs in Caithness are usually turf covered mounds, which can sometimes be difficult to identify positively. Nonetheless the broch mounds do exhibit some very distinct features, which are consistently replicated from site to site. In general the mounds are large. (Table 12 (p124) provides a list of the dimensions of a number of mounds in the three study areas). A diameter of 40-50m is not uncommon, and some of the mounds are up to 4-5m high. There are exceptions however to this general rule. For example, Achingoul (TR 16) and Achlochlan Moss (TR 21) in the Thurso River Study Area have both been identified as brochs by other authorities. Both appear as simple rings, less than 30m in diameter, and only 1-2m high (Figure 24). These sites are so different from other sites identified as brochs in the Thurso River Study Area, that it is possible that they have been wrongly identified. Otherwise, they have to be regarded either as being very severely damaged, or as representing some variation of the normal form of a Caithness broch.

The broch mounds in Caithness have not remained unaffected by the agricultural improvements which have taken place in the District. Many have been damaged in some way, serving as useful quarries for stone for houses, walls, and roads. Their present dimensions and appearance can therefore be misleading. Some broch mounds have been in large part removed, such as, Tulloch of Shalmstry (TR 2), Skinnet (TR 5), and Dale Farm (TR 19) in the Thurso River Study Area. Despite their erosion however these sites are still recognisably broch mounds (Figures 25 and 35b), thereby confirming that the sites of Achingoul and Achlochlan Moss in the same study area should perhaps be identified as a type of site other than a broch.

At some broch mounds the full extent of archaeological remains may be hidden under present land use and vegetation. At Crosskirk Fairhurst noted that:

"It must be emphasised that the appearance of the site before operations began was most deceptive. The very distinctive mound was in fact confined to the area of the broch itself, while the pastureland to the E and S gave not the slightest indication either of the extensive structures which were to be encountered during excavations,

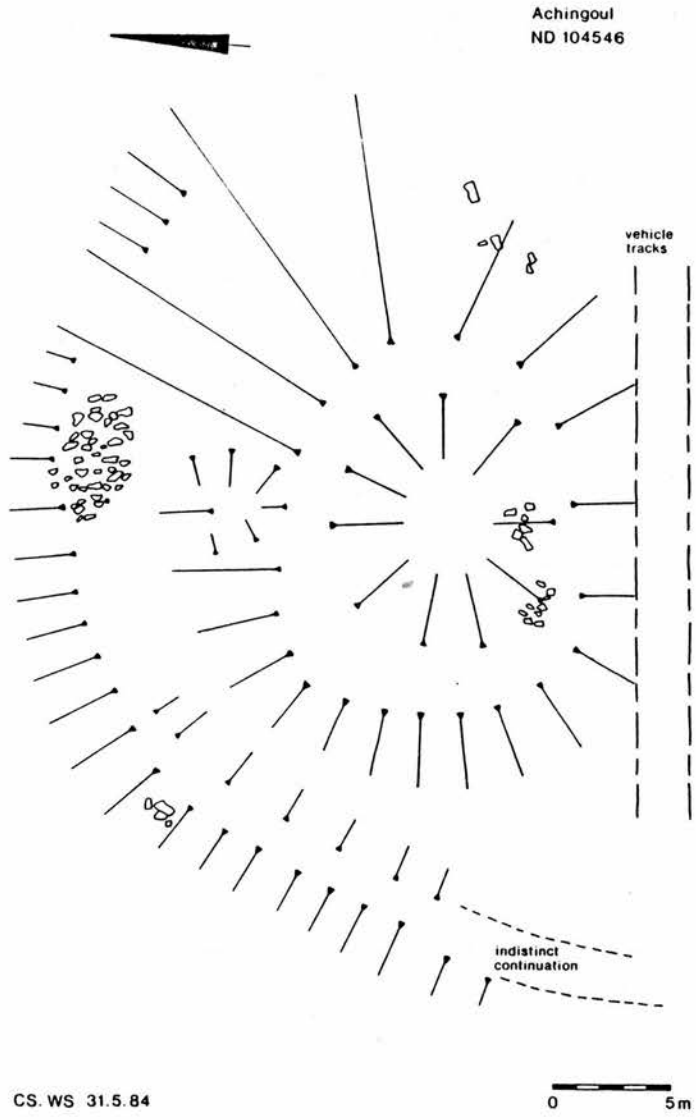
nor of the 2m of made ground concealing the external settlement." (Fairhurst 1984, 23).

A similar situation may pertain at the Road broch (EC 10) in the East Coast Study Area. It was first excavated in 1864, when a section was drawn indicating the remains of a shell midden and an overlying structure immediately adjacent to the road edge (Laing and Huxley 1866, 19; Figure 26a). Laing noted that the shell midden was at least 5 feet deep, covered several hundred square yards, and contained animal bones and teeth, chipped flints, stone and bone implements, and pottery (1866, 20). The broch complex at Road however, as revealed later by Sir Francis Tress Barry, is set back from the road edge by about 20m, the intervening area containing the Keiss war memorial. It seems most unlikely that the position of the road has changed, and there is some evidence at the site that the complex of remains does in fact continue under the war memorial enclosure (see site catalogue). It would appear that the actual extent of remains at the Road broch is even larger than the sizeable area exposed by Tress Barry, which measures about 47m by 63m. There is reason to believe that extended remains may also exist at Ness (EC 6), Whitegate (EC 11), and Hillhead (EC 23), also in the East Coast Study Area.

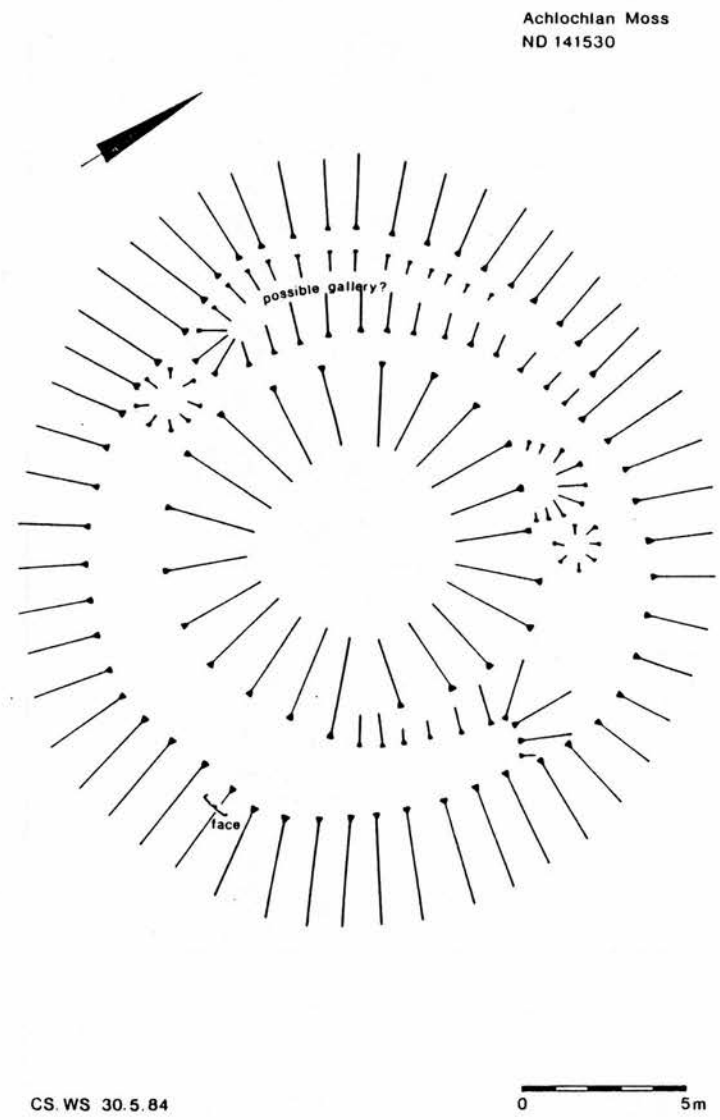
It has been noted by several field workers, that many Caithness broch mounds display a stepped profile. The RCAHMS described this profile as the remains of a broch sitting on a grassy hillock, suggesting that the hillock was at least in part artificial (RCAHMS 1911b, 87, no 319 or no 321 etc). The OS frequently referred to the profile in their survey work as the "usual mound-on-mound appearance" (recorded on many individual OS, now NMRS, cards). Mercer has noted in his field work that:

"It is clear from inspection of the mounds in question that in almost every instance they are composite features of complex structures revealing a "mound upon mound" profile..." (Mercer 1985, 98).

On present field survey information 46 unexcavated certain broch mounds in the District have a distinct mound-on-mound profile (see Table 9, pp62-7), and 9 potential broch mounds have a slightly stepped profile (see Table 10, pp68-72). Some of these occur within the study areas, such as, Housle Cairn, Gerston (TR 7) and Achies 2 (TR 13; Figure 33a) within the Thurso River Study Area, and Tiantulloch (DW 1;

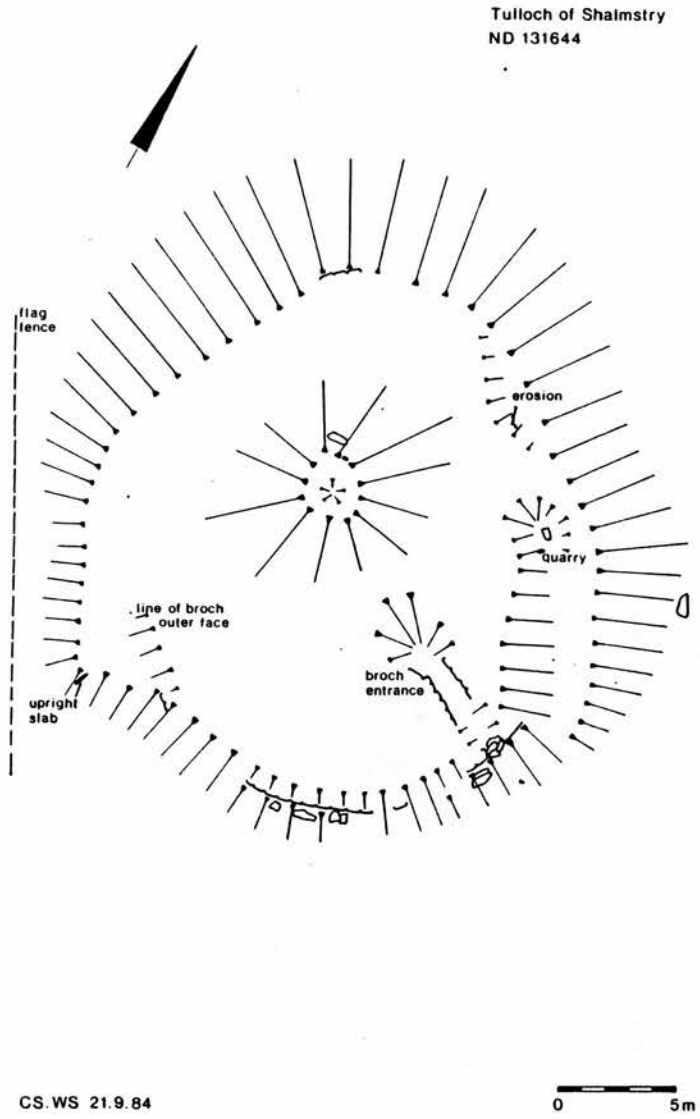

Achingoul
ND 104546
vehicle tracks
indistinct continuation
CS. WS 31.5.84
0
5m

(a)

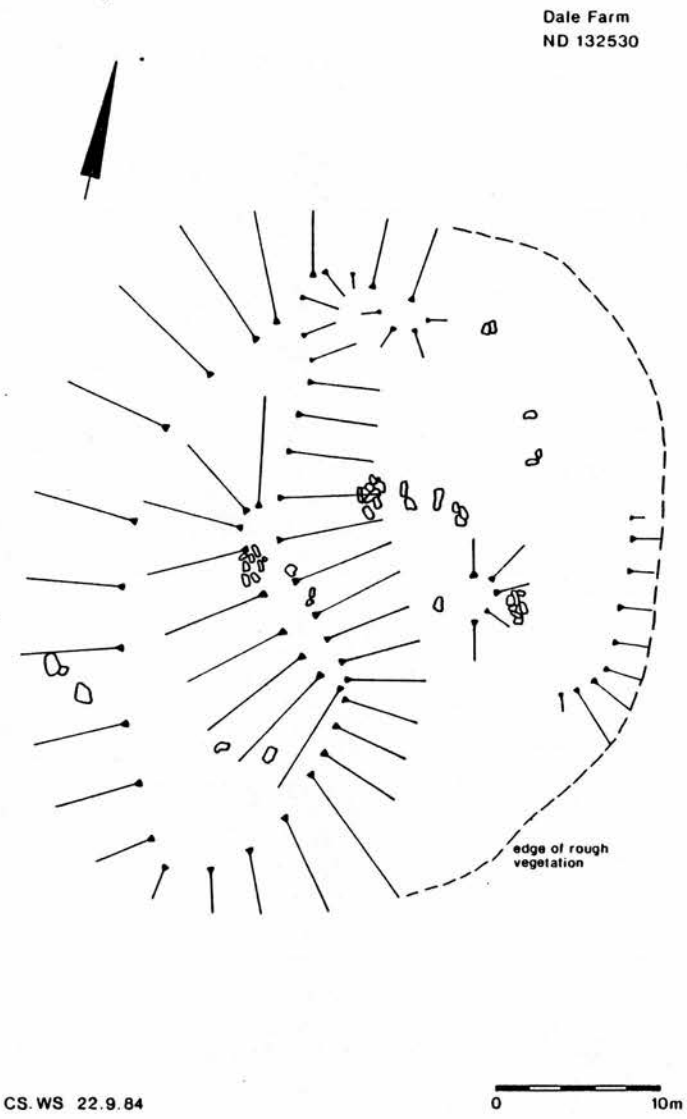

Achlochlan Moss
ND 141530
possible gallery?
face
CS. WS 30.5.84
0
5m

(b)

Figure 24


Tulloch of Shalmstry
ND 131644
flag
fence
erosion
quarry
line of broch
outer face
broch
entrance
upright
slab
CS.WS 21.9.84
0
5m

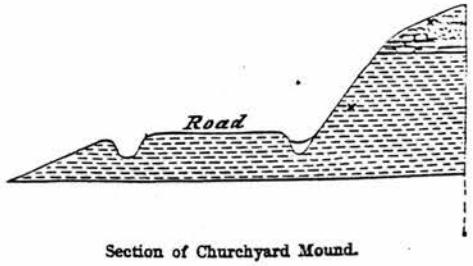
(a)


Dale Farm
ND 132530
edge of rough
vegetation
CS.WS 22.9.84
0
10m

(b)

Figure 25

Excavations at the Road and Harbour Mound Brochs 1864 Figure 26

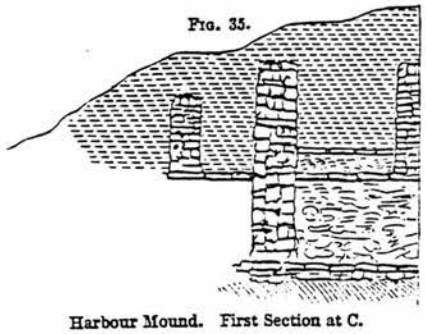


Section of Churchyard Mound.

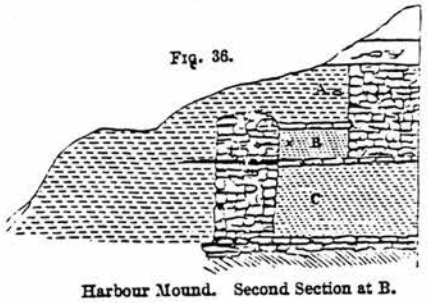
(a) Section through Road Broch

Harbour Mound.

(b) Harbour Mound prior to excavation



Harbour Mound. First Section at C.



Harbour Mound. Second Section at B.

(c) Sections through the Harbour Mound

Source: Laing and Huxley 1866, 19, 22 and 24

Figure 30b) and Minera (DW 2; Figure 30a) within the Dunbeath Water/Burn of Houstry Study Area. In addition, it does not seem unreasonable to postulate that some of the 33 excavated brochs in Caithness (see Table 2, p 37) may have exhibited stepping of the profile of the broch mound prior to excavation. Such stepping of the mound can be seen for instance at the partially excavated broch of Carn na Mairg (TR 28; Figure 28) in the Thurso River Study Area, and at the partially excavated and backfilled broch of Bail a'Charn (Figure 27). If more detailed field survey of the kind carried out in the three study areas were to take place, it is very likely that the number of broch mounds known to exhibit a stepped profile would be substantially increased. A mound-on-mound or stepped profile may reasonably be taken to be a relatively normal feature of a broch mound in Caithness.

6.2 Contents of the Mound

There seems little doubt that the Caithness broch mounds, whatever their dimensions or shape, are wholly artificial. Small grassy hillocks, or rock outcrops, are not a natural feature of the smooth, gently undulating erosion surface of Caithness. The archaeological remains are likely to have been founded originally on a relatively flat ground surface, and any stepping or other configuration visible in the turf of the mound is entirely the product of a complex of underlying structures. This was demonstrated at an early date, when the Harbour Mound broch (EC 12) in the East Coast Study Area was first excavated in 1864. A sketch was drawn of the mound prior to its excavation (Figure 26b), showing it to have a profile very similar to that of the broch of Mybster (TR 22) in the Thurso River Study Area, with some slight stepping evident. Sections through the mound were also drawn showing how the smooth profile of the turf cover bulged up over underlying walls (Laing and Huxley 1866, 22 and 24; Figure 26c).

It can be demonstrated from both the excavation and field survey record, that the turf of the broch mounds covers two regularly recurring components - the broch structure; and a set of less substantial surrounding buildings, sometimes called an external settlement. It has also been suggested that the broch mound may in

some cases contain a substantial layer of occupation debris preceding the foundation of the broch structure (Mercer 1985, 98).

The Broch Structure

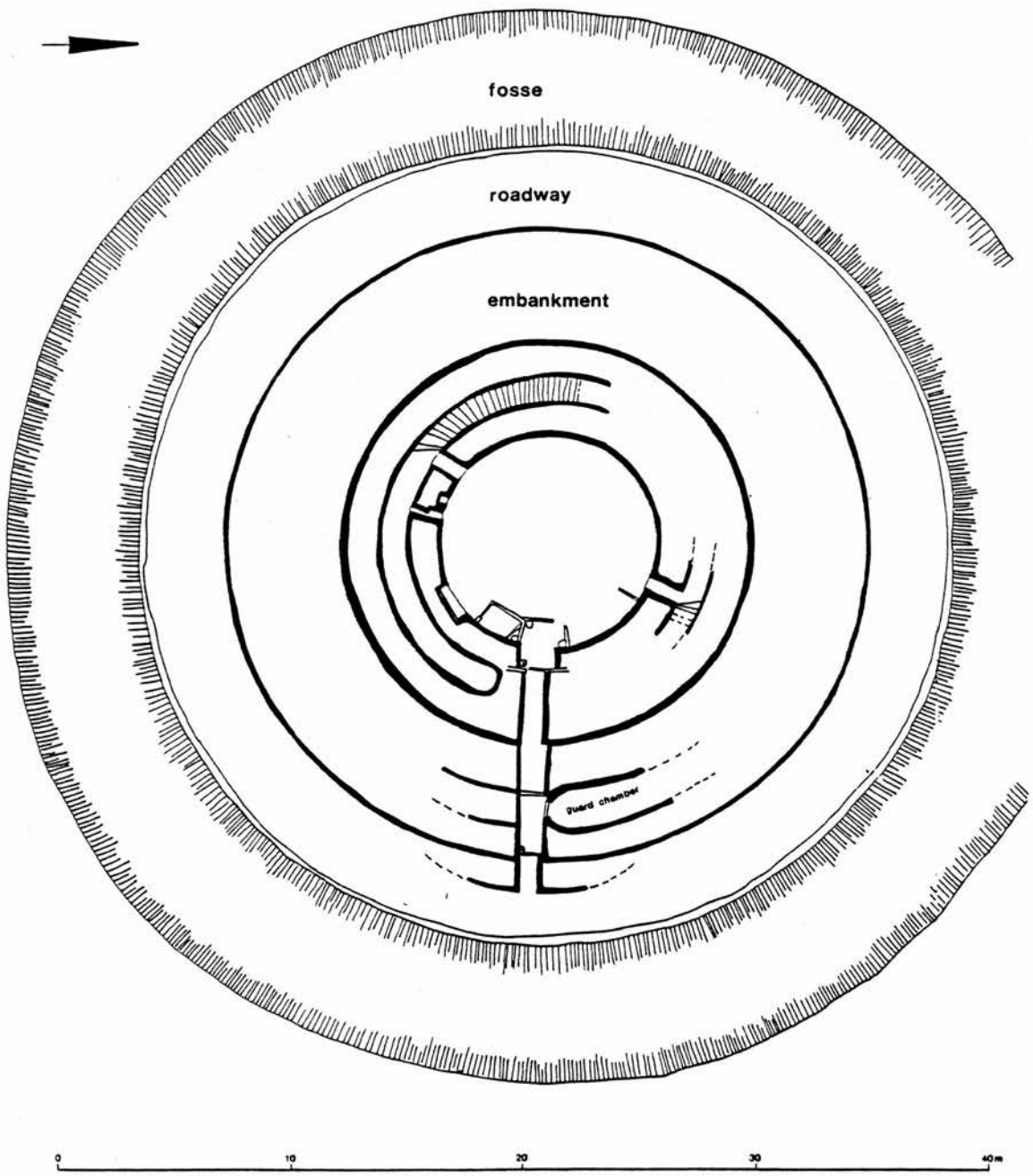
The broch structure is invariably contained in the highest part of the mound, or the upper mound of the mound-on-mound. This has been noted in field survey, both in the three study areas, and by Mercer (1985, 98); and has been demonstrated by excavation at several sites, such as, Bail a'Charn near Watten (Figure 27), Carn na Mairg (TR 28; Figure 28) in the Thurso River Study Area, and Yarrows to the south of Wick (Figure 29). The upper mound containing the broch structure is frequently centrally disposed to the lower mound on which it appears to sit. It can however be placed to one side, as at Minera (DW 2; Figure 30a) in the Dunbeath Water/Burn of Houstry Study Area, where the broch lies towards the east side of the mound, its presence revealed by a curving outward facing revetment, clearly the top of the outer face of the broch wall protruding through the turf. The entrance to the broch at Minera, indicated by an in-situ lintel, faces west over the lower portion of the broch mound. The details of broch structures and their internal areas, as revealed by excavation in Caithness broch mounds, are considered fully in Chapter 8.

Evidence for Preceding Occupation

Following the RCAHMS and OS view that the stepped profile of many Caithness broch mounds represents a mound-on-a-mound, it has been suggested that the broch structure contained in the upper mound, is in many instances secondary, built high up and on top of a lower mound containing earlier structures (Mercer 1985, 98). Experience at Howe in Orkney has provided some corroboration for this suggestion, by demonstrating that a broch structure within a broch mound in the north can be founded on a substantial depth of preceding archaeological stratigraphy (Carter et al 1984). It is not clear however that the mound-on-mound profile of every Caithness broch mound can be explained as simply as this.

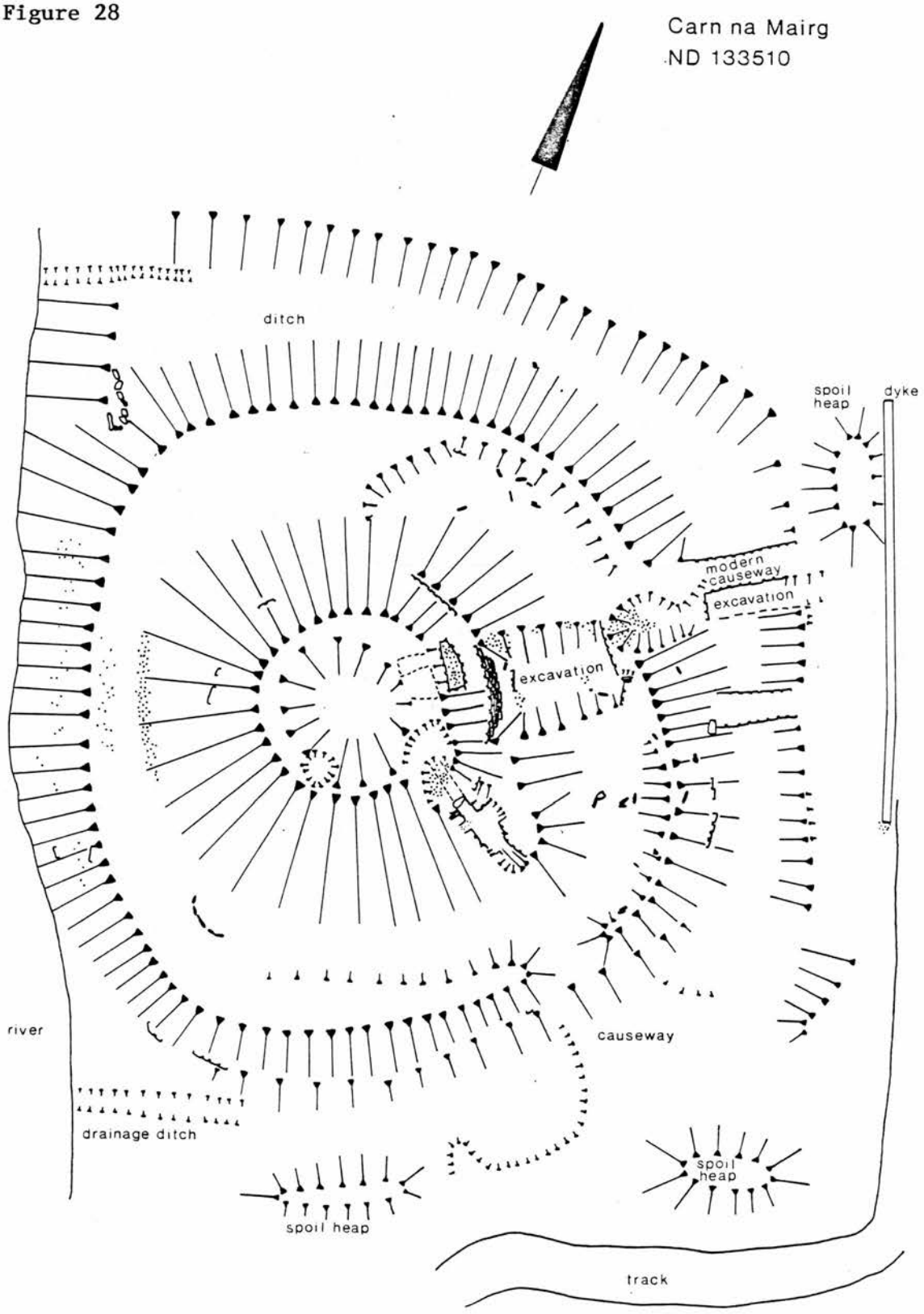
The broch of Carn na Mairg (TR 28; Figure 28) in the Thurso River Study Area, for instance, has a very distinct mound-on-mound profile. A partial, unrecorded excavation in the 1950s revealed the outer face

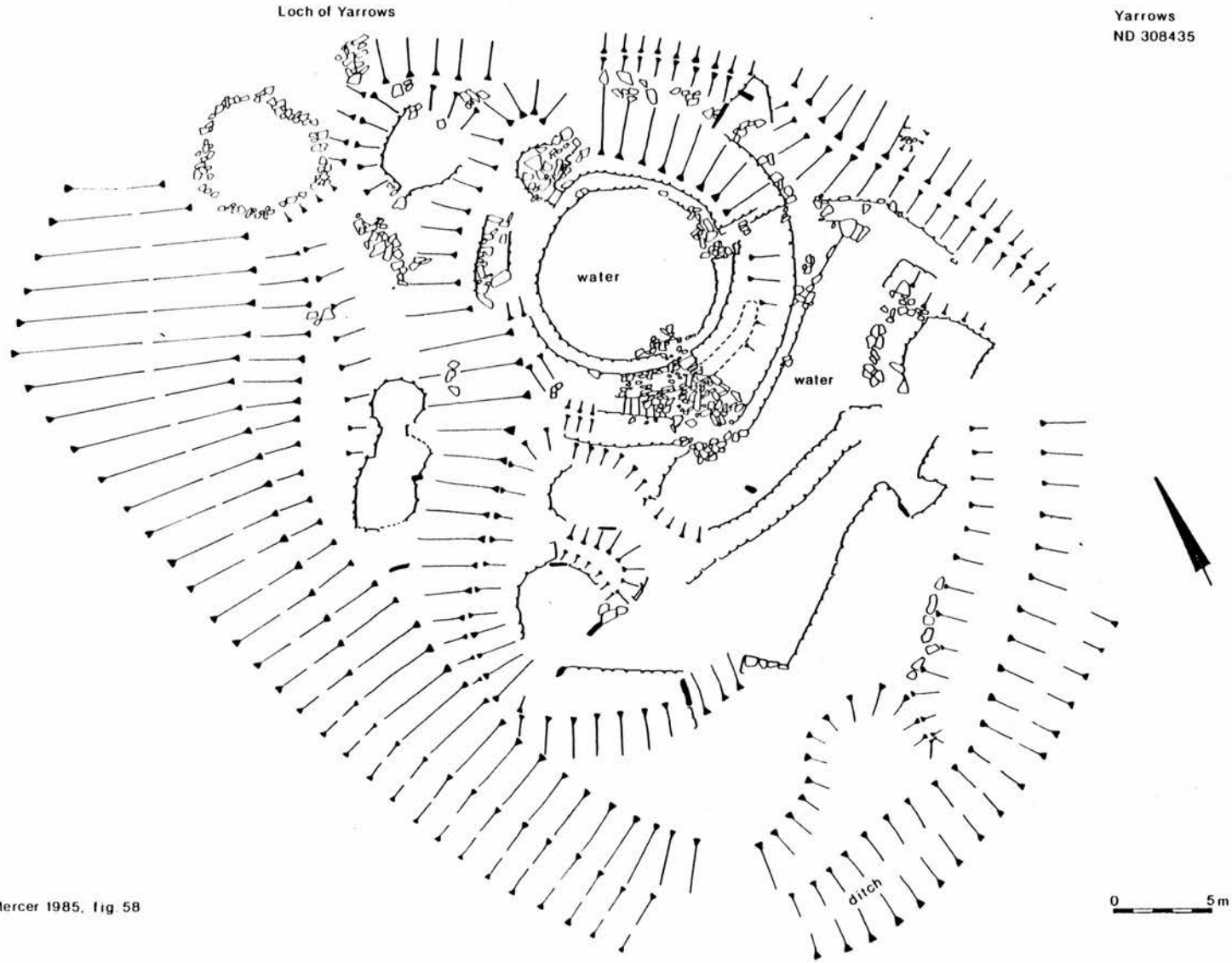
Bail a'Charn Broch, Acharole, Watten 1904 Figure 27



After John Nicolson (plan held in Nicolson Collection)

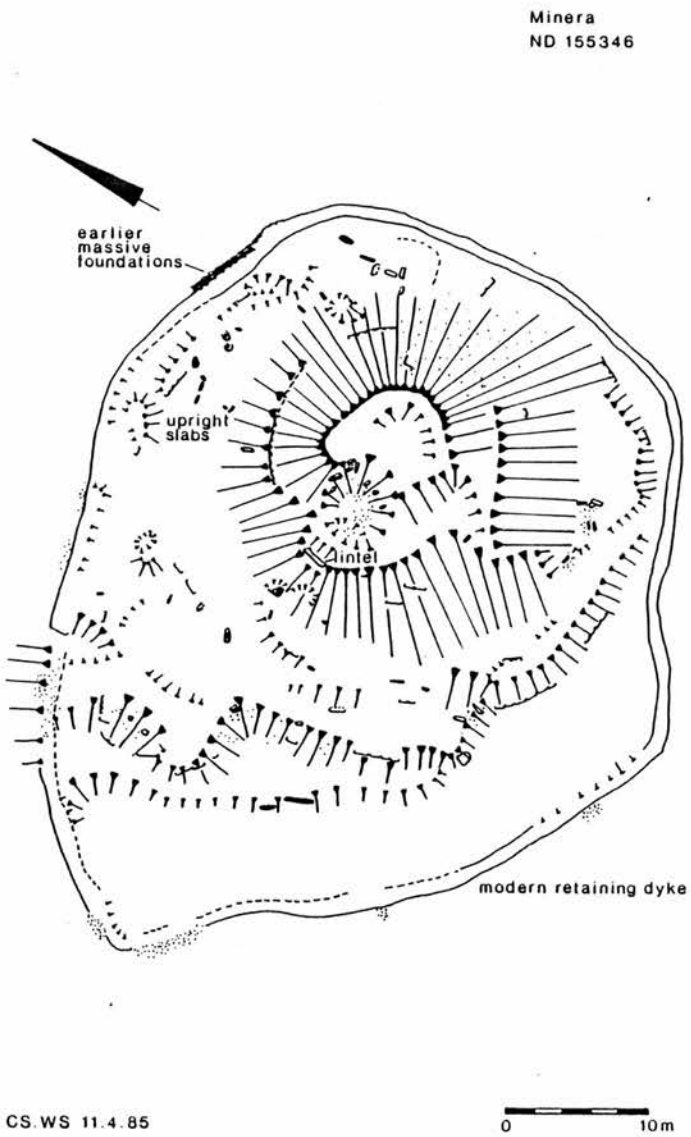
Figure 28


Carn na Mairg
ND 133510
ditch
spoil heap
dyke
modern causeway
excavation
excavation
river
causeway
drainage ditch
spoil heap
spoil heap
track
CS.WS 28.5.84
0
5m

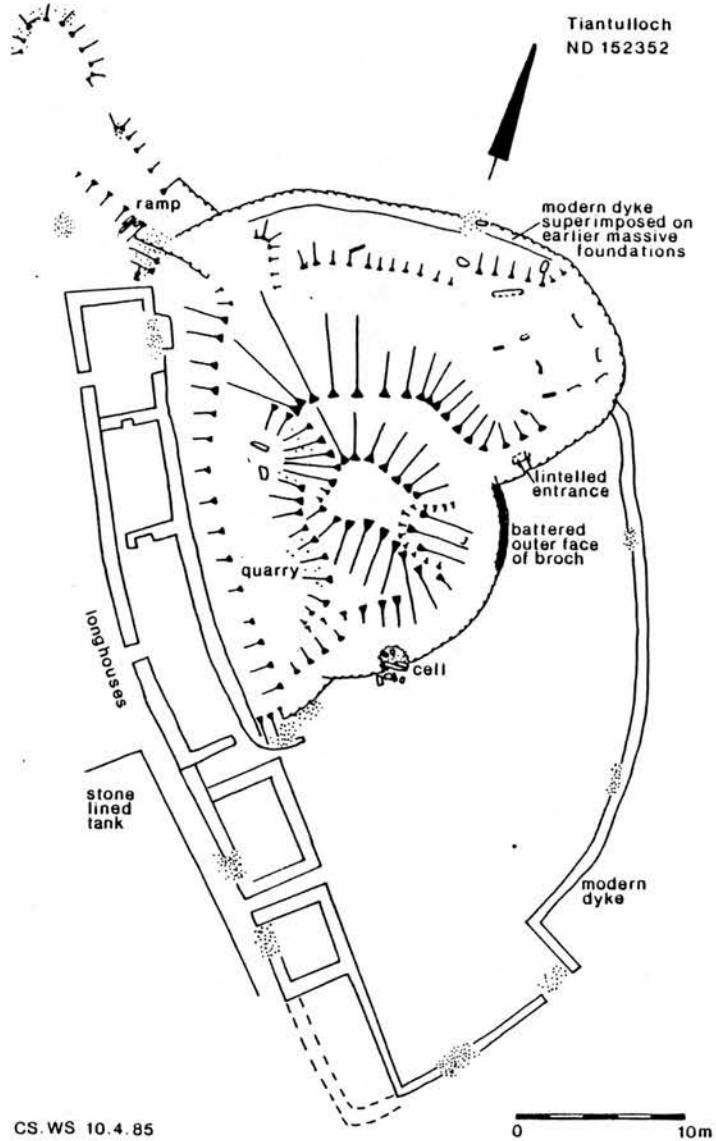


Source: Mercer 1985, fig 58

Figure 29

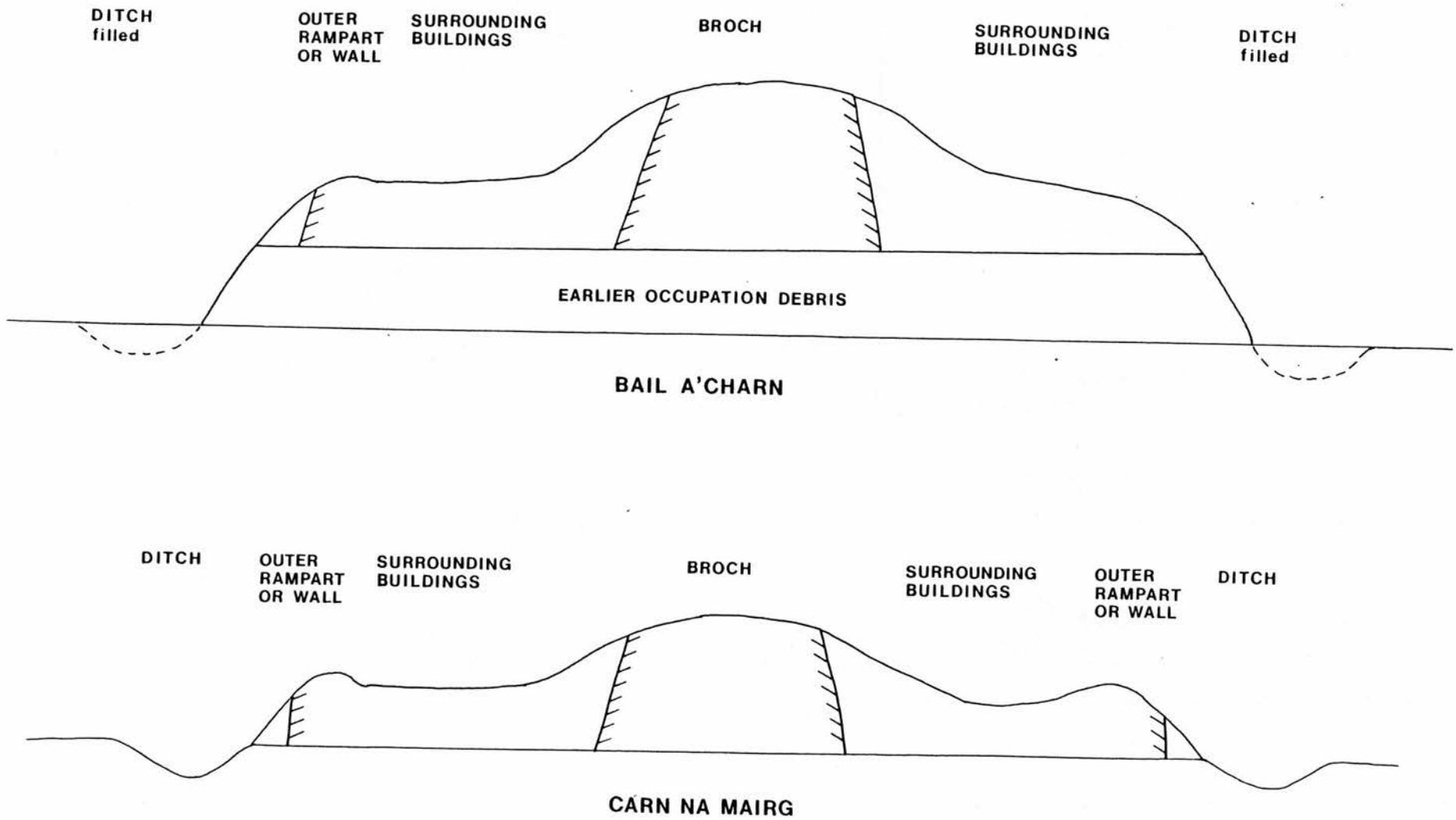

Minera
ND 155346
earlier massive foundations
upright slabs
lintel
modern retaining dyke
CS.WS 11.4.85
0
10m

(a)


Tiantulloch
ND 152352
ramp
modern dyke superimposed on earlier massive foundations
lintelled entrance
battered outer face of broch
quarry
cell
longhouses
stone lined tank
modern dyke
CS.WS 10.4.85
0
10m

(b)

Figure 30



SCHEMATIC SECTIONS THROUGH TWO BROCH MOUNDS

Figure 31

of the broch wall in a 2m deep cut into the lower part of the mound. Even at this depth the base of the broch wall was not reached, and it appears to continue down through the lower mound to lie at, or close to, the natural ground surface. The broch structure at Carn na Mairg is clearly not sitting on the lower mound, but in it, the apparent upper mound being formed by the broch wall rising above surrounding debris.

By contrast, the broch of Bail a'Charn near Watten may lend some support to Mercer's suggestion. The broch mound at Bail a'Charn is very large with a distinct mound-on-mound profile. The broch structure was excavated by Sir Francis Tress Barry in 1904, but the only record of the excavation is contained in the inventory of Caithness (RCAHMS 1911b, 127-9, no 466), and in an excavation plan made of the site (Figure 27). (The plan is only partly published in the inventory, but the full plan is preserved in the Nicolson Collection in Caithness.) The excavation was backfilled by order of the site proprietor shortly after it was carried out, and no structural details are now visible in the mound. The inventory of Caithness records that Tress Barry almost completely excavated the broch structure. He recovered the plan of the entrance passage presumably at, or close to, floor level, and exposed the wall in the interior, to a greatest height of 10 feet or about 3m. As the top of the mound at Bail a'Charn is at present at least 5m above the surrounding ground surface, it is possible to suggest that the base of the broch structure may be founded on a depth of earlier material. It also does not seem credible that Tress Barry could have excavated down to the base of this enormous mound with any degree of safety.

Figure 31 gives suggested sections through the two broch mounds of Carn na Mairg and Bail a'Charn, and seeks to demonstrate that the mound-on-mound appearance of broch mounds in Caithness need not result from a broch structure sitting on top of a mound of preceding archaeological material. The existence of preceding material in some broch mounds, such as Bail a'Charn, cannot be excluded however, and may be reflected in subtle differences in mound size, shape and section. Further field survey, including the levelling of sites to obtain measured sections, may be particularly instructive, and may

reveal whether the subtle differences, tentatively suggested in Figure 31, do in fact exist. From the point of view of understanding continuity and change in settlement pattern, it would obviously be useful to be able to distinguish between broch mounds where the broch structure is likely to be founded on a substantial layer of earlier material, and those where it is not.

There is no clear evidence in the excavation record for occupation preceding the broch structure at any Caithness broch site. At the broch of Killimster (EC 17; Figure 34), evidence to the contrary seems to have been produced. Various sections were drawn during the excavation which was carried out hurriedly in 1940, showing the masonry of the broch wall sitting directly on a layer identified as natural clay (Calder 1947-8, 127). As the site was bulldozed during the construction of a spitfire aerodrome, there is unfortunately no way of checking whether Calder correctly identified the layer under the broch as a natural feature.

At Crosskirk Fairhurst concluded that there had been occupation prior to the broch, but that this consisted of only vague traces of a preceding promontory fort, and continuous use of the location prior to the building of the broch did not seem to be indicated (Fairhurst 1984, 166). Barrett however has warned against an uncritical acceptance of the structural sequence reported for Crosskirk, pointing out that very little of it is based upon demonstrable stratigraphic observation:

"A case in point is the claimed primacy of the enclosure wall and terrace. This claim is based upon pottery found stratified in the floor make-up of an intramural cell in the wall. This pottery is classed as 'pre-broch pottery' because it 'differs markedly from the usual wares of the broch and settlement'. However, it is unclear what proportion of the site's pottery is reported upon in detail, and similar material does occur in the broch and settlement. We are assured that such sherds 'seem badly out of context'. Why? So called 'Broch Period' material was found on the surface of this floor, and charcoal from this same surface gave a date of 170±50 (SRR 268). In the excavations of the broch interior an organically rich deposit was found on the natural surface and covered by a stone slab. This deposit yielded a date of 430±45 (SRR 266), which is assigned to the 'period one ' enclosure. Why?" (Barrett 1984, 135).

By these observations Barrett has called into question the existence of any preceding occupation at all at Crosskirk. Whether Fairhurst's or Barrett's view is accepted, there would appear in either event to be no evidence of a substantial preceding stratigraphy at Crosskirk,

such as was found at Howe in Orkney. Until further field survey and/or selective excavation has taken place, the question of a preceding stratigraphy existing within any Caithness broch mound must remain unresolved.

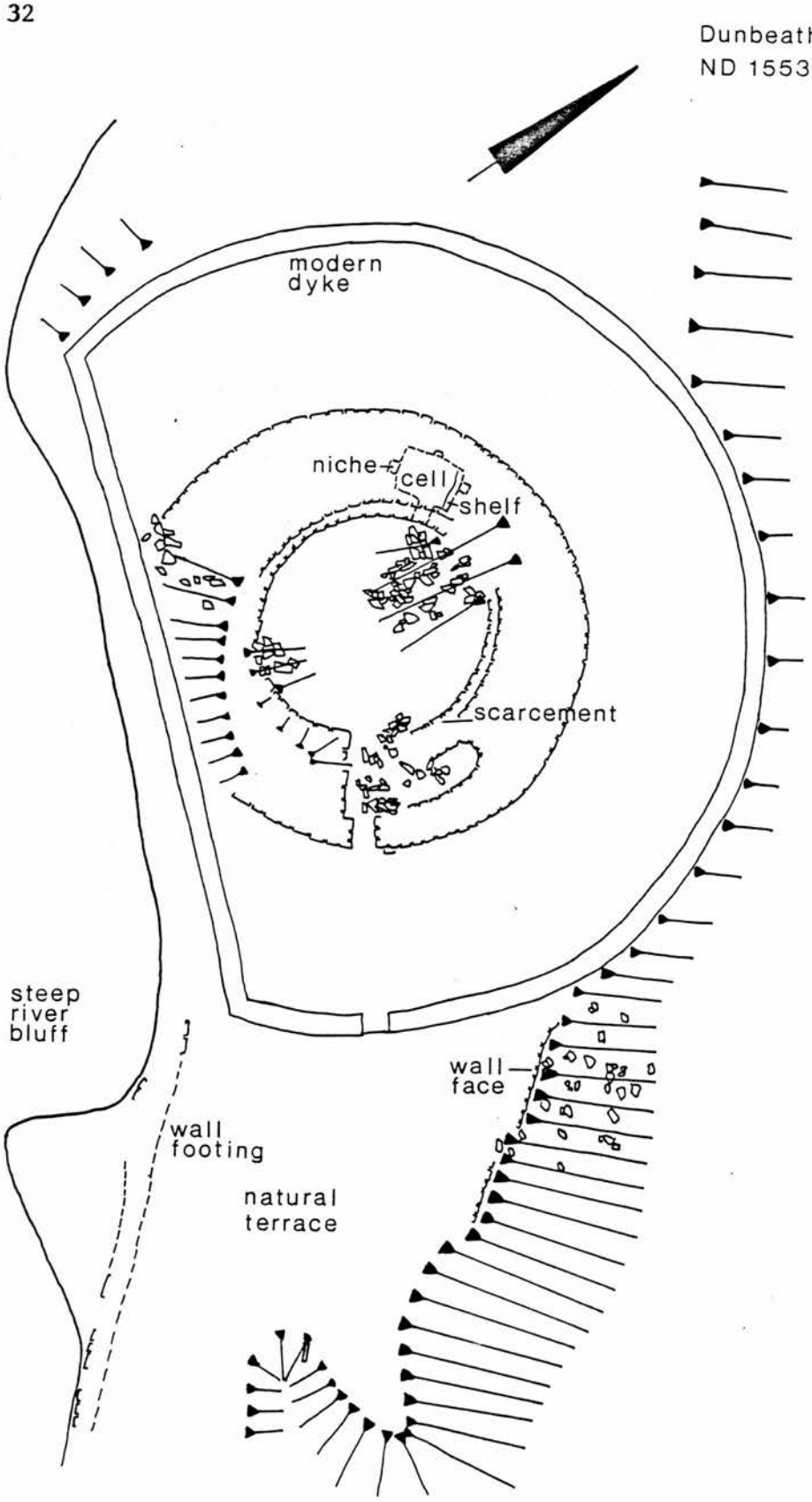
Surrounding Buildings

The lower mound of the mound-on-mound at many Caithness broch sites can be demonstrated to contain a number of buildings clustered around the broch. The existence of buildings around brochs in Caithness has been acknowledged since the antiquarian period, and they are clearly visible at some excavated sites, such as Nybster (EC 8; Figure 36a), Road (EC 10), and Whitegate (EC 11) in the East Coast Study Area. At Carn na Mairg (TR 28; Figure 28) it is obvious that the 2m trench which revealed the outer face of the broch wall, cut through an archaeological stratigraphy around the broch, and not through loose rubble. The presence of surrounding buildings at Carn na Mairg is also revealed by numerous upright flagstones protruding through the turf around the broch structure. At the excavated broch sites of Nybster and Road, earthfast upright flagstones are a particularly characteristic feature of the buildings around the broch, and their occurrence in the turf of the lower mound at unexcavated sites may be taken to be a certain indicator of the presence of surrounding buildings.

The presence of surrounding buildings may be directly observed at 41 certain brochs in Caithness, including excavated sites. In addition their presence may be inferred at a further 36 certain brochs, and 9 potential brochs from the existence at these sites of a mound-on-mound or stepped profile (see Table 13, pp125-6). Given these numbers, it seems reasonable to conclude that surrounding buildings are a normal feature of Caithness brochs. The very large size of most of the remaining 111 certain or potential broch mounds indicates that they too may contain surrounding buildings, and it is likely that further detailed field survey would increase the number of mounds known definitely to contain buildings around the broch structure.

There is one excavated broch in the District which seems to be an exception to this general rule, in that it appears as an isolated

Figure 32


Dunbeath
ND 155304
modern
dyke
niche
cell
shelf
scarcement
steep
river
bluff
wall
face
wall
footing
natural
terrace
CS.WS 7.4.85
0
5m

structure without any surrounding buildings. It is the broch of Dunbeath (DW 8) in the Dunbeath Water/Burn of Houstry Study Area. A survey of the broch (Figure 32) demonstrates however that its present isolated appearance is probably artificial, a product of antiquarian zeal. The broch appears to have been partly rebuilt, and has been fully cleared of debris both inside and out, but there is some slight evidence to the south-east of the broch that it may originally have had surrounding buildings, which have also been cleared away. If this was not the case, Dunbeath broch has to be regarded as a unique exception to the general rule of Caithness broch morphology, as demonstrated by other excavated broch sites in the District, and as supported by detailed field survey.

In view of recent excavation results in Orkney, surrounding buildings at broch sites in Caithness need to be reassessed from the point of view of establishing as far as possible the true nature of their chronological and functional relationships with the broch structure. This aspect is considered in detail in Chapter 7.

6.3 Outworks

There is evidence in the excavation and field survey record for Caithness of the existence of outworks, consisting of either an outer enclosing wall or rampart and/or a ditch at a number of broch sites. Altogether 30 brochs have been identified as having an outer wall enclosing both broch structure and surrounding buildings, and 34 broch mounds have encircling ditches (see Table 14, p127). A number of sites display the two features in combination.

Outer Wall

The existence of a massive outer wall or rampart is detectable at a number of turf covered broch mounds in the District, for example, Achies 2 (TR 13), Cnoc Donn (TR 20) and Carn na Mairg (TR 28) (Figures 33 and 28) in the Thurso River Study Area, and Tiantulloch (DW 1) and Minera (DW 2) in the Dunbeath Water/Burn of Houstry Study Area (Figure 30). At the sites in the Thurso River Study Area the wall appears as a substantial bank on the rim of the lower mound of the mound-on-mound. Its presence is confirmed at Carn na Mairg by lengths of revetment

visible in the outer slope of the lower mound. At the brochs of Tiantulloch and Minera modern dykes at each site are superimposed on a massive foundation which would appear to belong to an outer wall around the broch complex.

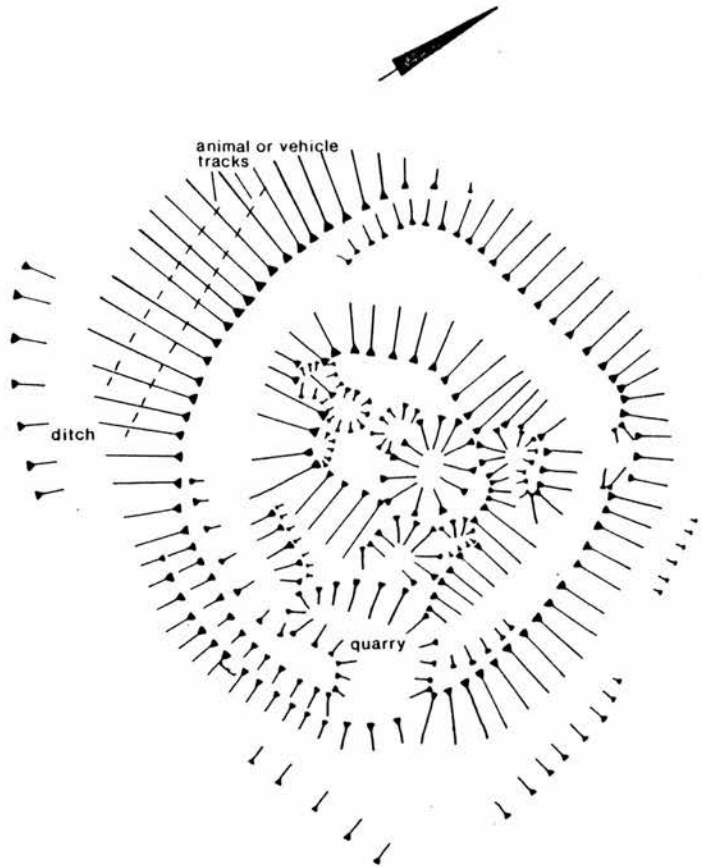
The existence of an outer wall has been noted in excavation at a number of sites, but has been investigated in detail only at the brochs of Killimster (EC 17) and Crosskirk. At Killimster the outer wall was particularly massive and appeared to encircle the broch eccentrically (Figure 34). Despite its massiveness only part of the wall survived, and the excavator suggested that cultivation had been responsible for its demolition on the west side of the broch (Calder 1947-8, 126). The wall was sectioned and found to consist of a clay core confined between well-built revetting walls of masonry (1947-8, 136). There was evidence of a number of buildings enclosed between the broch structure and the outer wall, but there was insufficient time for a full investigation of these. At Crosskirk a substantial outer rampart wall was discovered. As at Killimster it was found to consist of a core consisting mainly of clay, revetted with stone, only one slab in thickness (Fairhurst 1984, 31).

Ditch

The existence of a ditch encircling the broch mound has been little noted in the available information on Caithness brochs. There are a few broch sites where there is a very obvious ditch around the mound, such as Cnoc Donn (TR 20; Figure 33b) and Carn na Mairg (TR 28; Figure 28) in the Thurso River Study Area, and the Hill o'Works (EC 13; Figure 35a) in the East Coast Study Area. At the Hill o'Works the ditch is 2-3m deep, waterlogged, and has a massive rampart on its outer lip. It exists now only around two-thirds of the mound, but it seems most likely that it was once continuous, and that it has been ploughed away on the west.

It may be that ditches were once a common feature of broch mounds in Caithness, but have been peculiarly vulnerable to infilling and destruction by the intensive cultivation and drainage which has taken place in the last two centuries, as the following examples demonstrate. It was noted above that the substantial outer rampart at

Achies 2
ND 140556

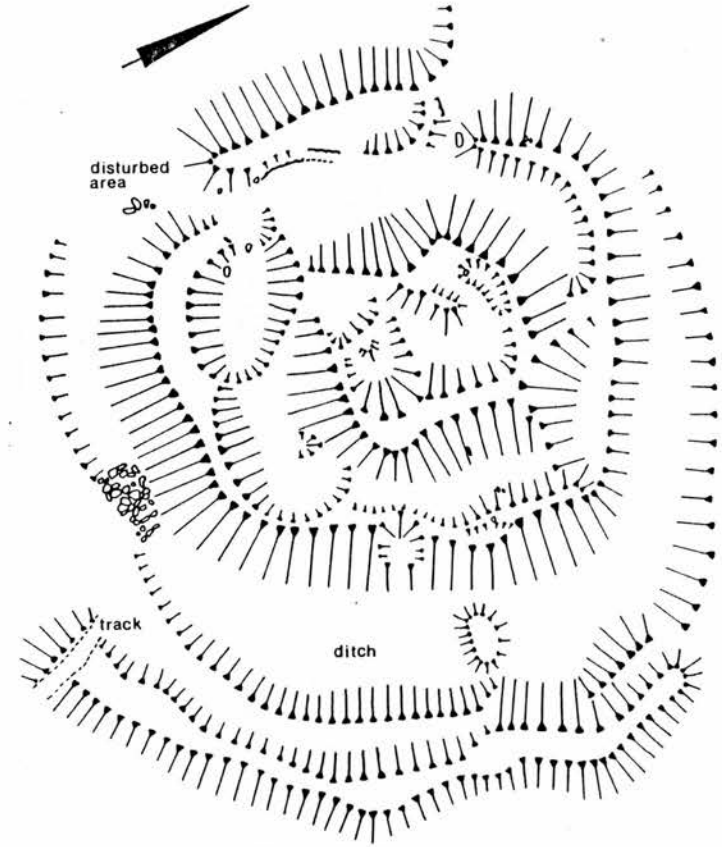


CS.WS 1.6.84

0 10m

(a)

Cnoc Donn
ND 140533

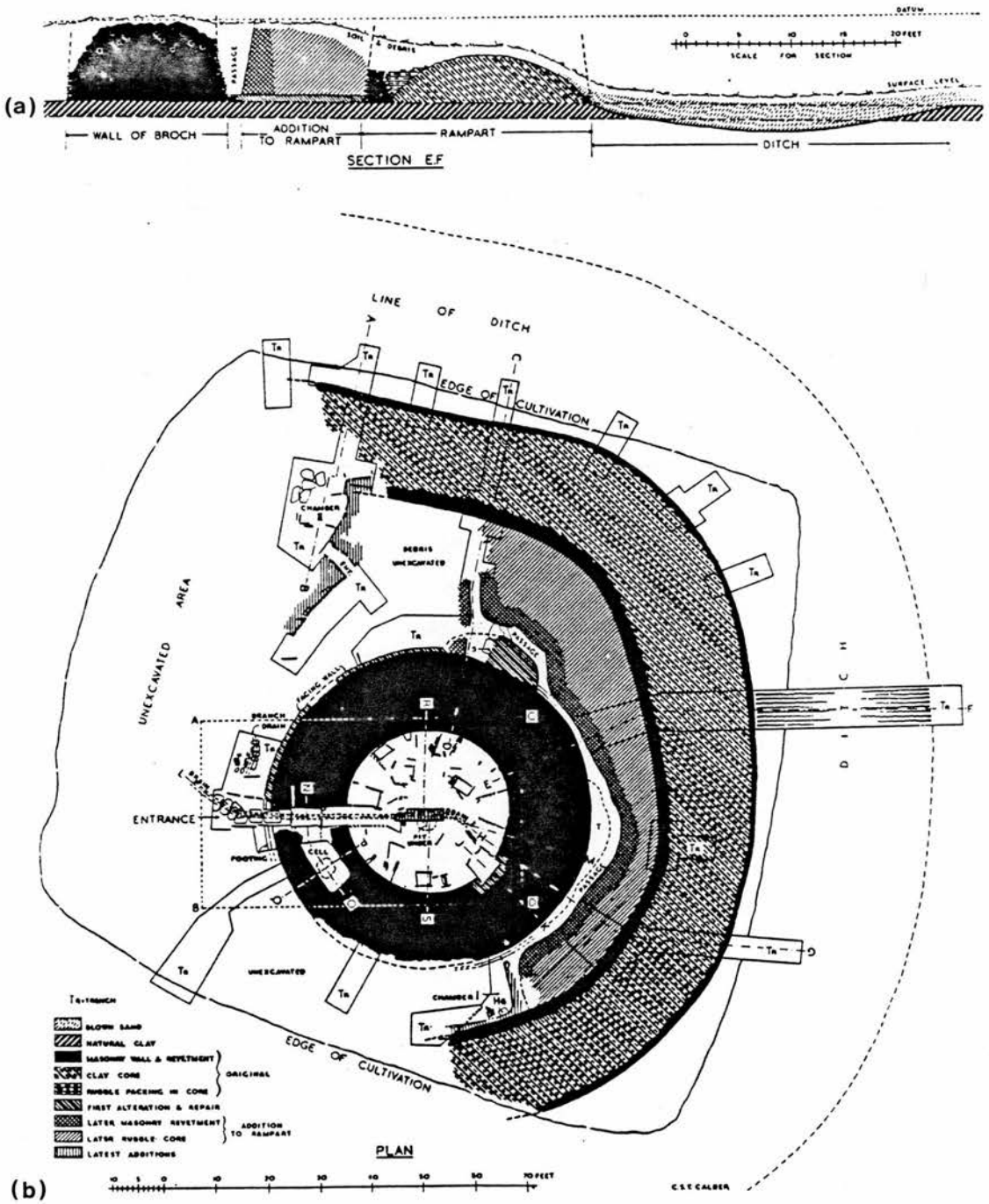


CS.WS 30.5.84

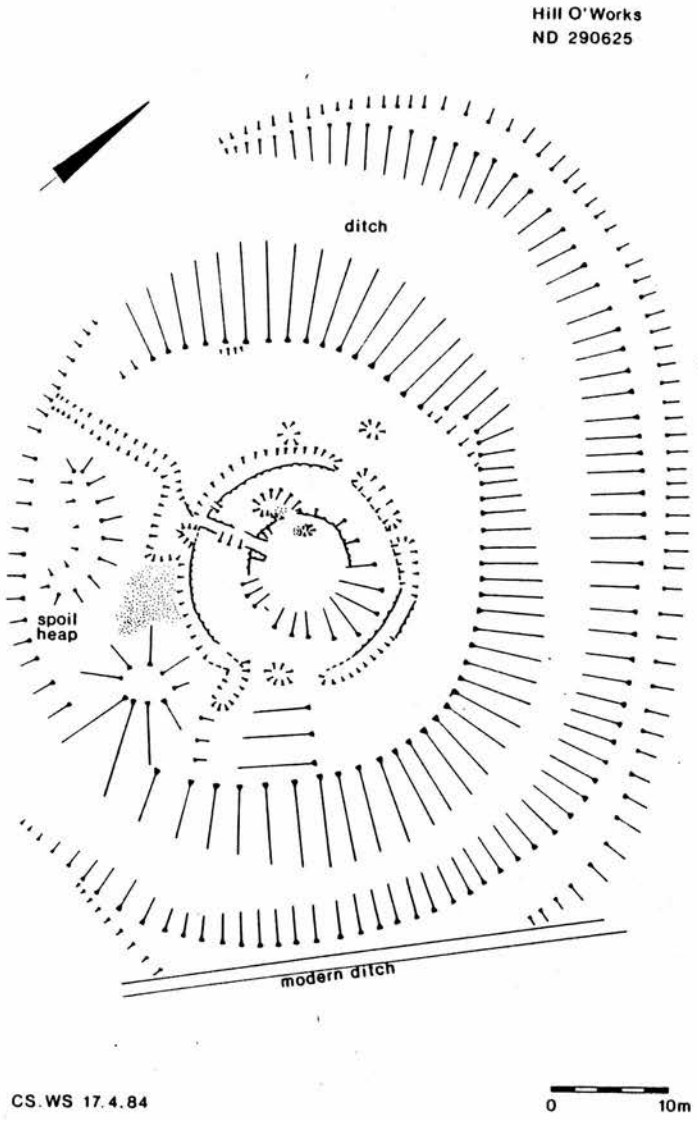
0 10m

(b)

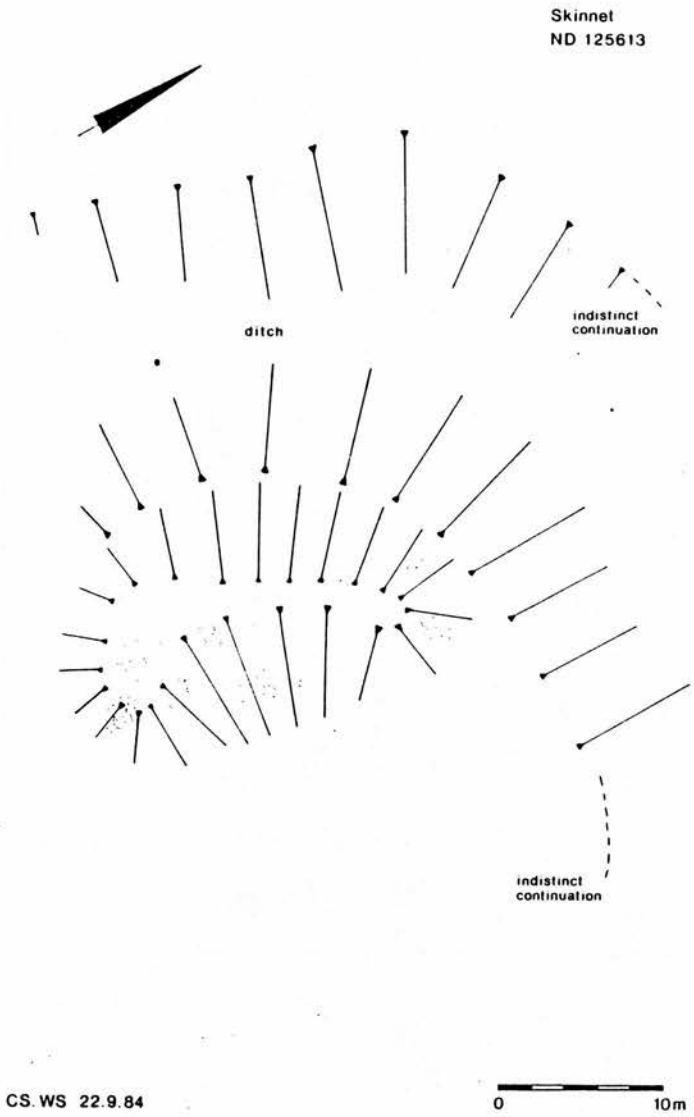
Figure 33



Source: Calder 1947-8, 125

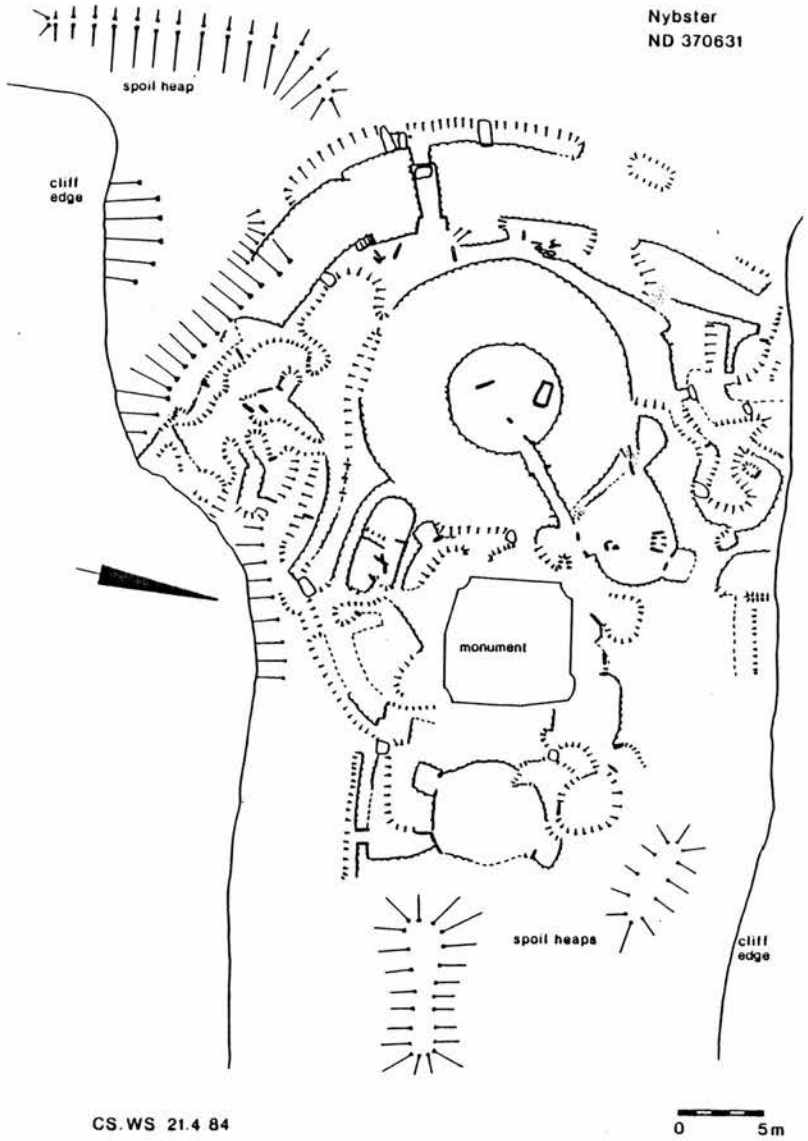

Hill O'Works
ND 290625
ditch
spoil heap
modern ditch
CS.WS 17.4.84
0
10m

(a)


Skinnel
ND 125613
ditch
indistinct continuation
indistinct continuation
CS.WS 22.9.84
0
10m

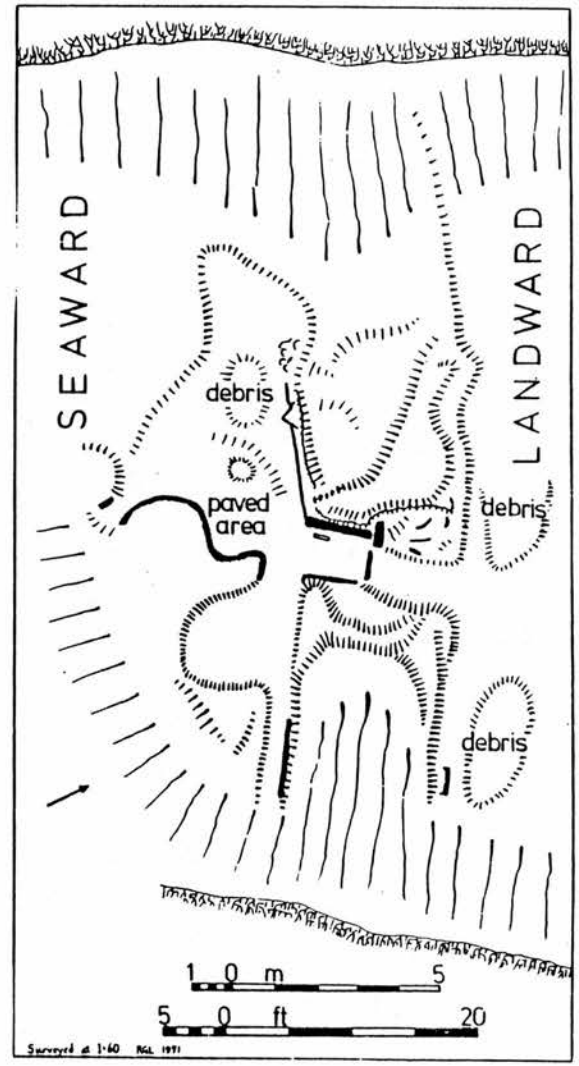
(b)

Figure 35



(a)

Sgarbach
Source: Lamb 1980, fig 8



(b)

Figure 36

the broch of Killimster (EC 17) seemed to have been partly destroyed, probably by cultivation. During the excavation at Killimster a ditch was also found at the site, which the excavator noted was barely traceable on the surface; was almost completely covered in blown sand; and was almost obliterated by ploughing operations (Calder 1947-8, 136). At the broch of Bail a'Charn the plan of the site made at the time of its excavation recorded a fosse around the broch mound (Figure 27), of which there is now no trace at the site. At the broch of Skinnet (TR 5; Figure 35b) in the Thurso River Study Area the broch mound has been almost completely removed by robbing, and there has been no record of the existence of a ditch at the site this century. However in the good light conditions prevailing at the time of the site survey in 1984, a ditch could be seen, lying to the west of the remnant mound, and continuing around to the east, partially defining a large area and indicating the likely former extent of the broch mound. The existence of the ditch had in fact been recorded in 1874, when it was reported that the broch had been destroyed about 50 years earlier, and that a dry ditch was visible at the time (Anderson 1890 (first published 1874), 185). It may be that aerial photography in the right weather and light conditions would reveal whether ditches were once more common around Caithness broch mounds, than now appears to be the case.

Function and Chronology

The evidence from broch sites in Caithness seems to point to outworks being designed primarily with defence in mind. There seems little doubt that the massive outer rampart at Killimster (EC 17; Figure 34) was intended to be defensive. The excavator of the site also thought that the ditch had acted as a defence, but noted that its shallowness at only 3 feet 8 inches (1.1m) made it appear as if its principal purpose was that of a borrow pit (Calder 1947-8, 136). In this context it should be noted that the outer rampart at Killimster was clay cored. Ditches may well have functioned as borrow pits, or as drainage aids in a chronically wet area, but the ditches at Cnoc Donn (TR 20; Figure 33b), Carn na Mairg (TR 28; Figure 28), the Hill o'Works (EC 13; Figure 35a) and Yarrows (Figure 29) seem too deep and wide, even after hundreds of years of silting, to have served only such purposes.

The ditch at Carn na Mairg may originally have been connected to the Thurso River, so that it acted as a moat, whilst the ditches at Cnoc Donn and the Hill o'Works have massive ramparts on their counterscarps.

With regard to the chronological relationship between outworks and broch structure, there is very little hard evidence from which to draw conclusions. Fairhurst thought that the outer wall at Crosskirk had existed long before the construction of the broch, originally enclosing a promontory fort (1984, 166), before continuing in use as an outer enclosing wall during the broch period. The excavation report provided no detailed sections across the site to demonstrate the validity of this conclusion, and Barrett has warned against uncritical acceptance of this sequence (1984, 135). By contrast detailed sections were provided in the excavation report of the broch of Killimster (EC 17; Figure 34) (Calder 1948, 127). These show the outer wall and the broch structure to be sitting on the same layer, identified as natural clay. If the sections are accepted as accurate, it must be concluded that the broch, outer wall and ditch at Killimster were contemporary foundations.

At Nybster (EC 8; Figure 36a) it has been suggested that the outer wall may predate the broch, originally enclosing a promontory fort (Lamb 1980, 20), although there is no excavation evidence for the order of construction at the site. Lamb pointed to the existence of an apparent promontory fort at Sgarbach (EC 7; Figure 36b), close to Nybster in the East Coast Study Area, as potential supporting evidence for this theory (1980, 26). The wall crossing the promontory at Sgarbach, when excavated by Sir Francis Tress Barry, was found to have an entrance displaying some broch-like features, such as, a slab door check, a door sill, and an oval cell (RCAHMS 1911b, 18, no 45), but there appeared to be no structures on the promontory, and certainly no broch. The field survey evidence for Nybster may in fact support the possibility of the outer wall and the broch being non-contemporaneous. The broch seems to lie too close to the outer wall, with its entrance 150 degrees around from the outer entrance. The two entrances might have been expected to be in better alignment, if the two structures were contemporary. The complex of remains revealed at Nybster has an

overall incoherent appearance, partly as a result of its poor and partial excavation by Tress Barry. The chronological relationships between the various structural elements at the site are not obvious, and may be even more complex than Lamb has suggested. For example, it is clear that the outer wall is a composite feature, which has been extended and reconstructed, perhaps more than once.

Whatever the chronological complexities may have been on individual sites, one fact is clear from the excavations of both Crosskirk and Killimster (EC 17; Figure 34), that the broch structure, when in use, had an outer enclosing wall in use at the same time. At Killimster the ditch also seems to have been a contemporary feature. The little available evidence points to the conclusion that outworks formed an integral part of a functioning broch complex in Caithness.

This chapter has sought to demonstrate that a broch in Caithness is a complex of structural elements, and not the single isolated structure portrayed in the received wisdom. Although most of the brochs in the District appear as turf covered mounds, they are by no means featureless, and much can be learned from a detailed analysis of the mounds in relation to the structural evidence revealed at excavated sites. In general the broch mounds appear to contain a very consistent set of components. These are from the outside: a ditch, an outer enclosing wall, surrounding buildings, and the broch structure. It is suggested that outworks were designed to be defensive, and were in contemporary use with the broch. It may be suggested in conclusion to this chapter, that a broch in Caithness is already beginning to appear as a much larger and more complex functioning unit than the traditional understanding of a broch has allowed. This theme is continued in Chapter 7 which considers the surrounding buildings in detail.

Table 12 Caithness: Some Broch Mound Dimensions

Site		Size	Comments
East Coast Study Area			
EC 1	Duncansby	35-40m dia.	
EC 2	Brabstermire	21 x 35m	
EC 4	Everley	29 x 53m	
EC 10	Road	47 x 63m	
EC 12	Harbour Mound	30 x 37m	
EC 13	Hill o'Works	38m dia.	Defined by ditch
EC 17	Killimster	45m dia.	Prior to excavation
EC 18	Norwall	32 x 34m	
EC 21	Kettleburn	37m dia.	Prior to excavation
EC 23	Hillhead	16 x 20m	Probably larger
Thurso River Study Area			
TR 1	Geise	26 x 32m	
TR 2	Tulloch of Shalmstry	28m dia.	Partly removed
TR 4	North Calder	42 x 52m	
TR 5	Skinnet	16 x 25m	Formerly larger
TR 6	Upper Sour	32 x 38m	
TR 7	Gerston	41 x 48m	
TR 8	Hoy	23m dia.	Partly removed
TR 13	Achies 2	48 x 53m	
TR 14	Achies 1	28 x 32m	Damaged
TR 19	Dale Farm	37 x 42m	Original size
TR 20	Cnoc Donn	48m dia.	Defined by ditch
TR 22	Mybster	40 x 44m	
TR 26	Tulach Lochan Bhraseil	38 x 41m	
TR 27	Tulach Buaile a'Chnoic	32 x 33m	
TR 28	Carn na Mairg	31 x 34m	Defined by ditch
TR 29	Tulach Beag	35m dia.	
TR 30	Tulach Mor	22 x 25m	Defined by ditch
Dunbeath Water/Burn of Houstry Study Area			
DW 1	Tiantulloch	26m dia.	Partly removed
DW 2	Minera	45 x 55m	
DW 3	Achnagoul	33 x 34m	
DW 4	Ballentink	42 x 51m	
DW 5	Rhemullen	43 x 45m	
DW 6	Balantrath	26 x 33m	
DW 7	Achorn	33 x 36m	

Table 13 Caithness: Brochs With Surrounding Buildings

Site	Evidence
Achavar	Stepped profile
Achbuiligan Tulloch	Slightly stepped profile
Achies 1	Slightly stepped profile
Achies 2	Stepped profile
Achingale	Slightly stepped profile
Achnagoul	Stepped profile
Achorn	Stepped profile
Achow	Stepped profile, upright slabs
Achunabust	Upright slabs
Achvarasdal Lodge	Visible indications of surrounding buildings
An Dun, Berriedale	Stepped profile
Appnag Tulloch	Stepped profile
Bail a'Charn	Stepped profile
Balantrath	Stepped profile, upright slabs
Ballachly	Stepped profile, upright slabs
Borrowston	Stepped profile
Bridge of Dunn	Stepped profile
Brounaban	Upright slabs
Bruan	Stepped profile
Burg Ruadh	Upright slabs
Burnside, Durran	Stepped profile
Cairn of Sibmister	Stepped profile
Camster 1	Stepped profile
Camster 2	Stepped profile, upright slabs
Carn a'Chladda	Stepped profile
Carn na Mairg	Stepped profile, upright slabs
Cnoc Donn	Stepped profile
Cogle	Slight excavation evidence
Crosskirk	Excavation evidence
Dale Farm	Slightly stepped profile
Everley	Visible indications of surrounding buildings
Framside	Stepped profile
Freswick Links	Excavation evidence
Gearsay Cairn	Stepped profile
Golsary	Upright slabs
Green Hill, Roster	Stepped profile, upright slabs
Green Tullochs	Stepped profile
Halcro Manse	Stepped profile
Hillhead	Excavation evidence
Hill o'Works	Visible indications of surrounding buildings
Housle Cairn, Gerston	Stepped profile
Hoy	Stepped profile
Keiss (Harbour Mound)	Excavation evidence
Kettleburn	Excavation evidence
Killimster	Excavation evidence
Knockglass 2	Stepped profile
Knockinnon	Stepped profile
Knock Urray	Stepped profile
Langwell Tulloch	Stepped profile
Latheronwheel	Stepped profile
Lower Dunn 1	Stepped profile

Table 13 (continued)

Site	Evidence
Minera	Stepped profile, upright slabs
Murkle	Stepped profile
Mybster	Stepped profile, upright slabs
Ness	Excavation evidence
Newlands of Clyth	Stepped profile
Norwall	Excavation evidence
Nybster	Excavation evidence
Ousedale Burn	Excavation evidence
Rhemullen	Stepped profile
Road, Keiss	Excavation evidence
Scorriclet	Slightly stepped profile
Scottag	Slightly stepped profile
Skinnet	Stepped profile
Skirza Head	Stepped profile
Smerral 1	Upright slabs
Smerral 2	Upright slabs
Thing's Va	Stepped profile
Tiantulloch	Stepped profile, upright slabs
Tota an Dranndain	Stepped profile
Tulach Buaile a'Chnoic	Stepped profile
Tulach Gorm 1	Slightly stepped profile
Tulach Lochan Bhraseil	Stepped profile
Tulloch of Lybster	Upright slabs
Tulloch of Shalmstry	Upright slabs
Tulloch of Stemster	Stepped profile, upright slabs
Upper Borgue	Stepped profile
Upper Latheron	Upright slabs
Upper Sour	Stepped profile
Usshilly Tulloch	Upright slabs
Wag of Forse	Excavation evidence
Warehouse	Stepped profile, upright slabs
Watenan 1	Stepped profile
Wester	Excavation evidence
Whitegate	Excavation evidence
Yarrows	Excavation evidence

Sources: RCAHMS 1911b
Mercer 1985
NMRS
Site catalogue

Table 14 Caithness: Broch Mounds with Outworks

Site	Wall	Ditch
Achies 2	x	x
Achnagoul	x	
Achorn	x	
An Dun, Berriedale		x
Bail a'Charn		x
Ballachly		x
Bruan	x	x
Burnside, Durran		x
Cairn of Humster		x
Cairn of Sibmister	x	
Camster 1	x	x
Camster 2		x
Camster Farm		x
Carn na Mairg	x	x
Cnoc Donn	x	x
Crosskirk	x	x
Everley		x
Golsary		x
Green Tullochs	x	x
Hill o'Works	x	x
Kettleburn	x	x
Killimster	x	x
Knockinnon	x	
Knock Urray		x
Latheronwheel	x	
Minera	x	
Murkle		x
Ness	x	x
Norwall		x
Nybster	x	
Ousedale Burn	x	
Rhemullen	x	
Road	x	
Scarfskerry		x
Scrabster	x	x
Skinnet		x
Skirza Head		x
Thing's Va	x	x
Tulach Buaile a'Chnoic	x	
Tulach Mor		x
Tulloch of Lybster	x	x
Tulloch of Stemster	x	
Upper Borgue	x	
Warehouse	x	x
Wag of Forse		x
Watenan 2		x
Watten	x	
Wester	x	
Yarrows		x

Sources: RCAHMS 1911b; Mackay 1891-2
NMRS; Site Catalogue

CHAPTER 7 SITE MORPHOLOGY 2: THE SURROUNDING BUILDINGS

It was noted in Chapter 6 that many Caithness broch sites, both excavated and unexcavated, exhibit evidence of a number of buildings clustered around the broch structure (see Table 13, pp125-6). Traditionally these surrounding buildings have been identified as secondary, built after the main period of broch use, when the function of the site had changed from primarily defensive to domestic:

"Many ... have outbuildings around them, domestic settlements which seem to have grown up around the towers after they ceased primarily to be fortresses. The occasional stratigraphic evidence, as at Jarlshof and Midhowe, has shown that these buildings were put on top of, or instead of, the original outer defences of the tower. Most may fairly be assumed to have been built with stone quarried from the towers themselves. Such clear signs at many broch sites of a change in primary use to undefended or poorly defended open settlement implies that originally they had a quite different function and were non-domestic refuges" (Mackie in Fowler 1975, 79).

The excavation at Howe in Orkney provided the first detailed evidence that surrounding buildings at broch sites in the north could after all be contemporary with the broch structure. The sequence at Howe was very complex, and three superimposed massive Iron Age structures were identified at the site, which the excavators termed a roundhouse (Phase 5), a later roundhouse or early broch (Phase 6), and a broch tower (Phase 7) (Carter et al 1984, 64-6). Each of these three structures seems to have had contemporary buildings around it, although the evidence for the two earlier periods is rather fragmentary because of subsequent levelling of the surrounding area (Beverley Smith, pers. comm.). There is no doubt that the Phase 7 structure, called the broch tower, had what the excavators described as a village of six contemporary houses around it (Figure 37).

Although Howe is only one broch site, it now seems fair to suggest that the traditional assumption that surrounding buildings were secondary, may be generally wrong, arising from inadequate excavation techniques in the past, and the antiquarian desire to depict the broch as a splendid isolated structure. In the light of the excavation results from Howe, it is appropriate to re-examine the evidence for surrounding buildings at broch sites in Caithness, in terms of their likely functional and chronological relationships with the broch structure.

It has to be said at the beginning that the pool of evidence in this respect is not good. Most of the Caithness excavations were early, and the surrounding buildings were sometimes not excavated at all, as at Brounaban (RCAHMS 1911b, 152, no 511) and Achvarasdal Lodge (RCAHMS 1911b, 95, no 353). At other sites the surrounding buildings were only partially revealed, as at Road (EC 10; Figure 41). The excavation of the broch of Killimster (EC 17; Figure 34) was carried out over too short a period to allow much investigation of the surrounding buildings to take place. The excavation of the broch of Crosskirk, which should have provided some definitive evidence for surrounding buildings at broch sites in Caithness, was a disappointment. The extent of the external settlement did not become apparent until the last season of excavation, and as a result, investigation of the surrounding buildings was very partial and limited (Figures 39 and 40). In addition the complexity of the surrounding buildings proved to be rather overwhelming for the excavator:

"precise data on the nature of these (external) settlements on the northern mainland was so scanty that much of the work at Crosskirk was exploratory in character: the complexity revealed was such that major issues became obscured by a welter of detail." (Fairhurst 1984, 70).

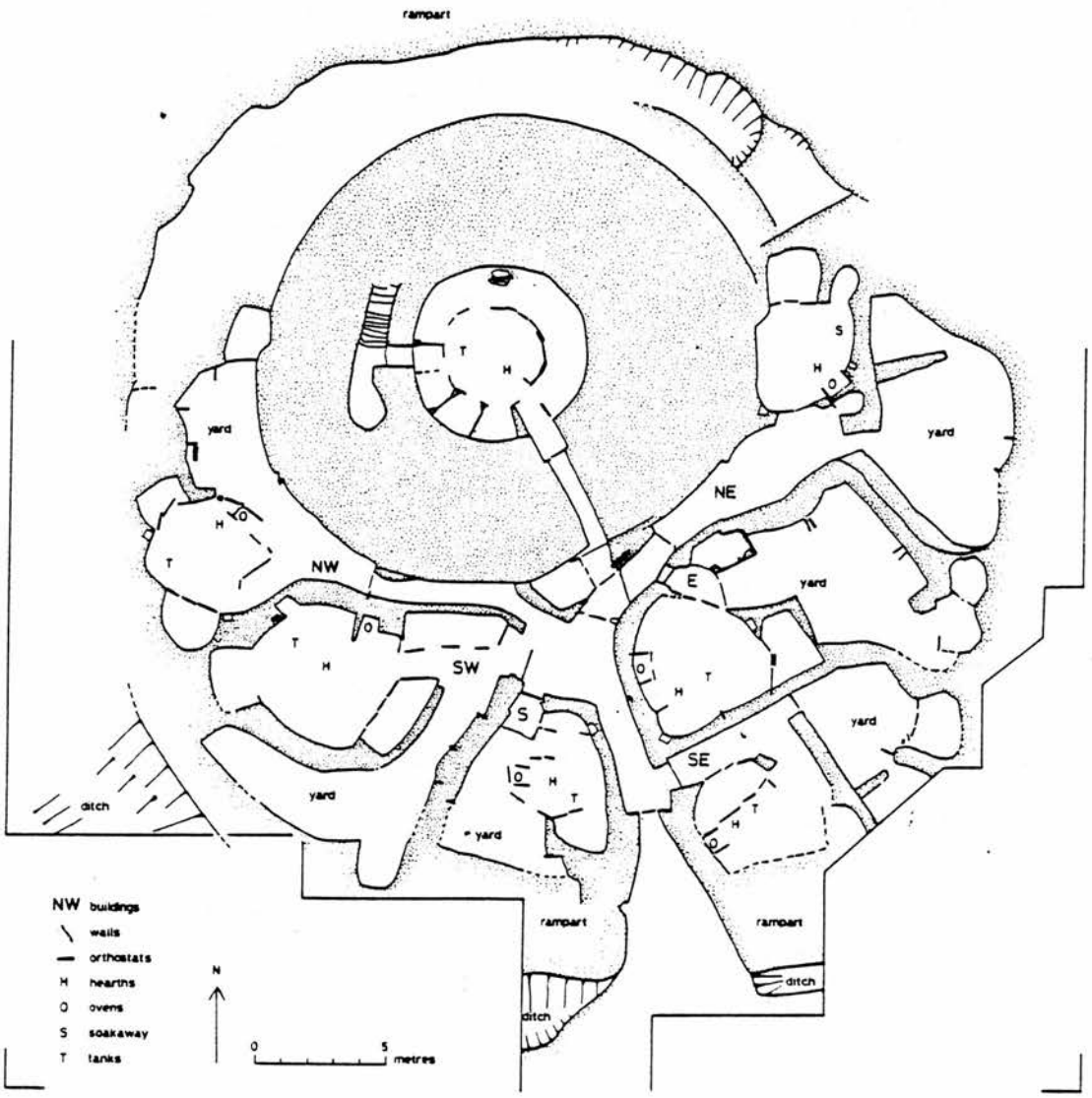
Despite these serious difficulties with the evidence, there is nonetheless still some basis for a reassessment to be made of surrounding buildings at Caithness broch sites, based on the scant record contained in the old excavation reports, and a re-survey of some of the excavated sites. Section 7.1 examines the form and likely function of the surrounding buildings; section 7.2 considers chronological matters; and section 7.3 summarises the implications surrounding buildings raise for understanding the true nature of a broch in Caithness.

7.1 Form and Function

The Phase 7 surrounding buildings at Howe were six houses, each with its accompanying yard, designed to take maximum advantage of the available space between the broch and the outer rampart (Figure 37). Each house had a slab oven, a hearth, and a sunken tank (Carter et al 1984, 66-8). The houses obviously continued in use for some considerable time, as evidenced by the occurrence of four superimposed

Phase 7 at Howe, Stromness, Orkney

Figure 37



Source: Carter et al 1984, 67

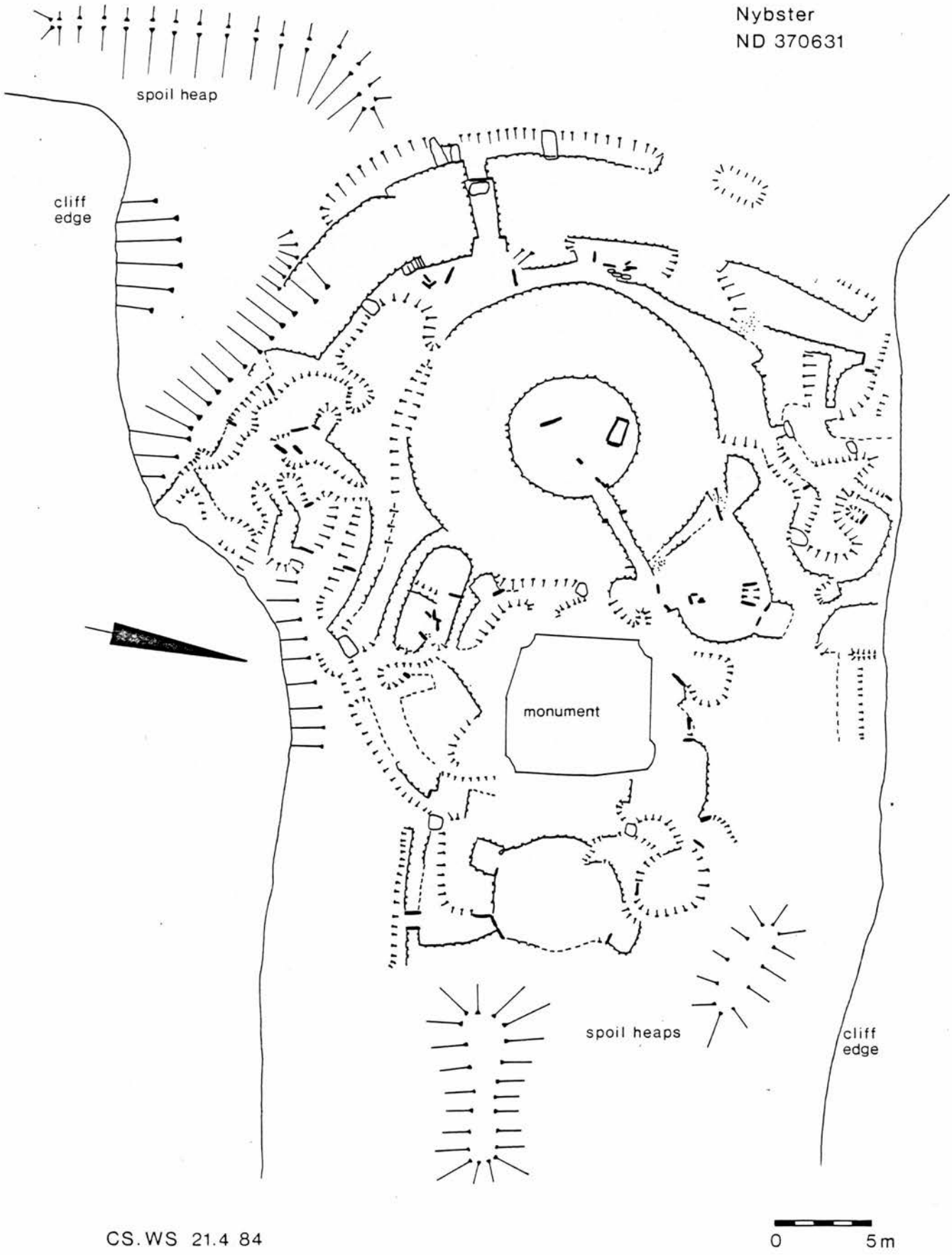

Nybster
ND 370631
spoil heap
cliff
edge
monument
spoil heaps
cliff
edge
CS.WS 21.4 84
0
5m

Figure 38

hearths in the South House. They had succeeded previous houses of which only fragmentary structural remains and some evidence of hearths remained (Beverley Smith, pers. comm.), and they were in turn succeeded by later domestic buildings. The Phase 7 broch was also in domestic use, which continued until a serious structural collapse took place.

The surrounding buildings at broch sites in Caithness have not been revealed in the detail obtained at Howe. Most of the early excavations uncovered only a confusing mass of walling around the broch structure, which is impossible to resolve into any pattern, particularly now that the sites are so overgrown. At Crosskirk the partial nature of the excavation meant that only parts of a number of surrounding buildings were investigated, and no overall pattern was obtained for any period (Figures 39 and 40). However there are nonetheless some pieces of evidence for the form and function of the surrounding buildings in Caithness, which are worth comparing with the detailed evidence from Howe.

The surrounding buildings at Nybster (EC 8; Figure 38) closely resemble the Phase 7 surrounding buildings at Howe (Figure 37). Two buildings in particular, lying immediately NE of the broch and E of the monument, are worthy of note. There is a marked similarity of plan between these buildings and the NW, SW, and NE Houses at Howe, in terms of their overall curvilinear outline, and the occurrence of sub-rectangular alcoves or cells off the main floor area. The alcoves or cells at Howe are divided from the main floor area by upright slabs, and a similar arrangement is visible at Nybster. Each house at Howe had a sunken tank, and the remains of a slab sided sunken tank can be seen in the floor of the building immediately NE of the broch at Nybster, with another sunken tank visible in the floor of an adjacent building close to the cliff edge. The plan made at the time of the excavation at Nybster (see site catalogue) also seems to show a sunken tank in the floor of the building to the E of the monument, with a configuration of stones in the middle of the floor, which may have been a hearth. Other than the excavation plan, there is unfortunately no record of the internal arrangements of the surrounding buildings at Nybster. The site is at present in process of

being cleared of vegetation and consolidated, and more detail may be revealed. Meantime it can only be suggested that the marked similarity between some of the surrounding buildings at Nybster and the Phase 7 surrounding buildings at Howe point to the possibility of a similar function, that is, domestic dwellings.

The excavation at Crosskirk firmly identified the surrounding buildings at that site as having had a domestic function. Throughout his excavation report Fairhurst referred to the surrounding buildings as an "external settlement" around the broch (Figure 39). A domestic function was attested by the occurrence of hearths associated with the buildings, and by finds, such as, pottery. Enclosure IVa (Figure 40a), identified as an early structure, had a hearth in the middle of its floor. No hearth was found in Enclosure VII (Figure 40a), another early structure, but the building was only partially excavated. The existence of other early buildings was identified largely by the occurrence of "isolated hearths" (Enclosures V and VI) (Fairhurst 1984, 73). Two of the later buildings, Enclosure IVb (Figure 40a) and Enclosure II (Figure 40b) had been badly disturbed by a robber trench, but the floor of Enclosure I (Figure 40b) was found to be intact, with a centrally placed hearth (Fairhurst 1984, 84-5). There is no clear record of any sunken tanks in the floor of any of the buildings, but there was a reference to elongated slabs showing in the floor of both Enclosures IVa and VII, which

"were suggestive of the kind of vertical flagstones which had formed box-like structures" (Fairhurst 1984, 76).

A narrow stone box with a lid in the floor of Enclosure I, which was at first taken to be a tank, turned out to be a grave (Fairhurst 1984, 85). None of the surrounding buildings at Crosskirk resembled in form the Phase 7 surrounding buildings at Howe, or the similar buildings at Nybster.

Some consideration was given in the report on Crosskirk to constructional materials which may have been used in the walls and roofs of the surrounding buildings. Fairhurst seemed to find the whole question of the roofing of both broch and surrounding buildings at Crosskirk particularly frustrating. It was pointed out in Chapter 5 that trees were not part of the contemporary landscape of Caithness at

Crosskirk Site Plan

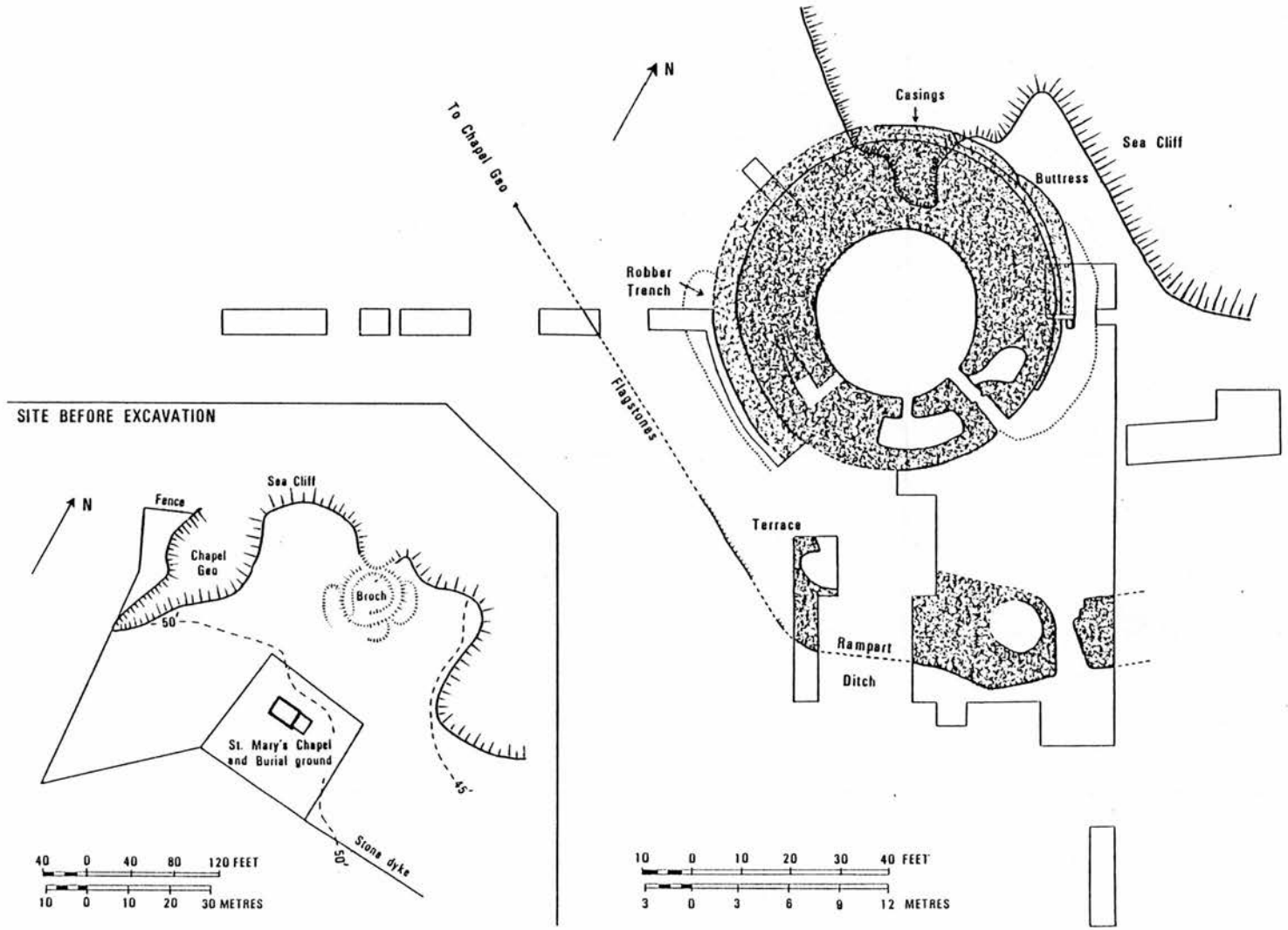
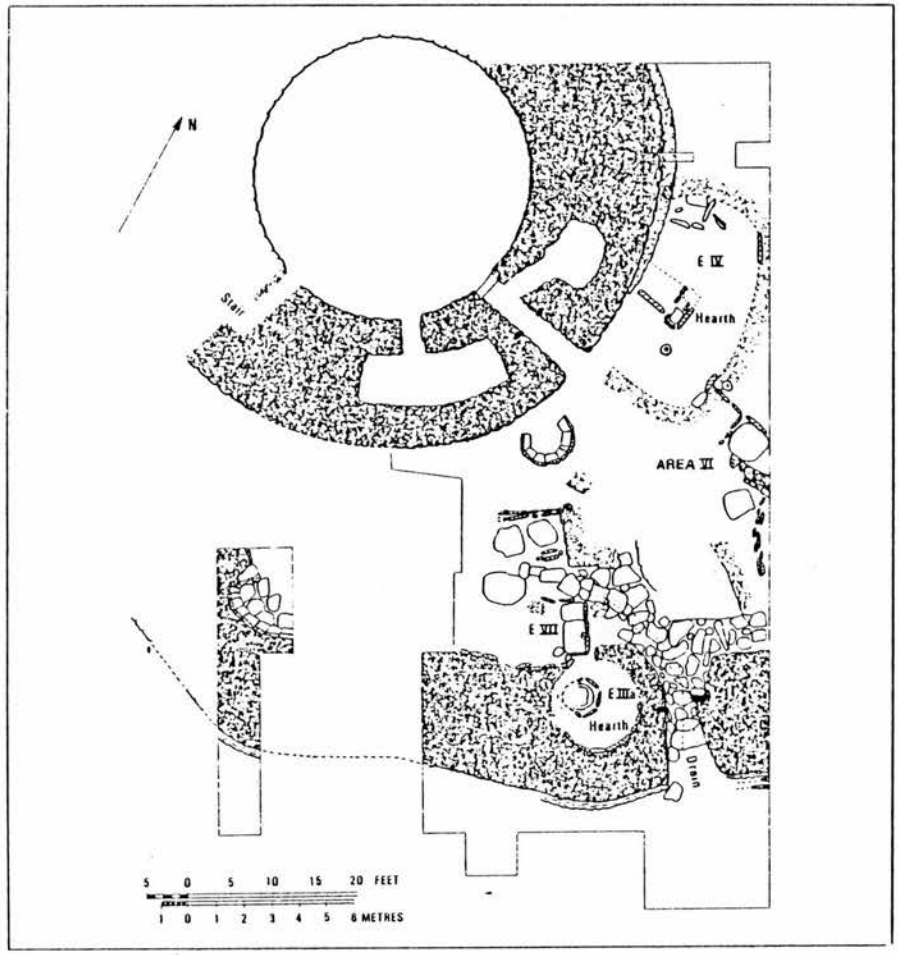


Figure 39

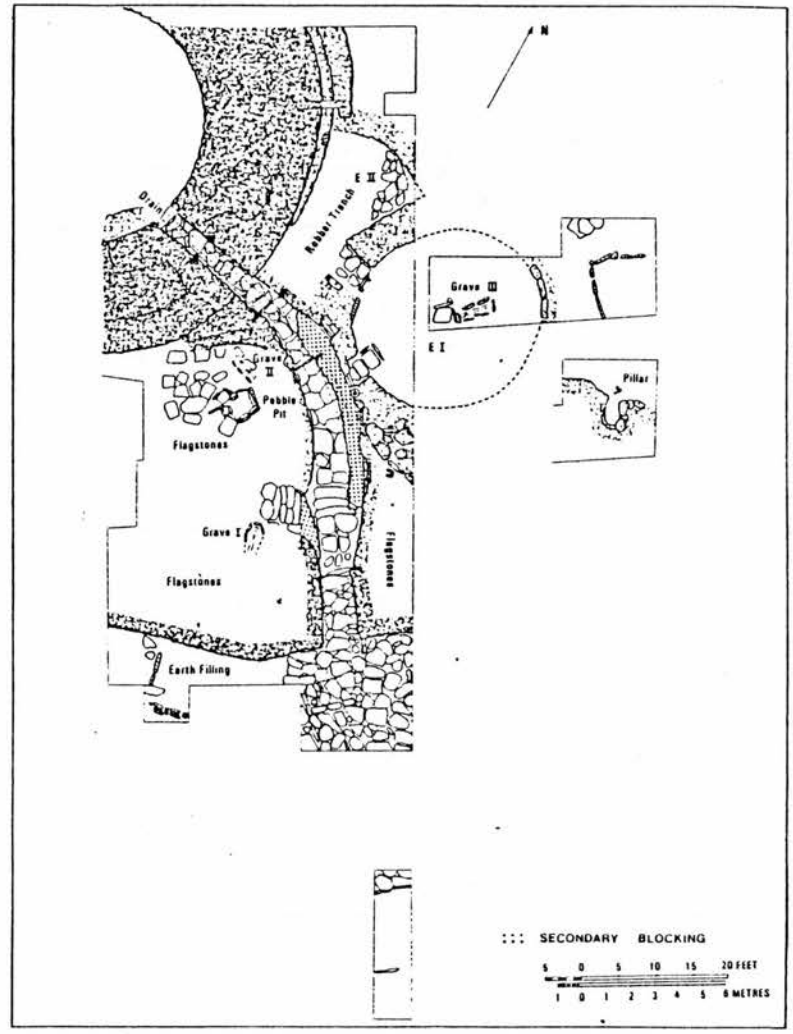
Source: NMRS Crosskirk Archive (uncatalogued)

Crosskirk: Surrounding Buildings (E=Enclosure)
Source: Fairhurst 1984, 72 and 82



Period One-Early Period Three

(a)



Late Period Three

(b)

Figure 40

the time brochs were occupied. The only wood available locally is likely to have been birch, which would not have supplied large constructional timbers for roofing.

Fairhurst noted in excavating the surrounding buildings at Crosskirk that there was much loamy earth mixed with rubble, which perhaps pointed to the use of sods in wall construction or in roofing, although no evidence of turf lines was found (1984, 71). Although the inner face of walls could be recognised, it was often impossible to recognise any outer face, suggesting perhaps a combination of stone and sod built walls. In terms of roofing, no postholes were recognised, and Fairhurst suggested that upright flagstones may have been used to introduce some stability against the thrust from a roof of rafters, turf, and possibly thin flagstones. In the interior of Enclosure I (Figure 40b) a layer of burnt organic material was found under midden, lying directly on the reddened floor of the building. It was suggested that this was probably debris from a thatched roof (Fairhurst 1984, 85).

In support of some of these suggestions by Fairhurst, the following comments may be made.

(1) Most broch mounds in Caithness have the appearance of containing a great deal of earth as well as stone. It is possible that in digging away this earth in the past, excavators have been unconsciously removing part of the archaeological stratigraphy. The earth may have accumulated from the decay of sods used in walling or roofing surrounding buildings, or it may have spilled from the core of the broch wall (see Chapter 8), or it may have resulted from a combination of both these circumstances.

(2) A proliferation of upright flagstones, indicating the presence of surrounding buildings, is one of the most characteristic features of a broch mound in Caithness, whether excavated or not. In the excavated sites upright flagstones in the surrounding buildings can be seen to be partially closing off alcoves, standing at right angles to walls, or forming part of the wall in a post-and-panel construction technique, for example, as at Ness (EC 6), Nybster (EC 8; Figure 38), and Road (EC10; Figure 41). It is possible that the flagstones may

have been placed in these specific locations to aid the support of a roof.

(3) Excavations at Howe in Orkney uncovered evidence for the use of sods in the construction of walls and roofs in the surrounding buildings (Beverley Smith, pers. comm.).

7.2 Chronological Matters

The existence of surrounding buildings in Caithness was first recorded in 1852 at the excavation of the broch of Kettleburn (EC 21; Figure 1) (Rhind 1853). The plan made at the time of the excavation shows the outline of buildings outside the broch to the NW, with a wall enclosing both surrounding buildings and broch at a distance of 25 feet (7.6m) from the broch. There is no record of any buildings extending beyond the enclosing wall. Rhind noted that the space between the broch and the boundary wall had been regularly built upon:

"a fact abundantly proved by the character of the rubbish which filled it, and by the substratum of ashes, intermixed with shells and bones." (Rhind 1853, 213).

At the broch of Yarrows buildings outside the broch were revealed by excavation in 1866-7 (Anderson 1883, 229; Figure 29). Anderson noted at Yarrows that:

"The secondary character of all these exterior constructions was obvious from the fact that underneath their foundations there was a considerable depth of stones overlying the original soil, and mingled with ashes and food refuse." (Anderson 1883, 229).

It does not seem unreasonable to suggest that this considerable depth of stones, ashes and food refuse were the remains of earlier buildings around the broch of Yarrows under those revealed by Anderson. Unfortunately Anderson did not record the exact depth of this potential archaeological stratigraphy, but he did record that the last partition in the broch interior was erected at a time:

"when the original floor had become covered with 8 feet of stones and rubbish" (Anderson 1883, 229).

As it seems likely that occupation levels in the broch interior may have been accumulating at roughly the same rate as those on the broch exterior, it is perhaps not unreasonable to postulate that 2m or more

of stratigraphy may be preserved under the visible surrounding buildings at Yarrows, which as Anderson noted were undoubtedly secondary. By way of comparison it should be noted that a 2m depth of surrounding buildings appears to exist around the broch of Carn na Mairg (TR 28; Figure 28) in the Thurso River Study Area. Unfortunately the broch of Yarrows is now flooded by the water of the Loch of Yarrows, the reservoir for the town of Wick. Consequently it will not be possible to test the validity of the above hypothesis in the foreseeable future.

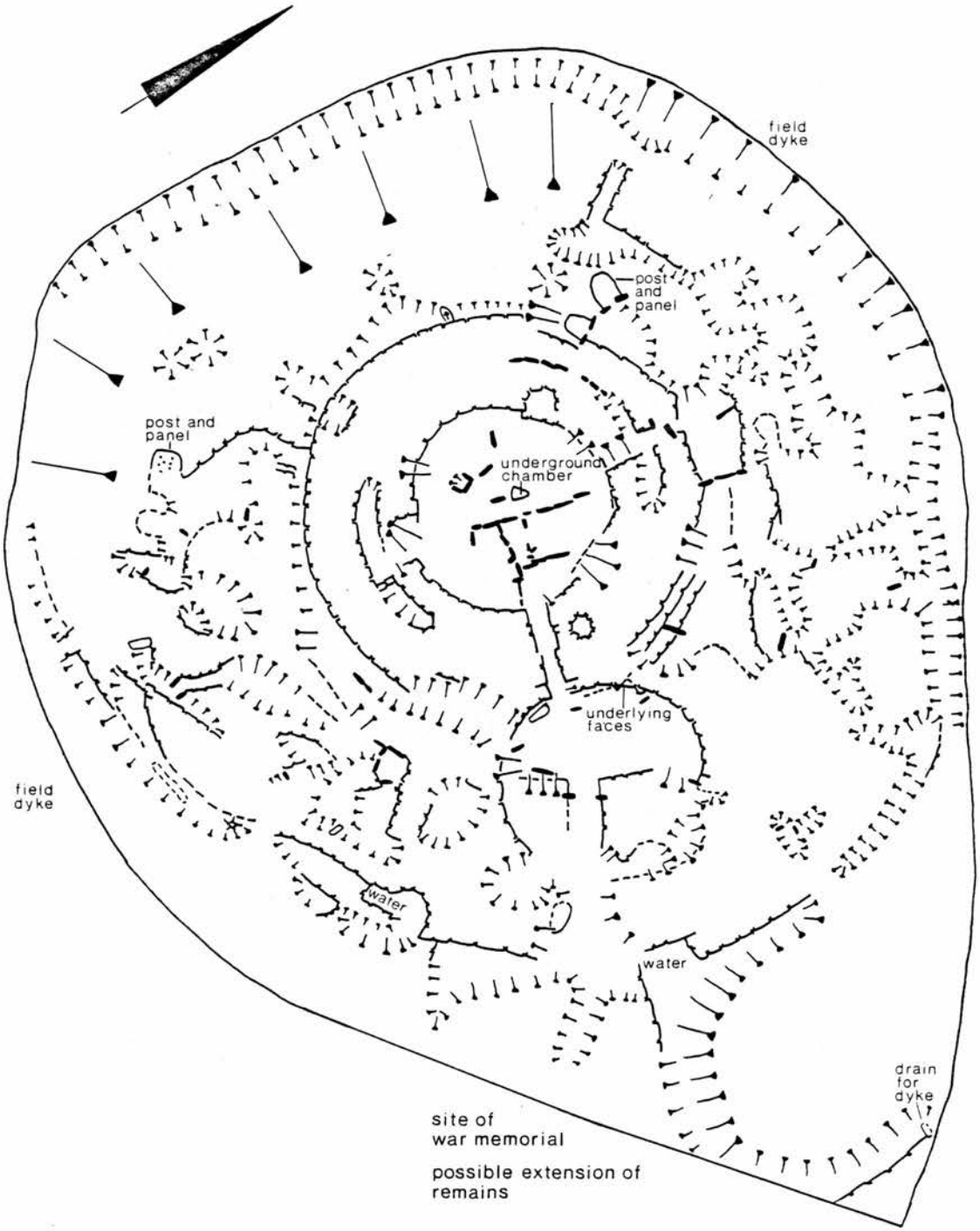
At both Kettleburn and Yarrows the early excavations seem to have identified a lengthy sequence of building outside the broch, in that the ground had been regularly built upon at Kettleburn, and there was a considerable depth of stones etc under the surrounding buildings at Yarrows.

It was suggested by Alexander Curle that the buildings outside the broch of Yarrows were the same as the secondary oblong buildings, which he excavated at the Wag of Forse and termed wags (Curle 1940-1, 33; Figure 42). There are in fact some architectural similarities between the structures at the two sites, in particular the occurrence of upright slabs or pillar stones at right angles to the walls. At the Wag of Forse Curle also found a circular structure, about 54 feet or 16.5m in overall diameter, underlying the oblong buildings, which he identified as a circular wag. He noted that although the finds from the Wag of Forse were few in number, there was nothing which might not have been found in a broch (Curle 1945-6, 21).

A re-examination of the features of the circular structure at the Wag of Forse indicates that it is in fact a broch, badly wrecked by the later settlement of oblong buildings which lie on top of it. The identification of this site as a broch, now confirmed in print (Mercer 1985, 103; Close-Brooks 1986, 153-4), dates the overlying oblong buildings to a post-broch period at the Wag of Forse. It may be suggested that the similar buildings at the broch of Yarrows could be equally late in date, but for some reason the broch structure continued in contemporary use at Yarrows, whereas it went out of use and was overlain by the oblong buildings at the Wag of Forse.

Figure 41

Road
ND 348615



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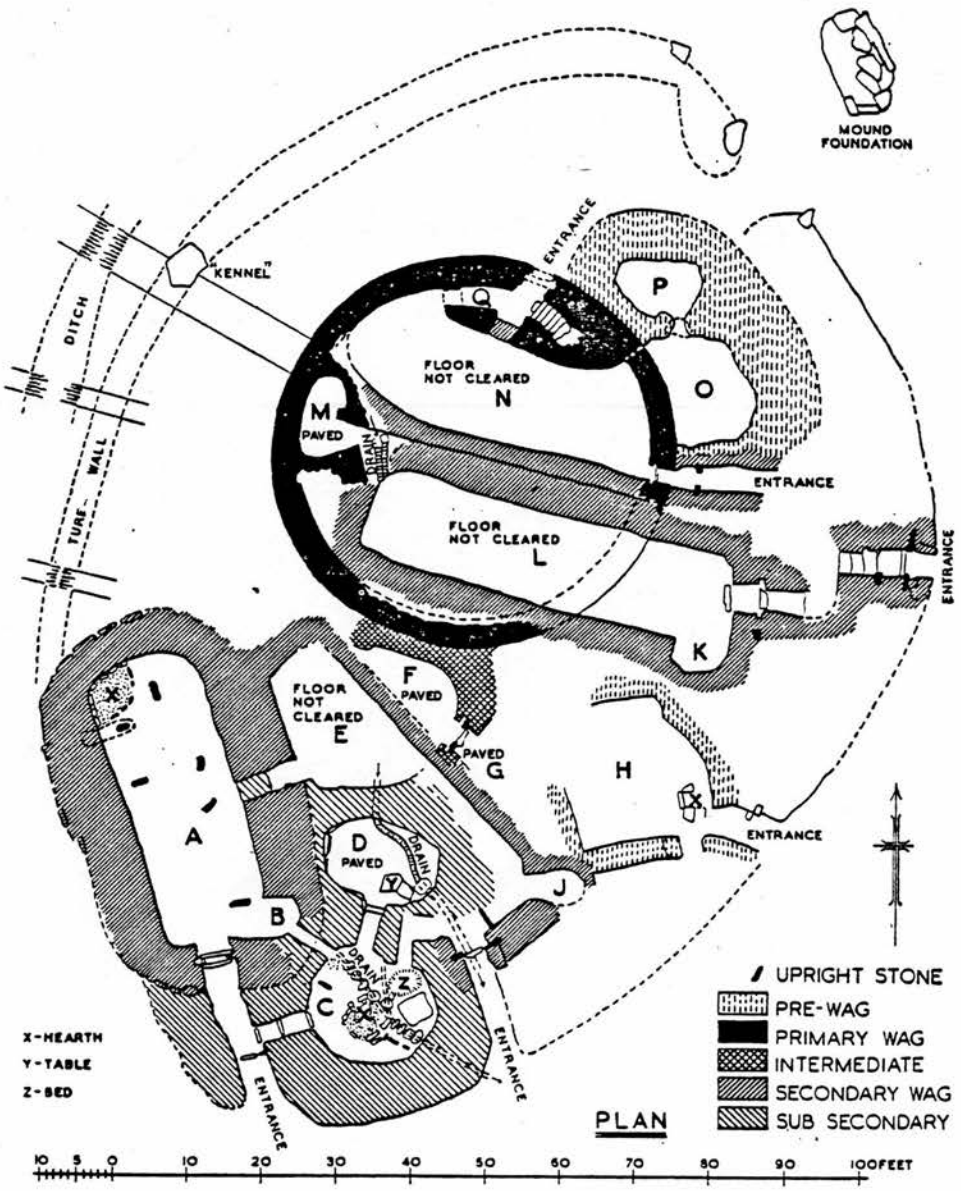


Source: Curle 1947-8, 276

A clue to the possible date of the pillared oblong buildings may be offered by the excavation at Howe in Orkney. A very similar building, termed a stalled building by the excavators of Howe, is firmly dated to Phase 8 in that site's history, that is, the Pictish settlement (Beverley Smith, pers. comm.). By the Pictish period the broch structure at Howe (that is, the Phase 7 or third massive circular building on the site) had gone out of use, and was being used as a rubbish dump (Carter et al 1984, 70; Beverley Smith, pers. comm.). The buildings with the pillar stones at both the Wag of Forse and Yarrows could conceivably also belong to the Pictish period, as at both sites they would appear to be at the top of a very lengthy sequence of occupation, which has not been properly divined or investigated.

It has been pointed out above that some of the buildings revealed by excavation to the north and east of the broch structure at Nybster (EC 8; Figure 38), bear a close resemblance to the contemporary buildings around the Phase 7 broch at Howe (Figure 37). Accordingly the inference may perhaps be drawn that these buildings at Nybster may be contemporary with the first use of the broch structure at that site. It has to be stressed however that such an inference can only apply to some of the surrounding buildings. The re-survey of the broch of Nybster has established that the surrounding buildings as revealed by the excavator of the site, Sir Francis Tress Barry, belong to different chronological periods. Tress Barry excavated down to different levels outside the broch, probably because he was not particularly interested in what he considered to be a group of secondary structures. The building lying to the south-east of the broch structure, close to its wall, is oblong in shape, with a number of upright slabs in its interior, one at right angles to the north wall. This building resembles the oblong buildings at the Wag of Forse, and may be similarly late in date. It is quite different from the curvilinear buildings to the north and east of the broch structure, which resemble the Phase 7 surrounding buildings at Howe.

Differential excavation is even more obvious around the broch structure at Road (EC 10; Figure 41). On plan at least four phases of superimposed building can be identified in the large circular structure outside the east entrance to the broch, and on site the

revealed fragments of the surrounding buildings can be seen to lie at different levels, as exposed and left by Tress Barry. It is hardly surprising in such circumstances, that the surrounding buildings at both Nybster and Road cannot be readily resolved into a cohesive pattern.

Fairhurst considered that there were five or even six phases of occupation in the sequence of surrounding buildings at Crosskirk (1984, 71), but he encountered such fragmentation in the structures, that there may have been more. To distinguish the phases he placed reliance on structural details, as differences in the material culture were slight. The structural details consisted of superimposed walls, pavements, earth floors, and drains, with much evidence of disturbance, levelling, and re-use of stonework. In this respect Crosskirk was very similar to Howe. The excavators of Howe suggested that repeated levelling of dwellings by later settlement must be apparent at other broch sites in Orkney (Carter et al, 1984, 72). The same situation would appear to exist in Caithness.

The earliest surrounding buildings at Crosskirk, Enclosures IVa and VII (Figure 40a), were located directly on a thin layer of boulder clay overlying bedrock, although Fairhurst noted that there was no proof that they were contemporary with each other. He thought that they could be survivals from his postulated pre-broch promontory fort period (1984, 72). There appeared to have been other early buildings in the excavated area, which had been destroyed by later construction (Enclosures V and VI), indicated by vague alignments of flagstones and isolated hearths (1984, 73). Charcoal from the surface of the pavement in Enclosure VII gave a radiocarbon date of 2770±100 (SRR-269). Harkness calibrated this date to the range 1260 BC - 790 BC with 95% confidence (Harkness in Fairhurst 1984, 160-3), an unexpectedly early date.

Three further radiocarbon dates were obtained from the area outside the broch structure, two from Enclosure I (Figure 40b) overlying the two phases of Enclosure IV, and one from Enclosure IIIa (Figure 40a), the round cell within the outer rampart wall W of the outer entrance. These dates were as follows:

SRR-268 Charcoal from hearth Enclosure IIIa 2120±50 370 BC - AD 5
SRR-270 Bone from burial in Enclosure I 2100±100 400 BC - AD 30
SRR-271 Charcoal from floor of Enclosure I 2070±80 380 BC - AD 130
(Calendar age range at 95% confidence level proposed by Harkness)
(Harkness in Fairhurst 1984, 160-3)

The above dates are remarkably consistent, and appear to come from contexts well after the initial foundation of the external settlement, particularly in the case of the two dates for Enclosure I.

The final phase of the external settlement at Crosskirk (identified as Period Four by Fairhurst) may be dated by a number of samian sherds, which were all found in disturbed contexts, but which Fairhurst stressed could have belonged to Period Four (1984, 115). The occurrence of the samian sherds suggested to Fairhurst that the terminal date for Period Four was the second century AD (1984, 100). A single sherd of Roman Castor ware could point to occupation into the middle of the fourth century AD, but Fairhurst thought this was unlikely (1984, 100). By the end of Period Four evidence for permanent occupation of the site had ceased, and only occasional use thereafter seemed to be indicated.

There are six main conclusions from the chronological evidence for the surrounding buildings at Crosskirk.

(1) A lengthy sequence of occupation was found, consistent with the sketchy results of earlier excavations in Caithness.

(2) The date range of the sequence could cover most of the first millennium BC, if the radiocarbon date from Enclosure VII is accepted (SRR-269) (Figure 43). Even if it is not accepted, as Fairhurst seems to have preferred, a major period of occupation is at least indicated from about as early as the third century BC up to the second century AD. As Fairhurst noted:

"The settlement is definitely not a late development of 'Romano-British' times." (1984, 73).

(3) No clear chronological links were established between the sequence in the broch structure and that in the surrounding buildings, particularly with regard to the early history of the site. This is exemplified by the fact that the sequence in the broch interior was

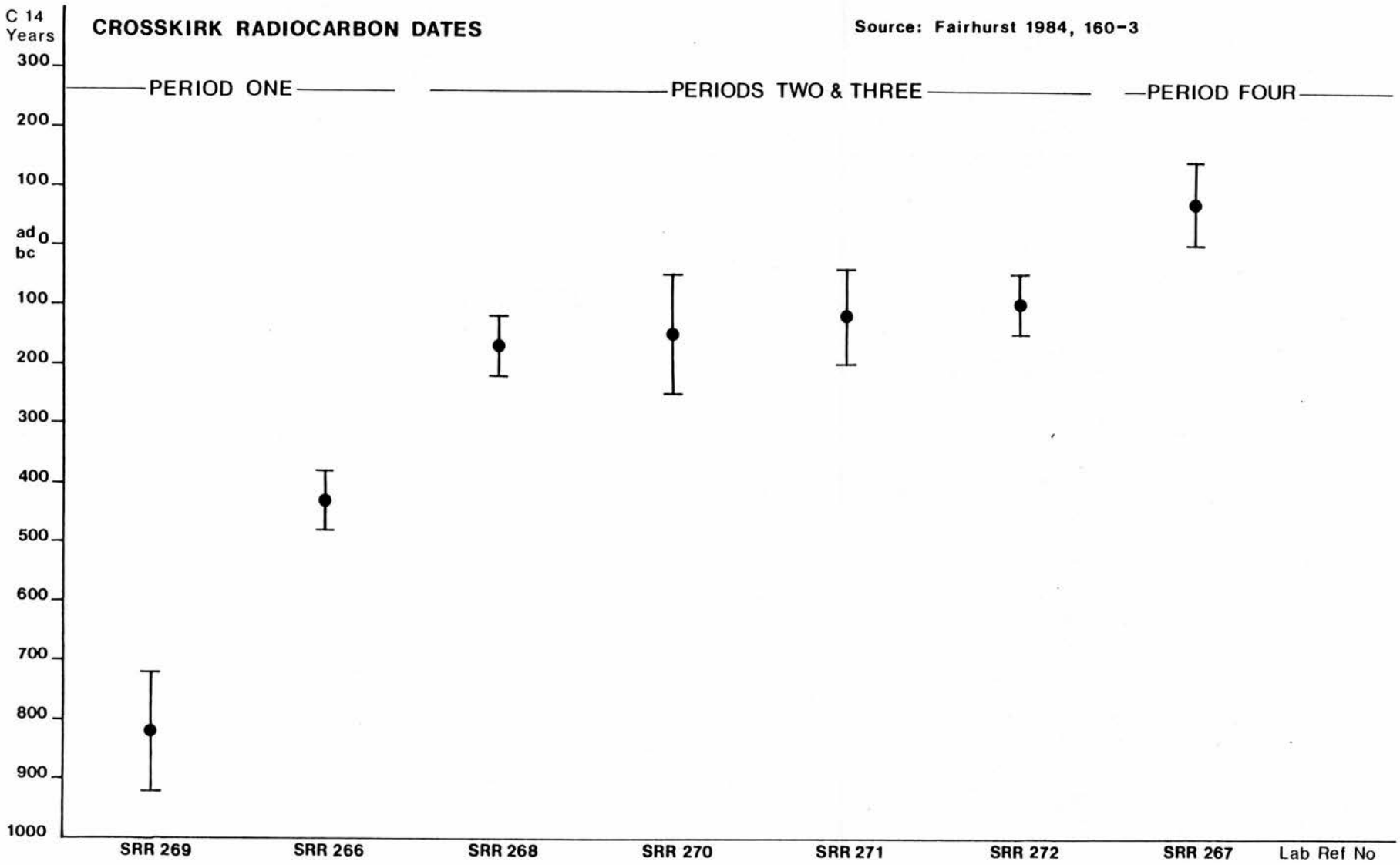

C 14 Years
CROSSKIRK RADIOCARBON DATES
Source: Fairhurst 1984, 160-3
PERIOD ONE
PERIODS TWO & THREE
PERIOD FOUR
300
200
100
ad 0
bc
100
200
300
400
500
600
700
800
900
1000
SRR 269
SRR 266
SRR 268
SRR 270
SRR 271
SRR 272
SRR 267
Lab Ref No

Figure 43

described in terms of Phases One to Three, which were only roughly linked to the Periods Three and Four which described the sequence in the surrounding buildings. Fairhurst's conclusions in respect of the foundation date of the surrounding buildings were particularly vague. On the one hand he seemed to be suggesting that they were built some time after the construction of the broch, pointing to the fact that Enclosure IV (Figure 40a) had been built against the outer face of the broch wall. On the other hand he conceded that Enclosure VII (Figure 40a) could pre-date the broch, because of the very early radiocarbon date it produced (1984, 72-3).

(4) There is nothing in the evidence, which precludes contemporary surrounding buildings around the broch at Crosskirk from the period of its first use. The three radiocarbon dates for the broch interior overlap with those for the surrounding buildings (Figure 43), and the pottery sherds recovered from the earliest enclosures (IV and VII) were identical to those recovered within the broch (Fairhurst 1984, 74 and 76).

(5) The broch structure continued in use, whilst the surrounding buildings were being built, used, demolished and rebuilt.

(6) There was no evidence of Pictish period occupation of the site, permanent occupation having apparently ceased by the end of the second century AD.

The above evidence, from a variety of broch sites, points to the existence of a lengthy chronological sequence of buildings around broch structures in Caithness. The sequence is partially visible at the partly excavated sites of Carn na Mairg (TR 28; Figure 28), Road (EC 10; Figure 41), and Nybster (EC 8; Figure 38). Its existence has been suggested at Kettleburn (EC 21; Figure 1) and Yarrows (Figure 29). It can be detected at a large number of turf covered broch mounds, where the upright slabs at the top of the sequence can be seen protruding through the turf above a considerable depth of underlying debris. Its potential chronological span has been demonstrated by excavation at Crosskirk.

Unfortunately firm dates for the beginning and end of the lengthy sequence of surrounding buildings have not been established for any

Caithness broch site. The excavation at Crosskirk indicated that the sequence may cover several centuries, from the first three centuries BC or earlier, up to the second century AD. It is possible that details of chronology may vary from site to site. For example, there was no Pictish period occupation at Crosskirk, but structural comparison with a Phase 8 building at Howe in Orkney indicates that Pictish settlement may overlie the broch at the Wag of Forse, whilst the broch and surrounding buildings at Yarrows may have continued in use into the Pictish period. It is noteworthy that there is no evidence of Norse occupation levels in any Caithness broch mound, although there have been Norse finds, possibly associated with burials, as at the broch of Castlehill (RCAHMS 1911b, 87, no 320). Equally there were no Norse occupation levels at Howe. Knowledge of the general date for the end of the occupation sequence in Caithness broch mounds would perhaps be as interesting as a date for the beginning of the sequence. It may have much to say about the nature of the Norse colonisation of the District, and any accompanying changes in settlement pattern and land division.

It has also not been firmly established in a Caithness context that brochs had a cluster of buildings around them from their first period of use, although there can be no doubt that the two elements of broch and surrounding buildings were in contemporary use throughout much of the history of individual sites. It seems reasonable however at least to suggest that there were buildings around broch structures in Caithness from the beginning, as at Howe in Orkney, and to expect that further excavation would demonstrate this to be the case.

7.3 Implications

The evidence for surrounding buildings given above has three major implications for the perception of the true nature of a broch in Caithness. First, the lengthy sequence of surrounding buildings, indicated at a number of broch sites, points to a stable settlement pattern over several centuries. Second, the possibility that surrounding buildings may have been contemporary with the broch structure from the beginning, and were certainly so for much of the history of individual locations, indicates that a broch site was a

much larger and more complex functioning unit than the traditional understanding has allowed. Third, the possible domestic function of the surrounding buildings offers an understanding of the function of a full broch complex, in keeping with the conclusions drawn in this respect from an assessment of brochs in relation to their contemporary landscape. Evidence for the particular function(s) of the broch structure within the full complex is considered in Chapter 8.

Surrounding buildings were clearly not the secondary, insubstantial, structures portrayed by the antiquaries, coming into use after the broch structure had lost its initial reason for existence. Although it has not been positively demonstrated on any Caithness broch site that surrounding buildings were a part of broch design from the beginning, the results from Howe indicate strongly that this is likely to have been the case. With that knowledge a broch has to be seen as a much wider functioning unit than simply the broch structure, the element which has received exclusive attention in the past. The function of the site has to be viewed in terms of the total complex, rather than in terms of any one abstracted element. A domestic function for the surrounding buildings is fully in keeping with the conclusion drawn in Chapter 5, that broch complexes in Caithness were the farming settlements of their time. Such an overall function for the complex does not preclude the broch structure having had some more specific function within the complex. Indeed the broch structure is so different from its surrounding buildings, that some difference in detailed function has to be indicated, if a chronological difference cannot be substantiated. Otherwise it might have been expected that the complex would have been full of basically similar structures. Chapter 8 considers in detail the evidence for the nature of broch structures in Caithness.

This chapter has sought to demonstrate that surrounding buildings are a significant factor in attempting to understand the true nature of broch sites in Caithness. Although the evidence is sketchy because of the lack of comprehensive modern excavation in the District, there are sufficient indicators that surrounding buildings formed an integral part of overall site design for most, if not all, of the sequence of occupation on individual sites, a sequence which appears to have

covered several centuries. There is clearly a pressing need for more investigation of surrounding buildings to take place, and for a research strategy to be formulated in this respect.

CHAPTER 8 SITE MORPHOLOGY 3: THE BROCH STRUCTURE

The traditional understanding of brochs is very specific about the nature of the typical broch structure. The main elements of that nature are as follows.

(1) A broch is a round, drystone, tower-like building with a specialised series of architectural features which include the characteristic high, hollow wall containing superimposed galleries (MacKie 1983, 118).
(2) The two crucial diagnostic features of the former existence of a high, hollow wall are an upper intramural gallery, or a void in the inner wall face (MacKie 1973, vol 1, 62).
(3) The wall base displays great thickness and circularity, to support a great height (MacKie in Fowler 1975, 78).
(4) Variations in the thickness of the wall base reveal a sequence of structural development, in that thinner walled brochs in the west with ground level galleries are earlier than thicker walled brochs in the north (MacKie 1965a, 107).
(5) The typical broch had an upper wooden floor in its interior, which rested on a ring of posts around a central circular space, and on a ledge or scarcement built into the inner face of the broch wall (MacKie in Fowler 1975, 76).
(6) Brochs normally only had a single entrance, checked for a door, and fitted with bar holes (Feachem 1977, 162).
(7) Brochs normally had a single winding stairway, although it has been recognised that some brochs in Caithness had two stairs (Graham 1946-7, 65).
(8) The function of a broch was to act as an impregnable refuge (MacKie in Fowler 1975, 75), or alternatively it may have been the home or stronghold of a chieftain (Graham 1946-7, 87).
(9) Brochs were built over a very limited period in the first century BC and the first to second centuries AD, and no true broch should be older than about 50 BC (and probably not older than 40-30 BC) (MacKie 1983, 125).

This chapter examines broch structures in Caithness in detail, with a view to assessing as far as possible the actual picture of form,

function, and chronology presented by the evidence, as opposed to the generalised picture of typicality set out above. Section 8.1 below examines the nature of the broch wall; section 8.2 assesses the occurrence of two entrances in some Caithness brochs; section 8.3 considers the evidence for arrangements in the interior of broch structures; section 8.4 discusses chronological matters, and section 8.5 problems of function in respect of the broch structure.

Unlike the sketchy evidence for the surrounding buildings, there is a much better basis of evidence for the broch structure, simply because it has received the most attention in the series of broch excavations which have taken place in Caithness. Having said that, there are still many aspects for which the evidence is poor, because such a scant record of the excavations was made. There is nonetheless sufficient evidence to cast serious doubt on the application of the conventional wisdom on brochs to structures bearing that name in Caithness.

8.1 The Broch Wall

Caithness brochs are traditionally described as being solid-based, that is, the wall is about 5m wide at base, with no evidence of a ground level gallery (MacKie 1965a, 109). It is assumed that the so-called characteristic hollow wall of the broch started to rise at some point above the surviving solid base. According to MacKie the only sure indicator of the former existence of such a cavity wall is the occurrence either of a void in the inner face of the broch, or an upper level gallery, or both (MacKie 1973, vol 1, 62). The existence of a scarcement as an integral part of the inner face could also perhaps be taken as an indicator of a high rising, hollow wall (MacKie 1965a, 100).

Table 15 (p180) lists the surviving height of the wall at the excavated brochs in Caithness for which a record exists. Most of the walls have only survived 1-3m high, with three exceptions where the wall was over 4m high when uncovered. These three brochs, Dunbeath (DW 8; Figure 32), Yarrows (Figure 29), and Ousedale Burn are all located on the south-east coast of the District, south of Wick. There is evidence of voids in the inner face over both the entrance and the

Voids in Inner Face at the Broch of Yarrows
Source: Anderson 1883, 227-8

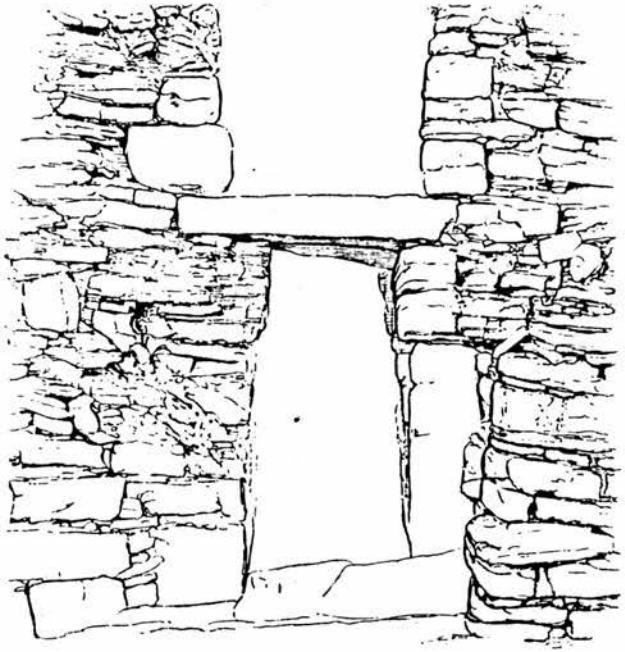


Fig. 196.—Interior aperture of Doorway in Broch of Yarhouse. (From a Photograph.)

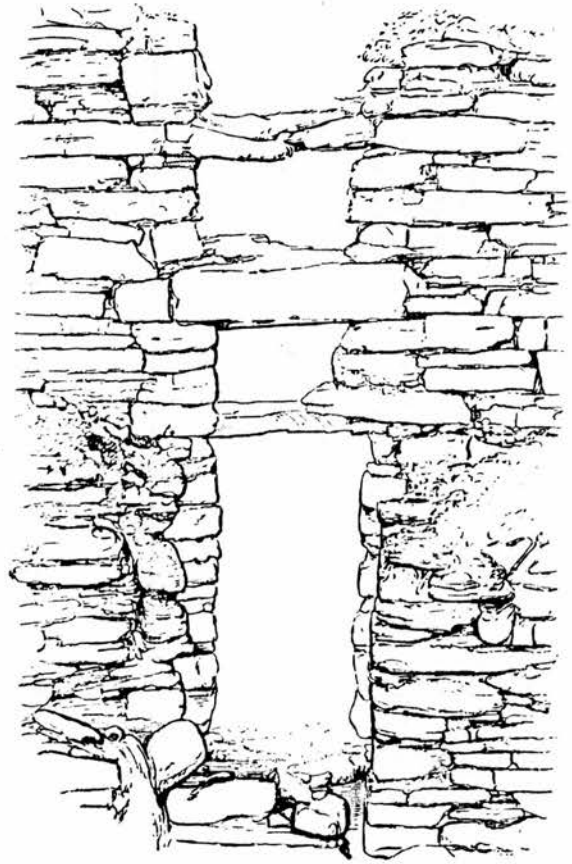


Fig. 197.—Entrance to the stair and window-like openings over it, in the Broch of Yarhouse. (From a Photograph.)

Figure 44

stair entry at Ousedale Burn broch, and the broch is described as having an integral scarcement at a height of 8ft (2.4m) from the floor (Mackay 1891-2, 353-5; RCAHMS 1911b, 54-6, no 204). The excavation at Yarrows uncovered a void over the east entrance, three superimposed voids over the stair entry, and a further void providing light at a landing in the stairwell (Anderson 1883, 227; Figure 44). Most of these voids are no longer visible at the site. No integral scarcement was found at Yarrows, and there is instead an apparent lining wall forming a scarcement at about 8ft (2.4m) above the broch floor (Anderson 1883, 228). There is an apparent integral scarcement at Dunbeath broch (DW 8; Figure 32) about 0.9m above the present floor level within the broch, but the feature is badly weathered and there is some evidence of rebuilding (see site catalogue). There is no record that any of these three brochs had an upper level gallery, such as may be seen at brochs on the west coast, although Ousedale Burn and Yarrows do have stairwells rising within the wall. Curiously there is no sign whatsoever of a stair at Dunbeath.

The brochs of Ousedale Burn, Yarrows, Dunbeath (DW 8), and Bail a'Charn (Figure 27) are the only excavated brochs in Caithness, where some so-called diagnostic characteristics of a high, hollow wall are recorded. The existence of a single void giving light to the stairfoot chamber was noted at Bail a'Charn (RCAHMS 1911b, 127-9, no 466), but it is no longer visible as the site was backfilled shortly after its excavation. There is also an apparent high level gallery exposed at the broch of Carn na Mairg (TR 28; Figure 28), but it may simply be part of a stairwell rising in the wall width. It may perhaps be said that the other excavated brochs in Caithness have not survived to a great enough height for features such as an upper gallery or voids to be preserved. The existence of apparent scarcements has been noted however at some other excavated sites in the District, such as, the Harbour Mound (EC 12) and Skirza Head (EC 3), but the RCAHMS described the scarcement at the former site as in fact a secondary lining wall and not an integral scarcement (1911b, 154-5, no 515), and a resurvey of the latter site identified the scarcement there also as a secondary lining or casing wall (see site catalogue). Sites such as Freswick Links (EC 5) and Hillhead (EC 23) are now unfortunately completely obscured, so that it is not possible to check the true nature of their

identified scarcements, and no further record of these has survived.

The inner face of the wall at the broch of Crosskirk was found to have survived to about 3m in height when it was excavated, with the body of the wall 4m high at its maximum (Fairhurst 1984, 42-3). Despite surviving to this height there was no evidence of any voids in the inner face of the wall, and there was only some very slight and indirect evidence for the possible existence of a scarcement and an upper gallery (Fairhurst 1984, 43). The evidence consisted of a slight overhang in three adjacent slabs in the north-west sector of the wall at a height of 2.75m, possibly pointing to the beginning of corbelling for a scarcement; and some horizontal slabbing in the east and west sectors of the wall, possibly representing the foundations of a gallery, although not its floor. Fairhurst himself did not seem convinced of the worth of this evidence, particularly as there was a particular reason to doubt that the wall base at Crosskirk could have supported a cavity wall with up to five or six superimposed galleries.

The broch wall at Crosskirk was on average about 4.3m thick, but sectioning of the wall during the excavation demonstrated that it was only built entirely of stone at the entrance, the two cells, and the stair (Fairhurst 1984, 42). Elsewhere the wall consisted of an inner and outer face, one slab in thickness, with a core filled with earth, boulder clay, rubble, slabs, domestic refuse, and rounded boulders. The major part of the fill was earth (Fairhurst 1984, 41). The core was solidly packed, but there was no evidence of ramming, and it did not seem to be firmly consolidated. Fairhurst did not think that a wall with such a core could ever have been stable above about 4m in height, and obvious signs of instability had developed in the early stages of occupation, necessitating the use of buttresses against the outer face at several points. He concluded that it was difficult to believe that the wall of the Crosskirk broch ever rose higher than 6m, that is, less than half the height of the broch of Mousa (Fairhurst 1984, 45-6). He noted that:

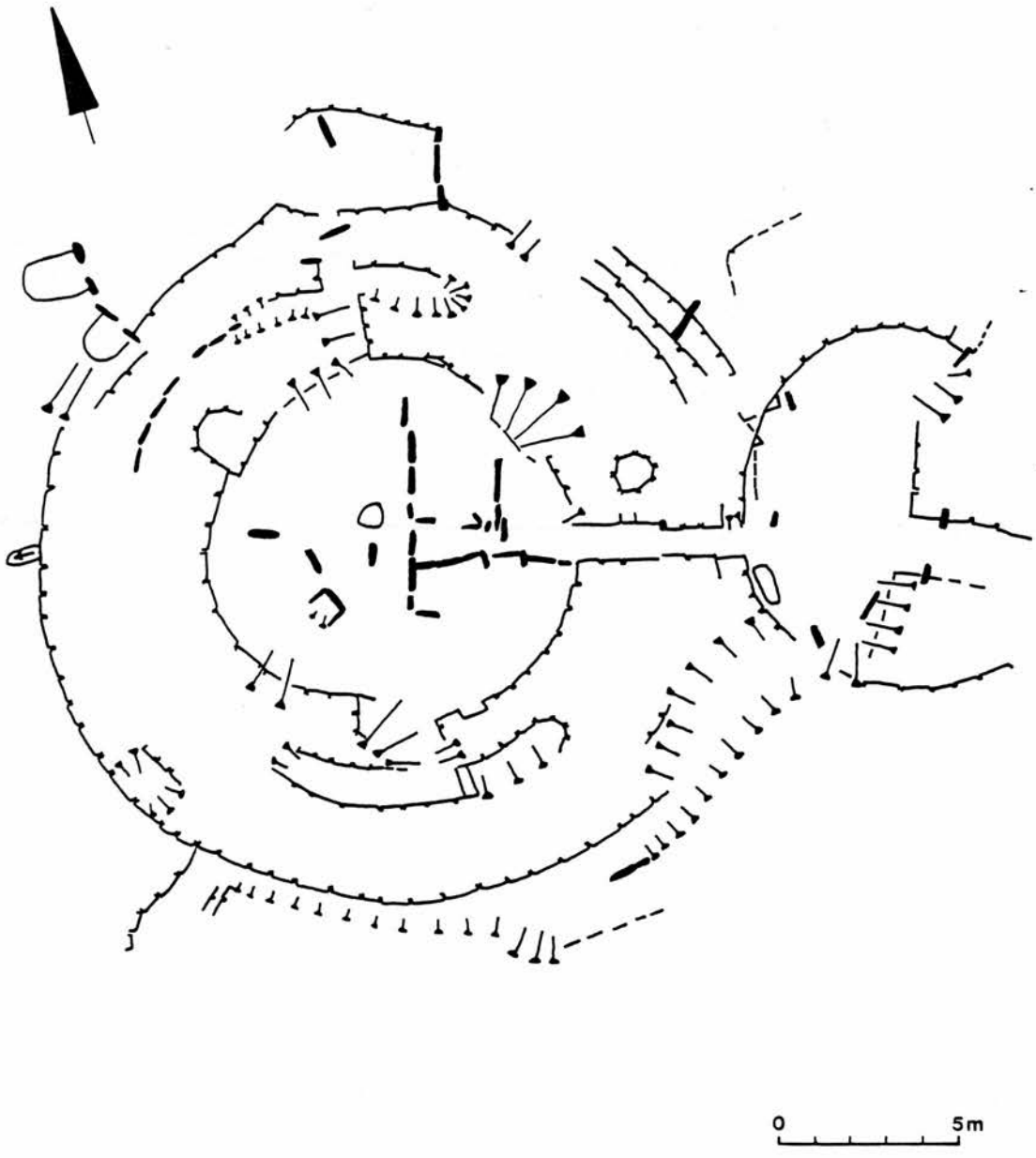
"In spite of the fact that numerous broch sites have been excavated in the past, especially in Caithness and Orkney, almost no observations have been made relating to the core of their walls. There are many loose statements in the broch literature about the good and even excellent masonry, but it seems to have been taken for granted that the solid-based northern brochs were built entirely of stone. The large amount of rubble and earth to be seen on many sites has been

glossed over, usually with some statement about stone robbing to build houses, dykes and roads. In a controversy with Sir Lindsay Scott over the original height of the broch towers, Graham was able to show that slabs could in fact be carted away for great distances (1947). Nevertheless, the Crosskirk evidence clearly indicates the possibility of other solid-based brochs having wall cores which consist primarily of earth." (Fairhurst 1984, 42).

It has already been noted in Chapter 7 that many Caithness broch mounds have the appearance of containing a high content of earth, which was linked in that chapter to the possible use of sods in the construction of the surrounding buildings. It may be that the use of earth in the broch wall core was another contributory factor to the accumulation of earth in the mounds. Unfortunately there is no direct evidence from any other Caithness broch site to support Fairhurst's hypothesis that other broch structures may have had wall cores which were not built entirely of stone.

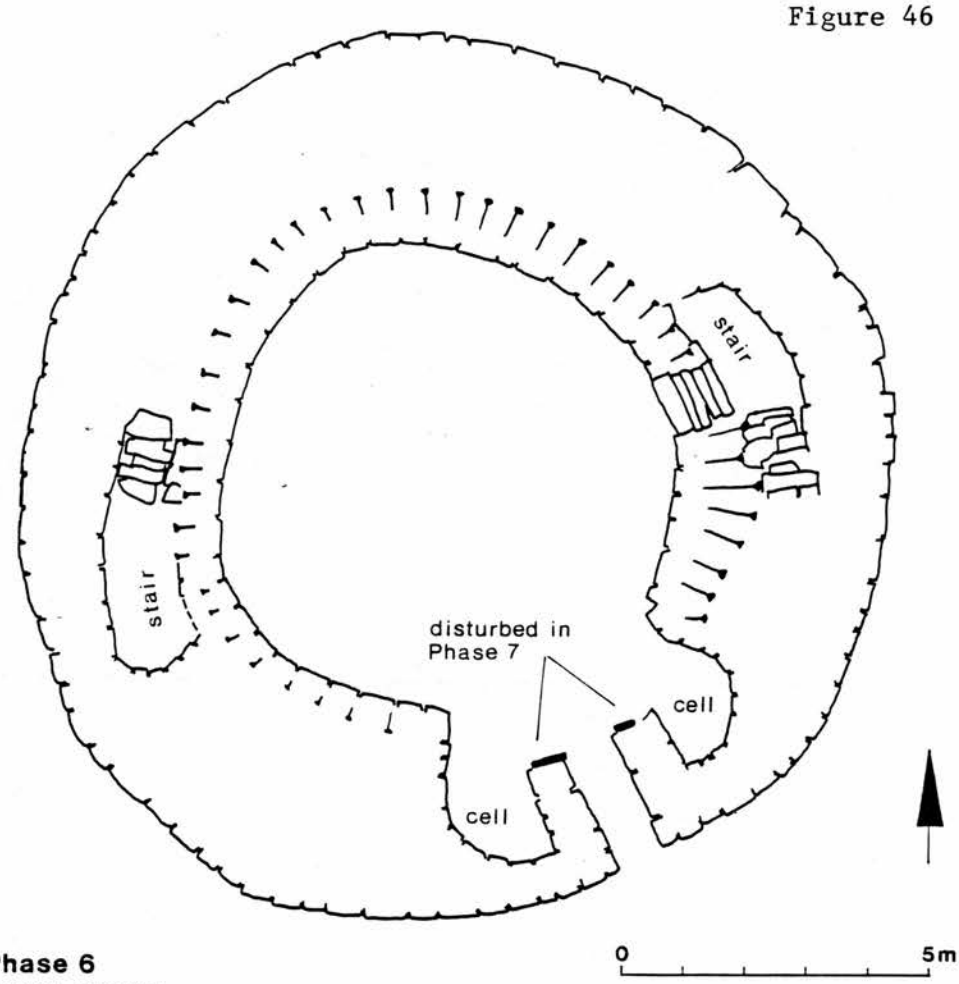
There is no suggestion in the report of the excavation of the broch of Killimster (EC 17; Figure 34), that the wall was other than composed entirely of stone. There is in fact a reference in the report to the tower being a well-built ring of masonry, although the site plan does not indicate that the wall was sectioned (Calder 1947-8, 126). The outer enclosing wall was sectioned however in several places, and was found not to have been built entirely of stone. It consisted of a clay core confined between well-built revetting walls of masonry from 10 to 19in (0.2-0.4m) thick on the outer face and from 1ft 7in to 3ft 6in (0.4-1m) on the inner. The clay core appeared as a deep segment of a circle with a rise from 3 to 5ft (0.9-1.5m). Calder thought that the clay core alone had formed the primary defence, with the retaining walls being built later, as the angle between the surface of the clay core and the inner wall had been filled with rubble after the clay had been thrown up (1947-8, 136). As Calder did not specify the amount of time which had elapsed between the two events, it may be that the outer wall was all of one build, with both clay and rubble being used for the core by deliberate design. In terms of assessing the significance of the nature of the outer wall at Killimster, it should be noted that the outer wall at Crosskirk had been constructed with a clay core with only a small admixture of slabs (Fairhurst 1984, 31). It may be that the wall of the broch structure at Killimster, had it been sectioned, would have shown further parallels with Crosskirk.

Figure 45

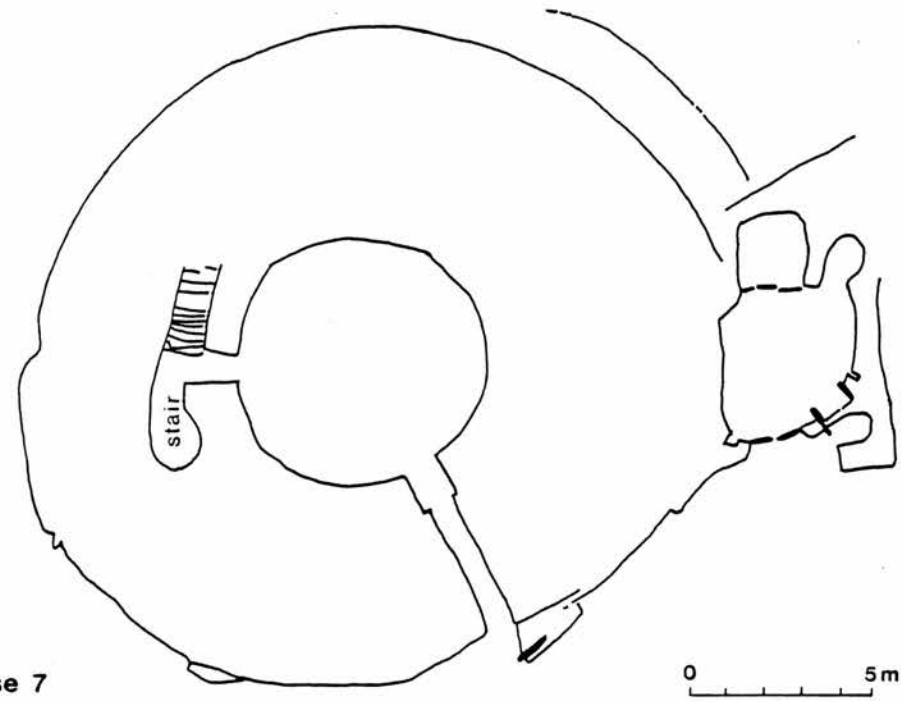


ROAD BROCH, KEISS
DETAIL OF BROCH STRUCTURE

Figure 46



a Howe, Phase 6
from excavation drawing



b Howe, Phase 7
from Carter et al 1984, fig 4

Although there is no further evidence for the constructional technique employed in individual broch walls in Caithness, there is other evidence that the walls of broch structures in the District are much more complex entities than the traditional understanding of a broch allows. Clear evidence of buttressing was found at the broch of Killimster (EC 17; Figure 34) (Calder 1947-8, 128). At Road broch (EC 10) there is a most obvious addition to the wall, which would appear to case the whole circuit, although it was only partially exposed during the Tress Barry excavations (Figure 45). It would appear that the wall of the broch structure at Road was originally only about 3.3m thick, before the casing, which is 0.9m thick, was added. On the north-east arc of the broch a further casing or buttress was added at an even later stage, incorporating a massive upright flagstone. The original wall at Road, containing all of the intramural features, seems to have been much thinner than might appear to a casual observer. In terms of the traditional view that brochs in the north have much thicker walls than those in the west, the original wall thickness at Road would appear to be little different from that which may be noted at several sites in Skye (see IS numbers in the site catalogue).

The reasons for the building of the additional casing at Road, and the detailed chronology of the site, are obscure. In this connection it may be interesting to note that the plan of the wall top at Road is reminiscent of the Phase 7 broch at Howe in Orkney. The Phase 7 broch was basically the Phase 6 broch, reconstructed because the wall was unstable (Figure 46). As part of the reconstruction a massive casing was added to the outside of the Phase 6 wall, and a number of intramural features in the Phase 6 wall were blocked (Beverley Smith, pers. comm.). It may be that the wall at Road was equally unstable and had to be encased around its circuit, with further buttressing later on the north-east arc. The brochs of Crosskirk, Killimster (EC 17), and Road (EC 10) seem to point to the possibility that instability in the wall of the broch structure was in fact a major problem in Caithness, as suggested by Fairhurst for Crosskirk.

The walls of the excavated brochs in Caithness display a variety of structural features (see Table 16, p181). The most striking aspect is that some of the walls have practically none of the intramural

features which might be expected according to the traditional understanding of a broch, such as, the brochs of Killimster (EC 17; Figure 34), Dunbeath (DW 8; Figure 32), and Nybster (EC 8; Figure 38), which in particular appear to have no stair, or at least not one starting at ground level. Experience at Crosskirk, and at Howe in Orkney, demonstrates that intramural features may nonetheless exist within the broch walls, obscured by later reconstruction, or possibly not exposed during excavation. The recording of intramural features at some excavated sites may also have been poor. Unfortunately there is no means of checking the details of some of them, as the sites are now completely obscured or destroyed.

One of the most interesting intramural details is the occurrence of two staircases at some sites, directly opposite each other at ground level (see Figures 47 and 48). If these twin stairs are to be envisaged as both rising up through a high hollow wall, a double helix stair arrangement would ensue. Such a structural design seems unnecessarily complicated, and would probably have given some real construction problems to the builders. It is more likely that both stairs terminated at a low wall top, or that one stair terminated at first floor level, with a single stair rising higher in the wall. It is not obvious why more than one staircase was required, unless access across the interior was restricted in some way. Two stairs rising simultaneously from ground level, seem to be peculiar to Caithness, and seem to occur in combination with the equally peculiar feature of two entrances, though not exclusively. The broch of Bail a'Charn (Figure 27) for example, has two stairs, but apparently only one entrance. It is possible that Tress Barry in excavating the site missed a second entrance, but there is unfortunately no way of checking whether this was the case, as the site was backfilled after its excavation. The broch of Yarrows (Figure 29) by contrast has two entrances, but only one stair. The occurrence and possible significance of two entrances are considered below.

8.2 Two Entrances

The occurrence of two entrances to the broch structure is fairly reasonably attested at nine excavated sites in Caithness (Figure 47):

Skirza Head (EC 3)
Freswick Links (EC 5)
Road (EC 10)
Yarrows
Wag of Forse
Ness (EC 6)
Kettleburn (EC 21)
Harbour Mound (EC 12)
Brounaban

At Skirza Head (EC 3) the entrance to the broch is identified as being that from the seaward end of the promontory (a), but Anderson, in providing the only record of the Tress Barry excavation, appeared to refer to the existence of another entrance from the landward end of the promontory (b):

"At a distance of 16 feet round the interior wall to the left of the main entrance is the entrance to the stair in the thickness of the wall with a small chamber in the usual position opposite the stair-foot. This entrance is 2 feet 7 inches wide. The stair is gone, but the remains of two steps are still traceable. The length of the chamber in front of the stair-foot is uncertain, only part of the side-walls remaining at the entrance. Between it and the exterior of the main wall there is a large oblong tank-like construction of four slabs set in the floor of what would otherwise have been a passage outwards." (Anderson 1900-1, 144-5).

The survey of the site in 1984 produced no evidence that this passage in fact continued right through the wall, except that the exposed outer face of the wall is interrupted at this point. On the S side of the passage however there is a large, square, upright slab, which may be a door check.

At Ness (EC 6) two entrances to the broch structure, one from the seaward end of the promontory (a), and one from the landward end (b), are clearly shown on the plan made at the time of the excavation of the site (RCAHMS, 1911b, 13-4, no 33; see site catalogue). The lines of both of these entrances were found in the survey of the site in 1984.

At Freswick Links (EC 5) two entrances directly opposite each other were depicted on the plan made at the time of the excavation of the site (RCAHMS 1911b, 14-5, no 34; see site catalogue). As this site is now totally obscured by sand it is not possible to check the existence or status of the two entrances. Although there are photographs of the broch structure in the Nicolson Collection in Caithness, there are none which are helpful in elucidating the status of the two entrances.

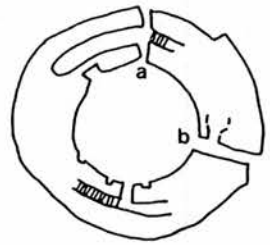
At Kettleburn (EC 21) a plan was made at the time of the excavation of

Figure 47

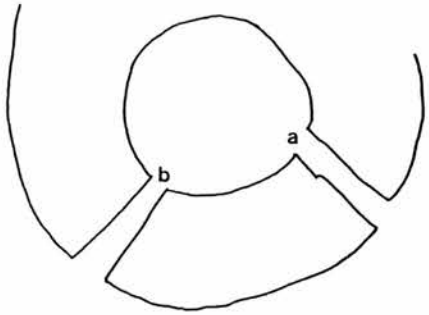
BROCHS WITH TWO ENTRANCES IN EAST CAITHNESS

not to common scale

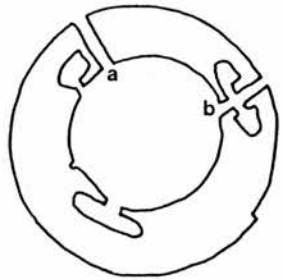
Yarrows



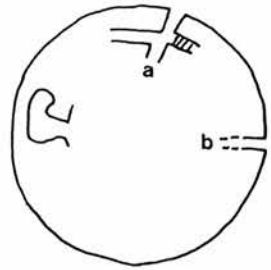
Road



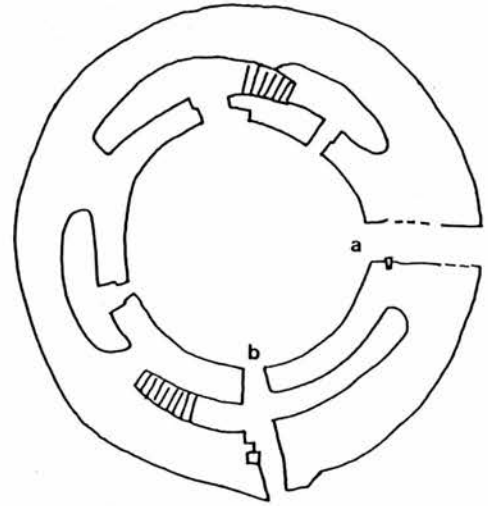
Skirza Head



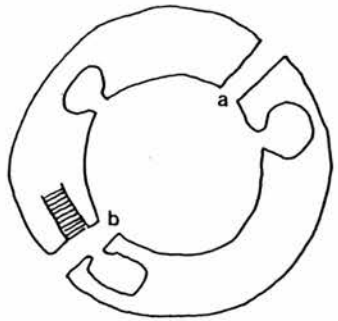
Kettleburn



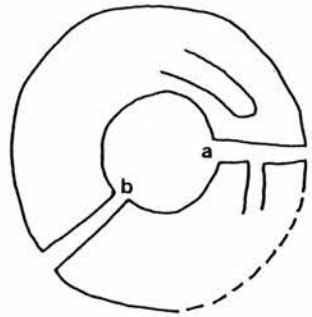
Wag of Forse



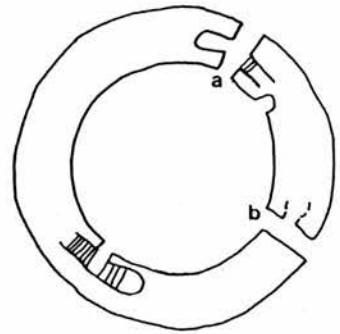
Brounaban



Freswick Links

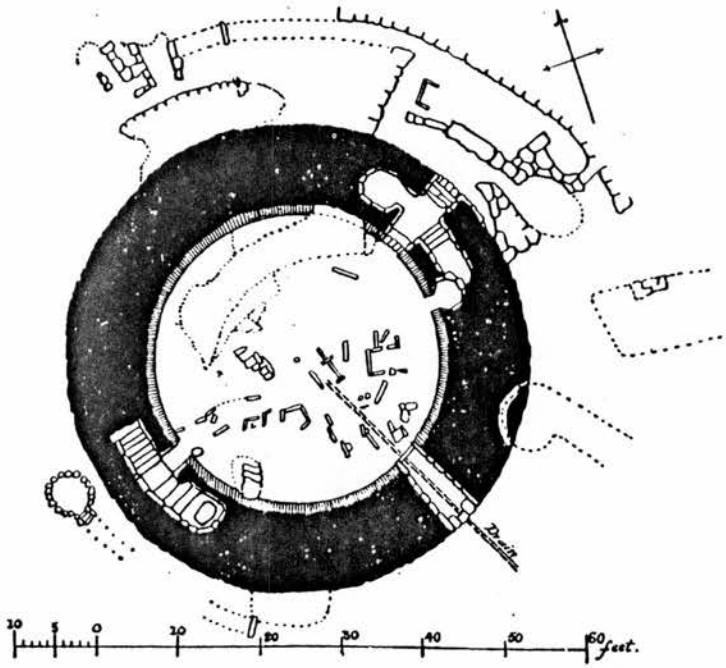


Ness



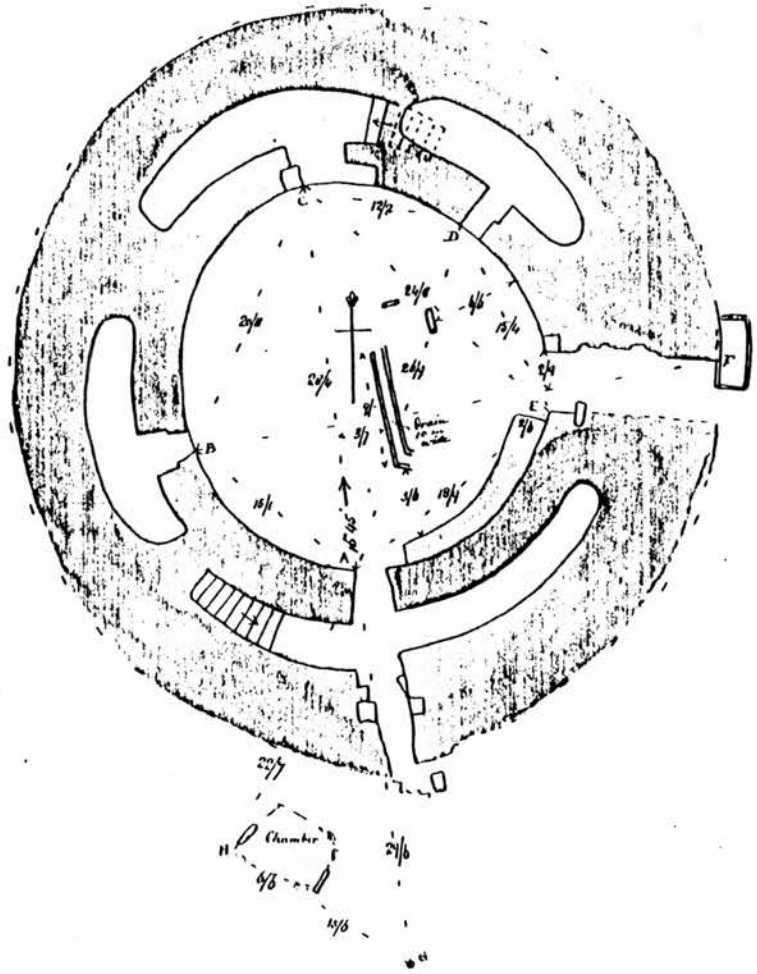
Harbour Mound

Source: RCAHMS 1911b, 154
Harbour Mound



(a)

Source: NMRS CAD/64/2
Brounaban



(b)

Figure 48

the site (Rhind 1853, 212; see site catalogue). It clearly shows two entrances to the broch structure, one from the NW (a) and one from the NE with two guard cells (b). This site was totally destroyed shortly after its excavation, so it is not possible to check any details of the broch structure.

At Road (EC 10) the two entrances to the broch structure are still clearly visible at the site. The entrance in the N passes the foot of one of the two stairs in the broch wall (a), and the entrance in the E has a guard cell on its N side (b).

At the Harbour Mound (EC 12) only the entrance in the NE is clearly visible at the site now (a). The entrance from the seaward side in the SE is shown on the plan made at the time of the excavation of the site (RCAHMS 1911b, 154-5, no 515; see site catalogue), and Anderson in reporting the excavation referred to the remains of the floor of a guard chamber off the passage (1900-1, 124).

At Yarrows both entrances to the broch structure are clearly visible at the site, one in the E (a), the other in the S passing the stairfoot (b) (Mercer 1985, fig 58).

At Brounaban some reconstruction has obscured to some extent the details of the broch wall, but a plan of the broch structure by Sir Henry Dryden and R Shearer made in 1871 clearly shows two entrances (Figure 48a; plan in NMRS).

At the Wag of Forse, where the circular structure is now recognised to be a broch, the plan made at the time of the excavation of the site shows two entrances to this structure, one in the N past a stair (a), and another in the E (b) (Curle 1945-6, 13). Both entrances can still be seen at the site, the N entrance being much more obvious than the E. The occurrence of two entrances in a similar configuration to those at Road, Harbour Mound, and Yarrows, is another reason for identifying the Wag of Forse as a certain broch.

The occurrence of two entrances at some Caithness brochs has been remarked upon before, but always on the premise that one of the entrances must be secondary (Young 1961-2, 180; MacKie 1971b, 7-8). According to the traditional understanding, brochs are expected to

have had only one entrance in their original form. It has been suggested that where the wall of the broch was thinnest at the common back wall of the stair and stairfoot chamber, it was possible to push through a second entrance (Young 1961-2, 180), presumably for particular access to so-called secondary surrounding buildings, or because the original entrance had been blocked for some reason. In seven of the nine broch structures with two entrances there is clear evidence that one of the entrances passes the foot of a stair (Figure 47). (It is not known to which side of the SW entrance the stair rose at Skirza Head, as no plan was made at the time of its excavation. It is shown on Figure 47 rising to the left on entering from the outside, in conformity with the other sites with entrances past the stairfoot.) It may have been the case that an entrance passed a stairfoot at the remaining two sites, but evidence for this does not exist.

It is evident from a resurvey of the broch of Yarrows (Mercer 1985, fig 58; Figures 29 and 47) that the S entrance past the stairfoot must in fact be original. The stairwell is markedly offset from the stairfoot chamber, making it impossible that they had a common back wall, through which an entrance could be pushed. It is clear that the entrance, stair, and stairfoot chamber were designed and built as a unit. Similarly at Road (EC 10) the back walls of the N stair and stair foot chamber are offset, although not as much as at Yarrows (Figures 45 and 47). Again the whole arrangement would appear to have been designed and built as a single unit. Neither of the plans made during the excavation of Yarrows and Road show the distinct offsetting of stair and stairfoot chamber, presumably because of poor survey technique, or because it did not fit with the expected picture of a typical broch.

It has been suggested for the Harbour Mound broch (EC 12) that the entrance from the seaward side (b), shown straight sided on the plan made at the time of excavation, is secondary (MacKie 1971b, 8-11; Figure 48b). MacKie argued that the entrance in the NE (a) was primary, because of its form, and the finding of a triangular lintel just outside it. He argued that the seaward or SE entrance was secondary purely on the basis of the plan made at the time of the broch's excavation (Figure 48b). The plan shows blocks of stone lining

the straight sided SE entrance and overlapping the ends of a secondary lining wall around the broch interior. MacKie took this as evidence that the SE entrance and the secondary wall were constructed at the same time. Unfortunately it is not wise to rely so heavily on old survey plans, as experience at the broch of Yarrows and Road, has shown. MacKie seems to have missed the scant report of the excavation given by Anderson, which clearly states that:

"On the sea face there has been an entrance passage through the main wall of the broch, over a sill 3 feet wide, but though the wall on both sides is gone, there are remains of the floor of the guard chamber." (Anderson 1900-1, 124).

It is not clear whether the walls of the SE entrance passage were reduced to foundation level before or after the excavation, but in any event there would appear to have been a guard cell off the passage, which is not shown on the excavation plan. (It is not known from which side of the passage the guard cell was entered. It is shown on Figure 47 as being entered from the N side, a similar arrangement to that at the neighbouring Road broch.) The existence of the guard cell would point to the SE entrance being just as primary as the entrance in the NE, about which MacKie had no doubt. If there were blocks of stone lining both walls of the SE entrance passage, they must have been secondary additions. In the arrangement of its two entrances the Harbour Mound is very similar to the neighbouring Road broch, and there is no reason to think that the two entrances at both sites are other than primary.

No real evidence has been produced for the secondary nature of either entrance at the Caithness sites where two entrances exist. At Crosskirk it was suggested in the excavation report that a secondary entrance had been opened in the area of the stair, after the primary entrance was blocked (Fairhurst 1984, 65), but no direct evidence for this conclusion was offered anywhere in the excavation report. In fact it was recorded that:

"Excavation revealed that stone robbers, forcing a way into this sector of the broch, had destroyed the whole of the stair entry except for what was probably a small remnant of its NE corner, and a threshold slab, laid 0.55m above the floor level of the broch. In this area, too, the outer wall face of the broch had been removed down to the very foundations by stone robbing." (Fairhurst 1984, 47).

In such circumstances it is difficult to envisage that there could

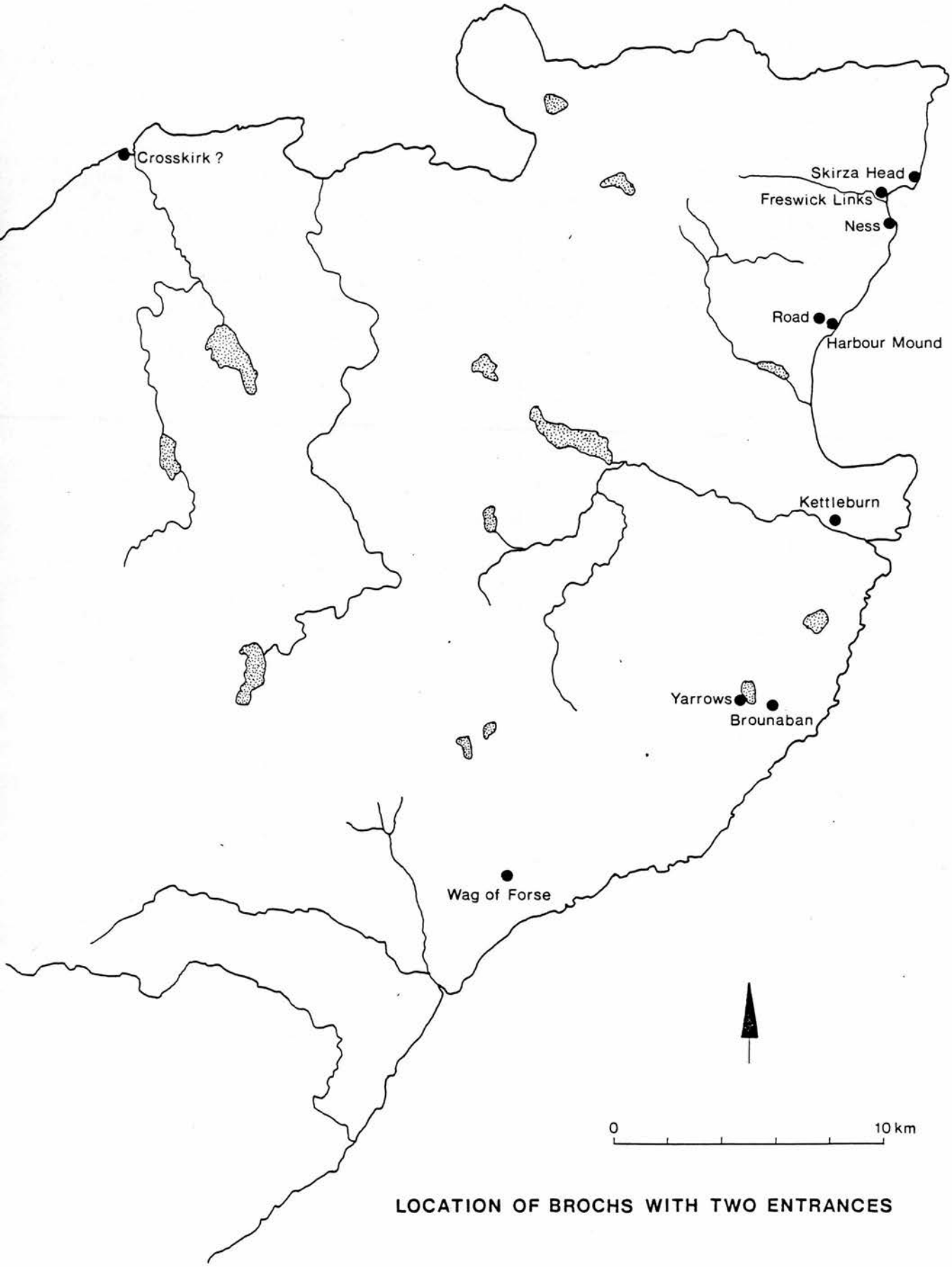
have been any direct evidence for the existence of a secondary entrance, although the blocking of the primary entrance is indirect evidence that another entrance was required. The question of a secondary entrance at Crosskirk must remain a mystery, but it is fairly clear that there could not have been an additional primary entrance in the area of the stair, because entry to it was 0.55m above the floor level in the broch. At Yarrows and Road the two entrances seem to occur at the same level in either case, although it is difficult to be certain of this because of the current state of the sites.

It seems too much of a coincidence that two entrances should occur at nine excavated brochs in Caithness, and not have been part of the original design of the broch structure. Secondary modification may be acceptable at one or two sites, but surely not at so many. There is also a certain continuity in design characteristics, in that, apart from Freswick Links, the two entrances normally occur at about 90 degrees to each other usually in the eastern half of the broch structure, and at six of the brochs a stair rises to the left on entering one of the entrances. (A stair also rises from one of the entrances at Skirza Head, but it is not known whether it is to the left or the right.) In addition all of the broch structures with two entrances occur within a particular part of Caithness which has received most attention from excavators, that is, the east coastal area to the north and south of Wick (Figure 49). In this area two entrances occur at about 50% of the sites where the structural features of the broch have been revealed by excavation.

If it is accepted that two entrances were a primary feature of some brochs in the east of Caithness, it is not all clear why more than one entrance was required, in the same way that it is not clear why two stairs were necessary in some broch structures. The occurrence of two entrances must be connected either with the use being made of the internal area of the broch, whereby free circulation was restricted; or the link between the broch and the surrounding external area, whereby more than one means of communication was needed, again perhaps because of restricted movement; or both.

If two entrances are primary features at even some Caithness broch

Figure 49



LOCATION OF BROCHS WITH TWO ENTRANCES

structures, they point to those structures being complex functioning units from the beginning, involving the interlinking of space within the broch structure with that outside it. The existence of two entrances is perhaps further corroborative evidence that there were always contemporary buildings around broch structures in Caithness. There then remains the difficult question of why only some of the excavated brochs in a particular area of Caithness have two entrances. The answer may lie in the selection of sites for excavation, poor excavation techniques, functional or chronological differences, in social differentiation or varying population sizes, or simply in individual design characteristics. There is not sufficient evidence available to select any of these answers.

8.3 The Broch Interior

Some evidence for the furnishing and arrangement of the interior of broch structures was provided by the excavation at Killimster (EC 17) in 1940, which seems to have particularly concentrated on recovering the primary floor plan in the broch structure (Figure 50); and by the excavation at Crosskirk where, unfortunately, recovery of information from the broch interior would appear to have been as problematic as the decipherment of the sequence in the surrounding buildings. The information from these excavations, added to that gained from earlier excavations, builds a confused picture, where nonetheless certain elements are constant. Table 17 (p182) lists recorded features in excavated broch interiors in Caithness.

The use of flagstone was a major feature of interior furnishings, particularly placed on end to form partitions and the sides of sunken tanks. There is little evidence for the use of wood in broch interiors. Postholes have been recorded at only three brochs, Ousedale Burn, Killimster (EC 17), and Crosskirk.

At Ousedale Burn a single post was recorded as follows:

"On the floor, embedded in firm black clay, was found a piece of wood in upright position as if it formed one of the supports for an overhanging roof: this clearly showed traces of the tree having been felled by a hatchet, each mark of the process of felling being distinctly visible." (Mackay 1891-2, 355).

There is no record of the position of the post within the floor plan, and the fact that it was embedded in "black" clay may point to it being part of a later furnishing of the broch interior.

At Killimster (EC 17) a series of six postholes were found in the N half of the broch interior forming a polygonal shape (Figure 50). One of the postholes was set into the infilling of an angle of a sunken tank (P), whilst three were found under an upper level of paving (Calder 1947-8, 135). On this basis the postholes, if they were all contemporary, would appear to have been in use during only one of several phases in the broch interior, and may postdate the first use of the interior.

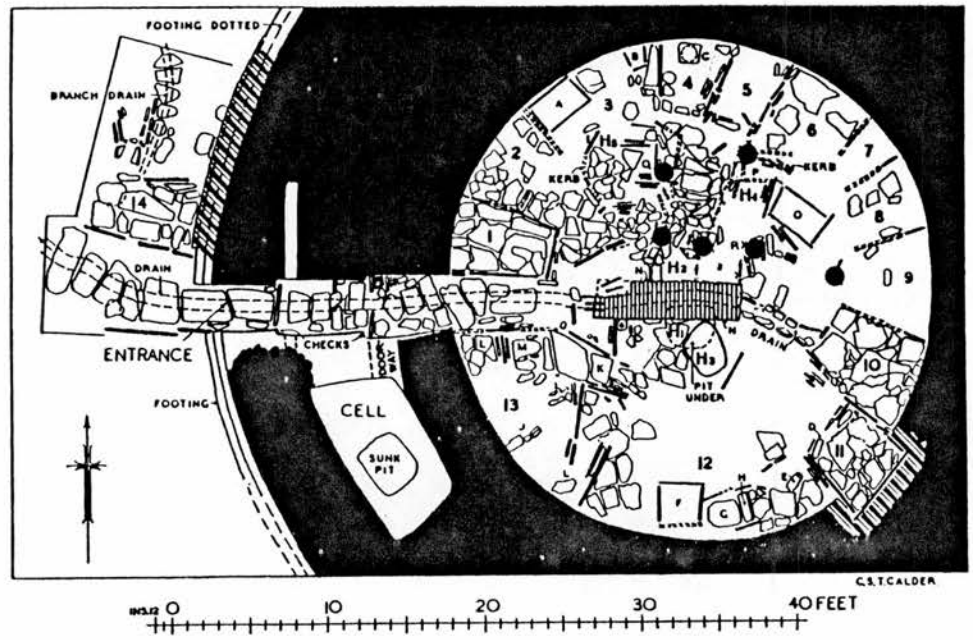
At Crosskirk no postholes were found in the Phase One floor of the broch which had been extensively levelled (Figure 51a). Fairhurst suggested that there might have been evidence for postholes in the Phase Two floor (Figure 51b) as follows:

"Throughout the excavation of the Phase Two deposits a very close watch was kept for sockets of postholes. Amid the confusion which resulted from repaving, the insertion of tanks and drains, and the remnants of packing stones which belonged in reality to the primary phase, attention was drawn from time to time to a number of very ambiguous groupings of stones on end. None seemed significant individually, but a record was kept of the least improbable. Several were located at the foot of the broch wall, and in the end without having any conscious pattern in mind five examples were found to enclose an area 1.5m across, around the two slab lined tanks and the boulder where some evidence of burning had occurred. An inner ring of posts must be regarded as a possibility, especially as any man-made slots in the broch wall seem to have belonged to this phase." (Fairhurst 1984, 66).

This description of five possible postholes at Crosskirk is couched in such indefinite language, that some dubiety must exist about their certain identification. The dubiety is further compounded by the plan of the Phase Two floor (Fairhurst 1984, ill 31; Figure 51b), which does not highlight the supposed five postholes, or any of the other "ambiguous" groupings of stones.

The evidence for the use of wooden posts in broch interiors in Caithness is scant, and there is certainly no clear evidence of a ring of posts to support either an upper wooden floor or a roof. It could be argued that the standard of excavation of Caithness brochs has been so poor that this evidence has simply not been recovered. There is a significant counter-argument to this however, in that

Interior of Broch of Killimster (Skitten)
Source: Calder 1947-8, 128



● posthole

Figure 50

Interior of the Broch of Crosskirk
Source: Fairhurst 1984, 61 and 64

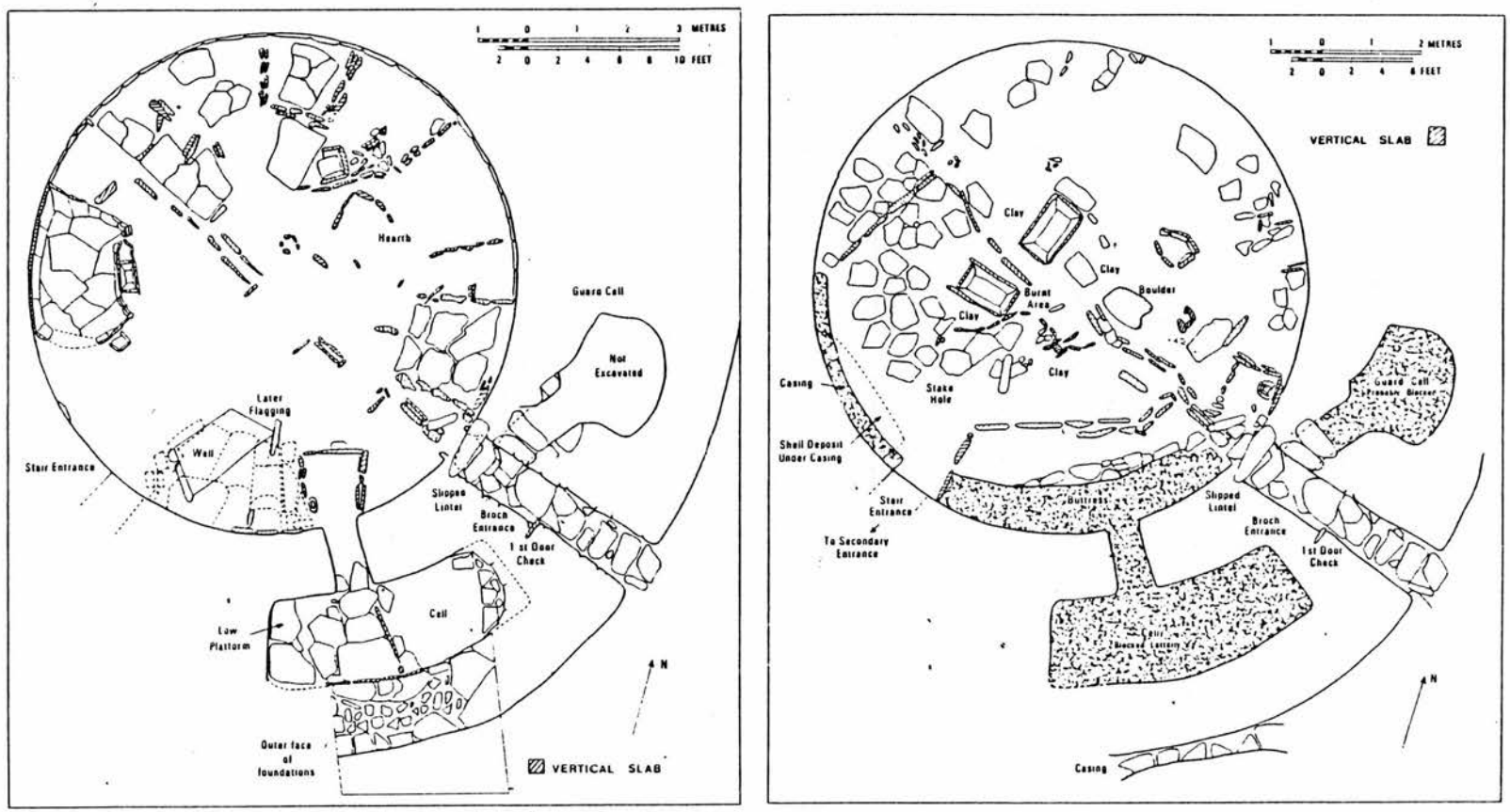


Figure 51 (a) Phase 1 (b) Phase 2

Broch of Yarrows

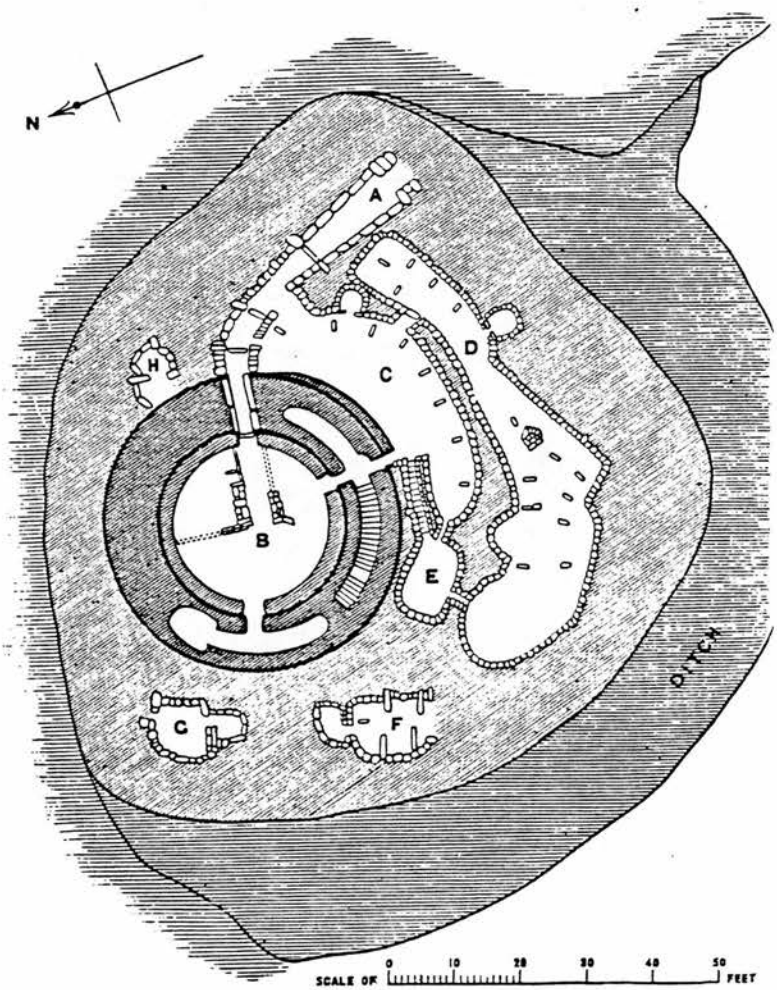
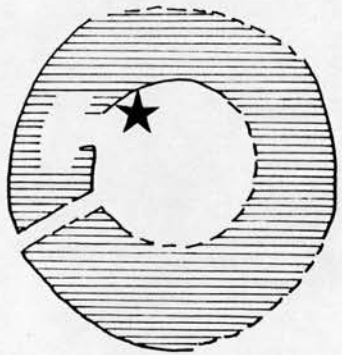


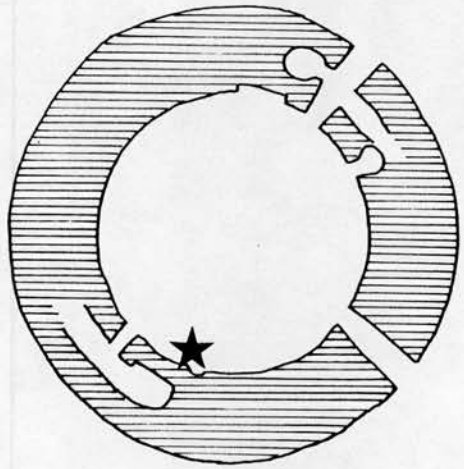
FIG. 37.— Broch, Yarrows (No. 509).

Source: Anderson 1883, 224

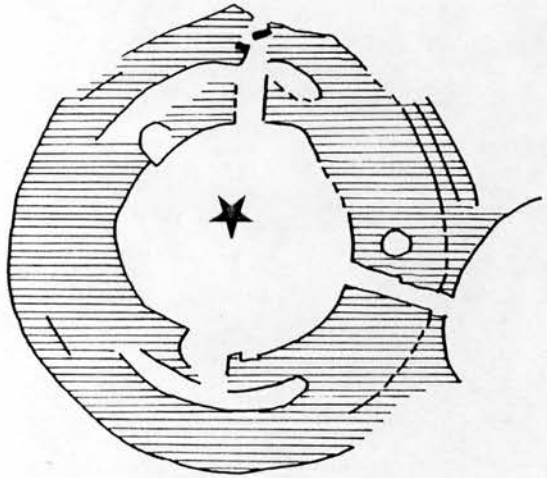
Crosskirk



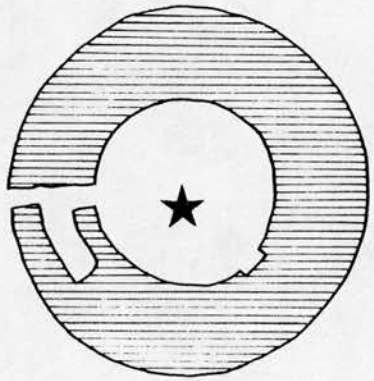
Hill o'Works



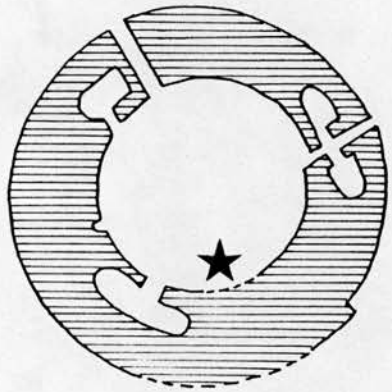
Harbour Mound, Keiss



Road, Keiss



Killimster



Kettleburn

RECORDED LOCATIONS OF ROCK CUT PITS IN BROCH INTERIORS

not to common scale

Figure 53

palaeo-environmental evidence points to it being unlikely that there was a ready supply of suitable constructional timber in most of the Caithness Plain at the time brochs were occupied (see Chapter 5). (There may however have been a supply of such timber in the sheltered river valleys in the southern part of the District close to the Sutherland border, where the broch of Ousedale Burn is located.) If constructional timber was used in brochs in the Caithness Plain, it must either have been imported from the south of the District or from Sutherland, or have been obtained as driftwood or bogwood (Dickson and Dickson in Fairhurst 1984, 150). The evidence would seem rather to point in a completely different direction, that is, to a heavy reliance on flagstone, a readily available local material, for the design and manipulation of the internal space within the broch structure.

There is evidence from several excavated sites for the use of upright flagstones to divide the floor area of the broch. The small upright stones used to wedge such flagstones in place can be seen, for example, at Road (EC 10) and Whitegate (EC 11). At some sites, such as Yarrows, the partitions revealed by excavation, were clearly secondary in nature, founded on an accumulation of occupation debris in the broch interior. Anderson recorded in fact that partition walls were met with at three different levels at Yarrows, dividing the internal area on three different plans (Anderson 1883, 229). The plan made at the time of excavation shows only one of these phases (Figure 52), and there is no record that any of the partitioning belonged to the primary phase of broch use. Partitioning in the broch interior came traditionally to be regarded as a secondary feature, in much the same way as the surrounding buildings.

Only two broch excavations in Caithness have produced any detailed evidence for the primary layout of the broch interior. At Killimster (EC 17) there were 13 compartments formed by flagstones, disposed radially around the inner face of the broch wall (Figure 50). The excavator thought that the partitions had been inserted after the broch had been constructed, but that no great time had elapsed between the building of the broch wall and the construction of the compartments, as there was no measurable thickness of occupation

debris below the paved floors of the compartments which seemed to sit on top of natural clay (Calder 1947-8, 133).

At Crosskirk Fairhurst noted that the broch floor had been reorganised from time to time, making it difficult to establish the original arrangement with any precision, but that partitioning had existed from the beginning of occupation of the interior. The upright slabs had not survived, but packing stones were in place. Fairhurst suggested that the original divisions of the floor space (Phase One; Figure 51a) had consisted of radial bays at least in the N half of the broch, with an apparent continuous partition dividing the floor on a diameter from NW to SE (Fairhurst 1984, 60-1). It is noticeable that this bisecting partition approaches so close to the entrance to the broch that it would have partially obstructed it. For this reason, and the difficulties admitted by the excavator in disentangling phases in the broch interior (Fairhurst 1984, 67), it must be doubted whether the bisecting partition was in fact part of the Phase One furnishing of the broch interior as suggested by Fairhurst. It is perhaps more likely that it should be associated with a later phase, possibly Phase Three, when the entrance to the broch was apparently blocked, and a possible new entrance opened at the stair foot. It is by no means clear from the excavation report that the detailed layout of the floor in each phase was properly disentangled, or indeed that all of the possible phases were in fact identified. The best conclusions that can be drawn are that there were radial partitions during an early phase in the use of the Crosskirk broch, and the floor area was rearranged a number of times as the broch continued in use.

Hearths and rock-cut pits have been common features noted in the excavation of broch interiors in Caithness. Hearths have been recorded at several levels in broch interiors, for example at the broch of Killimster (EC 17) (Calder 1947-8, 134-5), but they have not always occurred in the same position within the floor space. The traditional understanding of a broch assumes the presence of a central hearth in the primary phase of broch use. At Crosskirk the hearth lay in the N half of the broch floor in what was identified as the primary phase (Phase One; Figure 51a) (Fairhurst 1984, 60). At Killimster a central hearth was found, but it partly overlay a deep rock-cut pit, which lay

in a slightly off-centre position in relation to the floor, and which must have been earlier than the hearth (Calder 1947-8, 135). If the rock-cut pit related to the earliest use of the broch interior, there clearly could not have been a central hearth in use at the same time. Altogether five hearths were found within the broch interior at Killimster, but all would appear to be associated with later phases of broch use. No hearth, which might be related to a primary phase of broch use, was found.

Rock-cut pits have been found in the interior of seven Caithness brochs (Figure 53; Rhind 1853, 215 (Kettleburn); Anderson 1890, 145 (Dunbeath); RCAHMS 1911b, 154-5, no 515 (Harbour Mound); 157-8, no 517 (Road); 1-2, no 3 (Hill o'Works); Calder 1947-8, 135 (Killimster); Fairhurst 1984, 58 (Crosskirk)). The position of the pits within the floor area has varied. At Killimster (EC 17) and Road (EC 10) the rock cut pit was situated in the middle of the floor, whereas within the other brochs it was located close to the broch wall, usually in the S half of the interior. The pit at Kettleburn (EC 21) was 2.7m deep, at Road (EC 10) it was 1.7m deep, at the Harbour Mound (EC 12) it was 1.8m deep, and at Crosskirk it was 2.15m deep. The pits at Road, Harbour Mound, Hill o'Works (EC 13), Kettleburn, and Crosskirk are described as having steps for access to them. There were three steps at Crosskirk, cut into the top part of the pit. It would appear that the pits at Road and the Harbour Mound may have had a similar arrangement of steps leading only part of the way down. The simplest explanation for the partial provision of steps is that they were leading down to stop at something filling the pit. Water seems the most obvious possibilty, and the pits should perhaps be seen as cisterns or wells. Most of the pits were found to be dry when excavated, but it should be remembered that the natural drainage and water table in Caithness have been altered substantially over the last two centuries (see Chapter 5).

8.4 Chronology

A long sequence of occupation in some Caithness broch interiors would seem to be indicated by the scant records of the excavations. At Yarrows Anderson reported an accumulation of 8 feet (2.4m) of "stones

and rubbish" before the final partitioning of the interior took place (1883, 229). At Ousedale Burn there was 4 feet (1.2m) of occupation debris above the primary floor of the broch, upon which secondary partitioning was founded (Mackay 1891-2, 354). At the Harbour Mound (EC 12) there were three successive floors in the broch interior, each with an accumulated midden above it, of which the lowest amounted to 5 feet (1.5m) in depth, and the middle 1 foot 6 inches (0.4m) (Laing 1866, 24-5).

At Crosskirk three phases of occupation in the interior were recognised, although there was no obvious break in continuity between them. The radio-carbon dates obtained for the broch interior were as follows (Figure 43):

SRR-266 Detritus under Phase One floor	2380±50	760 BC - 380 BC
SRR-272 Phase Two occupation deposit	2050±50	340 BC - AD 60
SRR-267 Charcoal from Phase Three hearth	1880±70	AD 5 - AD 340

(Calendar age range at 95% confidence level proposed by Harkness) (Harkness in Fairhurst 1984, 160-3).

Fairhurst sought to reject the early date from beneath the Phase One floor (SRR-266), suggesting that it came from the ground surface on which the broch was built (1984, 165). He noted however that the broch had been in use some considerable time before Phase Three in which samian sherds were found (1984, 164). The radiocarbon date for Phase Three (SRR-267) matches well with the Antonine date of the samian sherds. Fairhurst also sought to reject continuous use of the broch between Phase Two, which the radiocarbon dates place around the second century BC, and Phase Three which the Antonine finds place at least in the second century AD. He did not think that the broch could have been occupied for a period of two hundred and fifty years or more without a major change of function and internal appearance. He therefore chose to infer that a break in occupation must have taken place before Phase Three, despite the fact that no evidence of this was found (Fairhurst 1984, 67).

Fairhurst's interpretation of the radio-carbon dates from Crosskirk seems unduly restricted by a desire not to stray too far from the bounds of the traditional understanding of brochs. It is also clear

that interpretation of the sequence in the broch interior was an extremely difficult problem:

"It is abundantly necessary to emphasise the absence of distinct horizons together with the confusion which was actually observed, amid the chaos of disturbed earth floors and projecting stone slabs, poor paving, and ruinous tanks. These formed the evidence from which deductions had to be made." (Fairhurst 1984, 67).

The radio-carbon dates for Crosskirk as a whole, including those from the external settlement (see Chapter 7), point to the possibility of a major period of occupation activity on the site spanning about five centuries from as early as 300 BC or earlier to about 150 AD (Figure 43). The date for the construction of the broch was given by Fairhurst as around 200 BC (1984, 166). This is an estimate only, as the earliest radio-carbon date from a secure broch structure context, was from a Phase Two occupation deposit (SRR-272), and covers the calendar age range 340 BC to AD 60 (with 95 % confidence) (Harkness in Fairhurst 1984, 163). The date of the foundation of the broch structure could in fact have been any time after the radio-carbon date for the organic detritus found under the primary broch floor (SRR-266), with a calendar age range of 760 BC to 380 BC (with 95% confidence) (Harkness in Fairhurst 1984, 163). It is conceivable that the broch structure was founded sometime well before 200 BC. There is unfortunately no other dating evidence for a Caithness broch structure to compare with the dates for Crosskirk.

8.5 Problems of Function

The function of the broch structure in Caithness is by no means obvious. The traditional view is that the broch structure was designed to be a defensive refuge. It is clear that in total site design defence was an important consideration, as evidenced by the existence at several sites of substantial walls and/or ditches around the full complex of broch structure and surrounding buildings. The broch structure however may not have been primarily or exclusively intended for defence, and the presence of two entrances to some broch structures may perhaps confirm this view. The existence of two entrances would seem to make a structure designed with defence in mind unnecessarily vulnerable.

Current archaeological thought is that the broch was designed for permanent occupation, and should be viewed as a house (Fairhurst 1984, 63; Hedges 1985; Hedges 1987, Part III, 11-2).

"In both halves of the broch, the dark carbonised earth both on and between the flagstones contained quantities of domestic refuse including querns, spindle whorls, bronze objects, discarded bone tools and pottery. All suggest regular occupation rather than retreat in times of danger from dwellings elsewhere. The presence of a restricted number of bays would point to occupation by a single family, perhaps an extended one..." (Fairhurst 1984, 63).

If the broch structure in Caithness is to be viewed as nothing more than a house however, there are two outstanding questions for which there are no real answers at the moment.

1) Why was the broch structure so markedly different in design from the surrounding buildings, which would appear to have been mainly houses in contemporary use?
2) If the broch structure was in permanent occupation, how was it roofed in an area where there was a scarcity of suitable constructional timber? This seems less of a problem to solve in the smaller surrounding buildings.

The clues to understanding the function of the broch structure in Caithness have to lie in recognising that it formed only part of a more complex organism, which functioned within a contemporary land use and settlement pattern. The broch structure was clearly an integral part of a much larger functioning unit, identified in Chapter 5 as the farming settlement of its time. The exact function of the broch structure within that larger unit has not been clearly established in Caithness, as there is insufficient evidence available for the furnishings and arrangements of broch interiors. There has to have been some reason however why the broch structure differed so markedly in design from its surrounding buildings, whether that reason lies in defensive requirements, social stratification, or some particular function other than a domestic one.

This chapter has sought to demonstrate that broch structures in Caithness do not match well the traditional understanding of such structures. There is no evidence that Caithness brochs were ever high-walled towers reaching Mousa-like proportions. On the contrary

there is some evidence that broch walls in Caithness were complex and unstable and may only have stood 4-6m high. Caithness broch structures were clearly not built, occupied, and abandoned all in the space of a couple of centuries. Sufficient time elapsed for a considerable depth of archaeological stratigraphy to accumulate, and the broch at Crosskirk was in use for at least three to four centuries, possibly from before 200 BC to about 150 AD. There is evidence that the broch structures did not stand alone for most, if not all, of the period of their use, and that many had contemporary buildings around them. The occurrence of two entrances to some Caithness broch structures points to the possibility that the space inside the broch was linked in a functioning system to that in the surrounding buildings outside the broch.

The excavation evidence for Caithness does not allow satisfactory conclusions to be drawn about the particular function(s) of the broch structure within the full broch complex. The full complex would appear to be a domestic settlement, but the broch structure cannot be satisfactorily explained as being simply one of the houses in the settlement. It is too markedly different from the other structures in the complex which would appear to have fulfilled that function. There is a pressing need for further careful excavation in Caithness to establish more exactly the arrangements over time of the internal space of broch structures, and the relationships chronologically and functionally between the space inside the broch structure and the space outside it.

Table 15 Caithness: Surviving Wall Heights of Excavated Brochs

Site	Wall Height	Comments
Thrumster	3ft 6in (1.1m)	Inner and outer faces
Achvarasdal Lodge	5ft 3in (1.6m)	Inner face part rebuilt
Dunbeath	13ft (4.0m)	Inner face
Yarrows	15ft (4.6m)	Inner face
Brounaban	5ft (1.5m)	Rebuilt
Ousedale Burn	14ft (4.3m)	Inner face
Wester	5ft 6in (1.7m)	Inner face
Harbour Mound	5ft 6in (1.7m)	Outer face
White Gate	3ft (0.9m)	Inner face
Road	7ft (2.1m)	Inner face
Nybster	5ft 3in (1.6m)	Inner and outer faces
Skirza Head	5ft (1.5m)	Inner face
Freswick Links	7ft (2.1m)	Greater part of wall
Ness	1ft (0.3m)	Inner face
Hill o'Works	4ft (1.2m)	Inner face
Hillhead	9ft (2.7m)	Inner face
Cairn of Elsay	9ft (2.7m)	Inner face
Norwall	3ft 8in (1.1m)	Inner face, base hidden
Bail a'Charn	10ft (3.0m)	Inner face
Killimster	6ft (1.8m)	Outer face
Carn na Mairg	>7ft (2.0m)	Part revealed outer face
Crosskirk	10ft (3.0m)	Inner face

Sources: RCAHMS 1911b
Calder 1947-8
Fairhurst 1984

Table 16 Caithness: Structural Features Exposed at Excavated Brochs

Site	Single Entrance	Two Entrances	Single Stair	Two Stairs	Single Guard Cell	Double Guard Cells	Other Cell(s)	Integral Scarcement
Thrumster	x							
Thrumster Little	x						x	
Kettleburn		x				x	x	
Achvarasdal Lodge	x		x		x			
Dunbeath	x				x		x	x
Yarrows		x	x				x	
Brounaban		x		x			x	
Thing's Va	x				x			
Ousedale Burn	x		x		x		x	
Wester	x		x					
Harbour Mound		x		x	x			
Whitegate	x							
Road		x		x	x			
Nybster	x							
Skirza Head		x	x					
Freswick Links		x	x				x	
Ness		x			x			
Everley	x							
Hill o'Works	x						x	
Hillhead	x		x			x	x	
Cairn of Elsay	x		x				x	
Norwall	x		x					
Bail a'Charn	x			x				
Cogle	x		x					
Burg Langwell			x				x	
Killimster	x				x			
Crosskirk	x		x		x		x	
Wag of Forse		x	x				x	

Sources: Rhind 1853; Anderson 1890; RCAHMS 1911b; Curle 1945-6; Calder 1947-8; Fairhurst 1984; Mercer 1985; Nicolson Collection; Site Catalogue

Table 17 Caithness: Features in the Broch Interior

Site	Int. Dia.	Post Holes	Pit/ Well	Drain	Hearth	Paving	Partitions (Radial)		Sunken Tanks
Thrumster	10.9m								
Kettleburn	9.7m		x	x					
Achvarasdal Lodge	10.0m								
Dunbeath	8.4m		x						
Yarrows	9.9m						x		
Brounaban	8.6m			x	x	x			
Old Stirkoke	9.1m			x	x				
Bowermadden	9.1m		x						
Ousedale Burn	7.3m	x		x	x				x
Wester	8.2m								
Harbour Mound	11.5m		x	x					
Whitegate	8.0m						x	x	
Road	10.2m		x				x		x
Nybster	6.5m			x					x
Skirza Head	6.6m				x				x
Freswick Links	9.9m						x		
Ness	7.0m						x		x
Everley	8.8m					x			
Hill o'Works	8.6m		x				x	x	
Hillhead	9.1m				x				x
Cairn of Elsay	8.8m						x	x	
Norwall	7.9m							x	
Bail a'Charn	9.1m							x	
Cogle	8.8m				x		x	x	
Killimster	9.9m	x	x	x	x	x		x	x
Crosskirk	9.8m	x	x	x	x	x	x	x	x

Sources: Rhind 1853; Anderson 1883; Anderson 1890; Anderson 1900-1; RCAHMS 1911b; Calder 1947-8; Fairhurst 1984; Site Catalogue;
Tress Barry 1903? (unpublished notes on Hillhead Broch in Nicolson Collection)

CHAPTER 9 CONCLUDING CONSIDERATIONS

The aim of Part Two of this thesis has been to assess as far as possible the true nature of the archaeological sites called brochs in Caithness. A number of conclusions about that nature have been drawn in the preceding five chapters. This final chapter of Part Two brings together and summarises the various conclusions (section 9.1 below); assesses the major implications raised by the conclusions for approaches to the study and further understanding of brochs (section 9.2); and proposes a strategy for further research on brochs in Caithness (section 9.3).

9.1 Summary Conclusions

(1) Brochs in Caithness have had a low profile in broch studies. Until recently there has been little survey work, and the excavation record is old and poor. Even the most recent broch excavation at Crosskirk was problematic, and the report of the excavation is less than satisfactory. (The excavation is reviewed in detail in Appendix 3.) It is difficult to envisage how theories purporting to refer to brochs in general can have been developed, whilst there has been such a dearth of evidence from the main area of broch occurrence.

(2) A potential population of brochs in the Caithness Plain well in excess of traditional estimates is indicated. There would appear to be 110 certain brochs and 87 potential brochs, giving a total of 197, an increase of 30% over the traditional estimate of 145. This total may still be an under-estimate, as a large number of vaguely recorded destructions and a number of gaps in broch distribution point to the possibility that some brochs may have disappeared with no record of their passing. There is no direct evidence of contemporary sites of types other than brochs, although there are some sites classed as forts and promontory forts.

(3) The landscape of Caithness has been drastically altered in the last two hundred years, so that the relationship betwen brochs and the land has been effectively severed. There has been a large increase in the area of arable land by reclamation from peat, and the natural drainage system has been extensively altered.

(4) The formation of blanket peat began in Caithness possibly as early as 6000 BC, and most of the cultivated soils in the District retain evidence of having been broken in from a treeless peaty moorland. The line of the peat/arable interface appears to have oscillated over time, and it is not clear where it was located at the time brochs were occupied. In some areas the peat has been pushed back by reclamation. In other areas peat seems to have readvanced close to the limits of broch distribution.

(5) The distribution of brochs correlates fairly well with an estimate of the extent of pre-eighteenth century arable land. There can be no doubt that brochs had a significant relationship with land suitable for arable cultivation, but the distribution pattern of sites is far from even. Brochs on average occur in the Caithness Plain at a rate of one every square mile (1.6 sq km) of modern arable land, if all potential sites are taken into account, but there are a number of distinct clusters. For instance there are three brochs within one square mile at Keiss. The close spacing of brochs in some areas may point to pressure on available arable land. There is a sense of regular land division in some areas, particularly along the river valleys, but it is premature to estimate size of land divisions or contemporary carrying capacities, when there is so much uncertainty about the exact number of broch sites and the extent of contemporary arable land.

(6) The environmental evidence points to brochs being the farming settlements of their time, gaining a living from the land by means of a mixed agricultural system. There have to have been field systems around brochs, simply to keep the animals out of the crops. These have not survived the agricultural improvements of the last two hundred years, but it may still be possible to find some evidence of their former existence.

(7) Brochs in Caithness frequently appear as grass covered mounds, which can be difficult to identify with certainty. The mounds are however by no means featureless, and much can be learned from a survey and assessment of the mounds in the field. Many of the mounds have been damaged, and the very large extent of some is effectively hidden by later land use changes.

(8) Brochs in Caithness are not the single, isolated buildings portrayed in the traditional understanding of the typical broch. In general the broch mounds appear to contain a fairly consistent set of components. These are from the outside: outworks (ditch and/or enclosing wall), surrounding buildings, and the broch structure. It is suggested that the outworks were designed to be defensive, and were in contemporary use with the broch. A broch in Caithness appears to have been a much larger and more complex functioning unit than the traditional understanding of a broch has allowed.

(9) Many of the mounds display a stepped profile, suggesting that the broch structure may be sitting on a depth of preceding debris within the mound. There is no clear evidence for preceding occupation at any excavated Caithness broch site, but the field evidence may point to the possibility that some broch mounds contain a stratigraphy preceding the construction of the broch. There is insufficient field evidence at present to identify these sites, but such an identification would be useful in understanding continuity and change in settlement pattern in Caithness.

(10) The surrounding buildings at broch sites in Caithness would appear to have had a domestic function. There is some evidence that the buildings may not have been built entirely of stone and that sods may have been used in the construction of walls and roofs, accounting to some extent for the apparent presence of quantities of earth in broch mounds. In the absence of suitable constructional timbers upright flagstones may have been employed to support roofs.

(11) A lengthy sequence of buildings around broch structures in Caithness is indicated by the evidence from several sites. The date range of the sequence has not been firmly established, but it may cover the first three centuries BC up to the Pictish period. It has also not been established that broch structures in Caithness had buildings around them from their first period of use, although the two elements would appear to have been in contemporary use throughout most of the history of individual sites.

(12) The existence of surrounding buildings is further confirmation that brochs were much larger functioning units than the traditional

understanding has allowed. The apparent domestic function of the surrounding buildings is in keeping with the conclusion drawn from the environmental evidence, that brochs were the settlements of their time. The lengthy sequence of surrounding buildings indicated at a number of sites points to a stable settlement pattern over several centuries.

(13) The evidence for broch structures in Caithness does not match well with the traditional understanding of such structures. There is evidence that some broch walls in the District were complex and unstable, and there is little evidence to suggest that the walls of excavated brochs ever rose very high. A number of broch structures have two entrances, possible further confirmation that these brochs were part of a much wider site design. The occurrence of two entrances is distinctly biased to the east coast of Caithness, but this may be a reflection only of a bias in the selection of sites for excavation, rather than a true sub-regional differentiation within the District.

(14) Caithness broch structures were clearly not built, occupied and abandoned in the space of two to three centuries. A considerable depth of stratigraphy was found within the interior of the broch structure at a number of excavated sites, and the broch of Crosskirk appears to have been occupied for at least three to four centuries.

(15) The excavation evidence from Caithness does not allow satisfactory conclusions to be drawn about the particular function(s) of the broch structure within the wider broch complex. The wider complex would appear to be a domestic settlement engaged in working the land, but the role of the broch structure within the settlement is not obvious. It has been suggested that the broch was simply another house, but it is markedly different from the surrounding buildings which would appear to have fulfilled that particular function. The reasons for the difference may lie in defensive requirements, social stratification, or some particular function other than a domestic one, which has yet to be identified. The function of the broch structure may also have varied over time.

9.2 Implications

The perception of a broch in Caithness has been expanded in two dimensions. In areal terms the broch structure has been demonstrated to be only one part of a much larger archaeological complex, which in its turn fits into a wider settlement and land use pattern. In chronological terms the evidence points to the full broch complex extending over a much wider date range than has been accepted for brochs in the past, with hints of possible preceding and succeeding stratigraphy.

This expansion of perception is a beginning to the process of placing the broch in context. The broch structure for too long has been examined in isolation, with a consequent loss of highly relevant detail, hindering and distorting attempts to understand its true nature. For example, the realisation that there are so many brochs in the Caithness Plain, in a fairly dense distribution pattern, makes nonsense of the claim that brochs were the ostentatious dwellings of chieftains (Graham 1946-7, 87), a conclusion arrived at solely by a consideration of architectural details.

Graham's claim is a reminder that there are many more aspects of context other than the areal and chronological ones considered in Part Two. Socio-political and economic contexts are much more intangible concepts, and can only begin to be explored after full consideration has been given to more tangible contextual aspects, such as, agricultural systems, material culture, land divisions, and changes in settlement pattern and land use over time. Too often broch studies have leapt from detailed consideration of one aspect of brochs (usually structural details) to sweeping generalisations about the socio-political status of broch builders. The drawing of conclusions about such abstract concepts really should be resisted until much more groundwork has been done on brochs in their tangible contexts.

Even in terms of the traditional approach to the study of brochs, that is, an examination of the architectural details of the broch structure, the perception of a broch in Caithness has been amended. The traditional approach to the study of brochs has been based on a very clear image of the structural details of a typical broch. Brochs

in Caithness have been shown not to match this image in a number of ways. The most significant aspect of this change in perception is the amendment of the concept that all brochs were magnificent, architecturally sophisticated structures (Graham 1946-7, 87; MacKie 1983, 118). Brochs in Caithness were far from magnificent and sophisticated. Serious structural failure is attested by the evidence for buttressing, sometimes more than once, at several sites. Some structures were complex, containing for example two stairs and entrances, but it may be that this very complexity added to the structural stresses. Other structures appear not to have been complex at all, with no evidence of cells, galleries, or stairs in their surviving wall heights. The broch of Crosskirk confounds totally the notion of magnificence and sophistication in building by the inclusion within its wall width of all kinds of domestic rubbish between thin stone facings.

Faced with this last contradictory detail, the main proponent of the sophisticated broch structure has declared that Crosskirk cannot be a broch at all, but must be a low walled dun or fortified roundhouse (MacKie 1983, 125). The challenge to the classification of Crosskirk opens the prospect of most of the "brochs" in Caithness and Orkney being declared no longer brochs, and the word being confined to a few structures mainly on the periphery of broch distribution, particularly on the west coast. This would be a distortion of reality, particularly as the word broch derives from Norse, and should at the very least belong with the sites in the core of broch distribution in Caithness and Orkney. It seems much more sensible to reconsider the whole question of classification, and its links with archaeological analysis and interpretation, as proposed by Barrett (1981). Classification should be a flexible tool for assisting in archaeological research, not a means of forcing interpretation down pre-determined paths. There is now a pressing need, as MacKie has recognised, for a reconsideration of classification and terminology in respect of brochs, a view also held by Hedges (pers. comm.). Classification, terminology, and approaches to the study of brochs are considered further in Part Six, in the light of the results of the full research for this thesis.

9.3 Further Research

It should be clear from the findings in Chapters 4 to 8 that intensive study within a sub-regional area reveals a wealth of detail, and is of more value in seeking to understand brochs, than a synthesis involving only one aspect, such as architectural details, across the full population in Atlantic Scotland. Further research should continue to be based on intensive study in sub-regional areas, such as, the Caithness Plain, involving a consideration not only of the sites in their contemporary physical setting, but also the sites as part of the continuum of settlement and land use over time in the one area. Understanding brochs need not come from the study of broch structures in their primary period of use only. Broch structures in both Caithness and Orkney would appear to have long histories of use on individual sites, with the function of the broch possibly changing over that period. In addition broch sites may have been occupied before brochs began to be built, and after they went out of use. Knowledge of both preceding and succeeding settlement patterns, particularly the Picto-Norse interface, are likely to be as valuable in explaining brochs, as intensive study of the primary phase of broch use. A programme for further research on brochs in Caithness should aim to learn as much as possible about the full history of settlement and land use in the area. Brochs will then have been firmly fixed in at least one context, and a better understanding of their nature and function may be more easily achieved.

Various suggestions for further research on brochs in Caithness have been made at several points in the preceding five chapters, stressing a need for an interdisciplinary approach, with specialist inputs. A strategy for further research on brochs in Caithness might be as follows.

Field Survey

(1) Completion of the detailed field analysis of broch sites, begun in the three study areas, including levelling of broch mounds to assist in the prediction of the likelihood of preceding stratigraphy being present in the mound.

(2) A search for missing sites based on the gaps in distribution noted in Chapter 5, by intensive ground survey and by reference to historical sources.

Palaeo-Environmental Analysis

(3) An attempt to identify the detailed location of the peat/arable interface at various stages in the past, particularly the broch period.

(4) Detailed geomorphological analysis of individual broch locations to identify local topography and the natural system of drainage.

(5) An attempt to identify field systems around brochs by appropriate means at suitable sites.

Selective Excavation

(6) Investigation of the surrounding buildings at a number of selected sites (probably already excavated sites), with a view to establishing dates for the top and bottom of the sequence, and details of the construction and function of the surrounding buildings.

(7) A re-examination of selected broch interiors at excavated sites with a view to establishing whether undisturbed primary floor plans may still exist.

(8) An examination of outworks at selected sites, particularly the form and existence of ditches.

(9) An investigation, if possible, of preceding stratigraphy at a selected site or sites.

Other Relevant Research

(10) Research into the settlement and land holding patterns of later periods, particularly the Picto-Norse interface, with a view to comparisons with the broch period.

(11) An assessment of the material culture of the broch period, by an examination of the artefacts from broch sites.

(12) A search for contemporary sites of types other than brochs, including investigation of forts, promontory forts, and wag type

settlements.

It is likely that major advances in knowledge on brochs in Caithness, and for that matter elsewhere, will have to come from non-destructive research techniques, such as field survey, for the foreseeable future (a view shared by Beverley Smith). Excavation is expensive, and following the recent total excavation at Howe in Orkney, it is not likely that another major excavation of a broch mound will take place in the north for some considerable time. The strategy for further research detailed above, includes some suggestions for selective excavation, mainly on sites already largely destroyed by antiquarian digging. Some of these sites, such as Road broch (EC 10), still preserve a considerable depth of undisturbed stratigraphy in the surrounding buildings, and can supply some valuable new information, obviating the need to excavate at wholly undisturbed sites. It is not known how useful selective excavation of disturbed sites may be, as it is clear from the excavations at both Crosskirk and Howe, that broch mounds have an extremely complex stratigraphy, which will probably make the interpretation of results from keyhole excavations very difficult. It may still nonetheless be possible to recover useful information from selective excavation in Caithness, provided the objectives of such excavation are strictly limited, and the sites for excavation are carefully chosen.

PART THREE

CHAPTER 10 INTRODUCTION

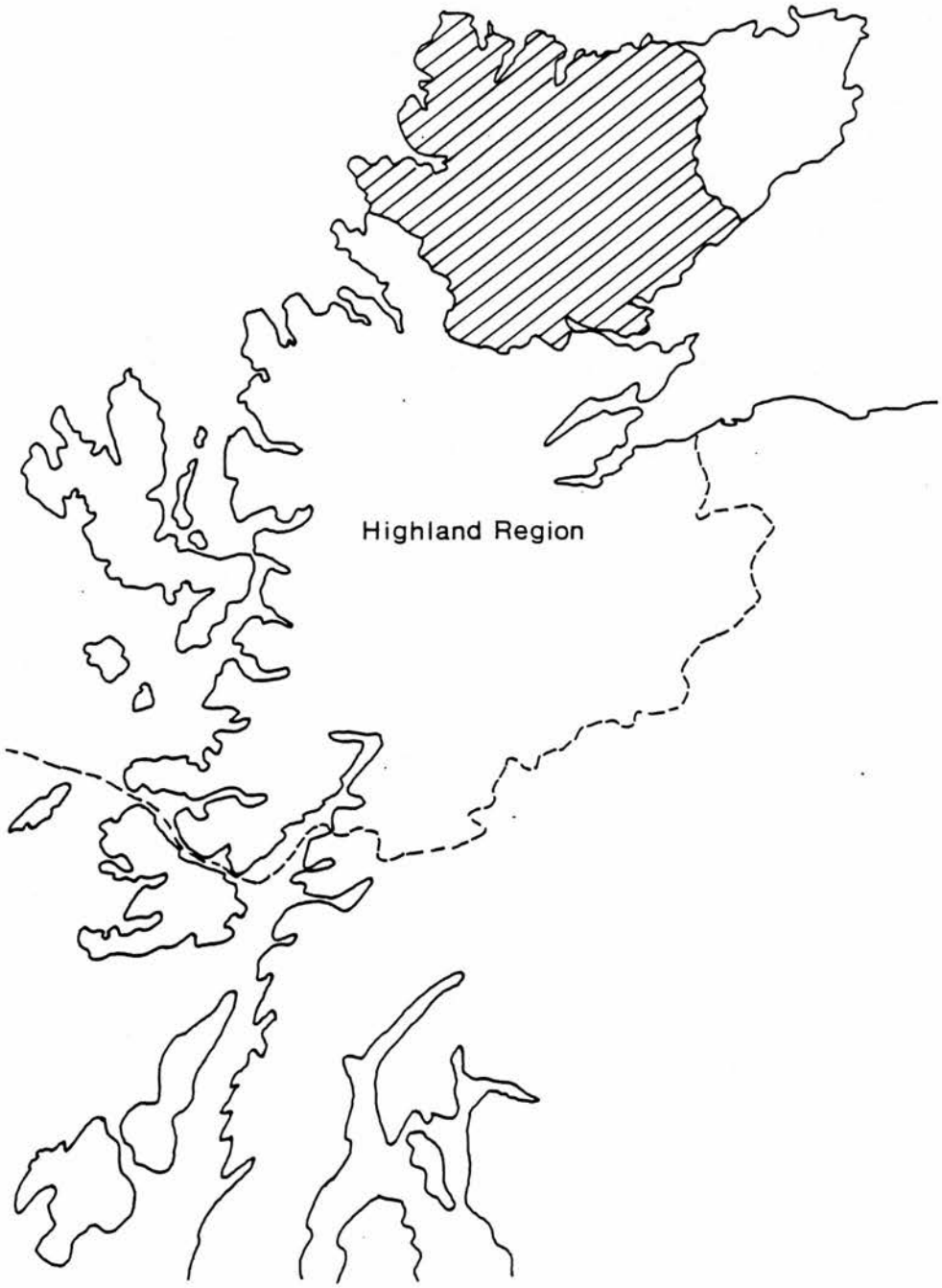
Part Three of this thesis is concerned with an examination of brochs in Sutherland. Sutherland lies adjacent to Caithness District in Highland Region, with a coastline on the north, west and east (Figure 54). It is a District of contrasting environments, with a narrow fertile east coastal plain similar to neighbouring Caithness to the north and Ross to the south, but inland, a large area of high peat covered plateau, deeply dissected by fertile river valleys or straths. The topography of the District, and its implications for settlement pattern, is considered more fully in Chapter 11.

Brochs in Sutherland have not figured highly in the history of broch studies. Section 10.1 below discusses the little attention which has been paid to brochs in Sutherland in the past, and section 10.2 examines the consequent gaps and biases in the information sources. Section 10.3 assesses the number of brochs in Sutherland, and considers whether there may be contemporary sites in the District which are not, and cannot be, classified as brochs.

10.1 Historical Perspective

In the period of intense antiquarian activity in the latter part of the nineteenth century, some brochs in Sutherland were investigated with the interest and agreement of the then Duke of Sutherland who owned most of the former County, and who seems to have himself explored the brochs of Carn Liath and Craig Carril some time before 1874 (Joass 1890 (first published 1874), 102 and 107). Table 3 (p38) lists the five broch excavations known to have taken place in Sutherland. All were early, probably taking place well before 1874, and a record exists only of the excavations of Carn Liath, Craig Carril, and Kintradwell (Joass 1890). There is no record of the excavation of the broch of Backies, although it is known that the Danish archaeologist Worsaae had some involvement, as there are two elevation drawings by Worsaae of the excavated broch interior in the National Museum, Copenhagen, dated to 1846 (photocopies in NMRS: SUD/105/1-2). Joass also referred to the excavation of a broch at Eriboll by Captain Clarke, Meddat, Ross, but it is not certain which

Figure 54



LOCATION OF SUTHERLAND DISTRICT

broch was being excavated, and in any case there would appear to be no record of the excavation (Joass 1890, 109). Since early Victorian times there has been no further excavation of brochs in Sutherland apart from re-excavation at Carn Liath, firstly by Corcoran in the 1970s, and secondly by Love in the 1980s, for the purposes of better interpreting this guardianship monument to the public.

In terms of field survey, Sutherland has been little better served. The County was covered at an early date by the RCAHMS, forming the second report and inventory of that body (1911a). Sutherland was surveyed in the summer of 1909 and Caithness in the summer of 1910, and the inventories for both areas are similar in content and appearance. Since 1911 the brochs of Sutherland, like those of Caithness, have appeared in several lists of brochs compiled in the modern period (see Appendix 2), and have featured in support of several theories on brochs (Graham 1946-7; Young 1961-2; Hamilton 1968). It is clear that the information base for these lists and theories was old, in the case of excavation evidence early Victorian in origin, and in the case of survey evidence pre-First World War. Sutherland, like Caithness, has suffered a surprising neglect in broch studies, not particularly in keeping with its share of the estimated population of brochs (see section 10.3 below).

10.2 Information Sources

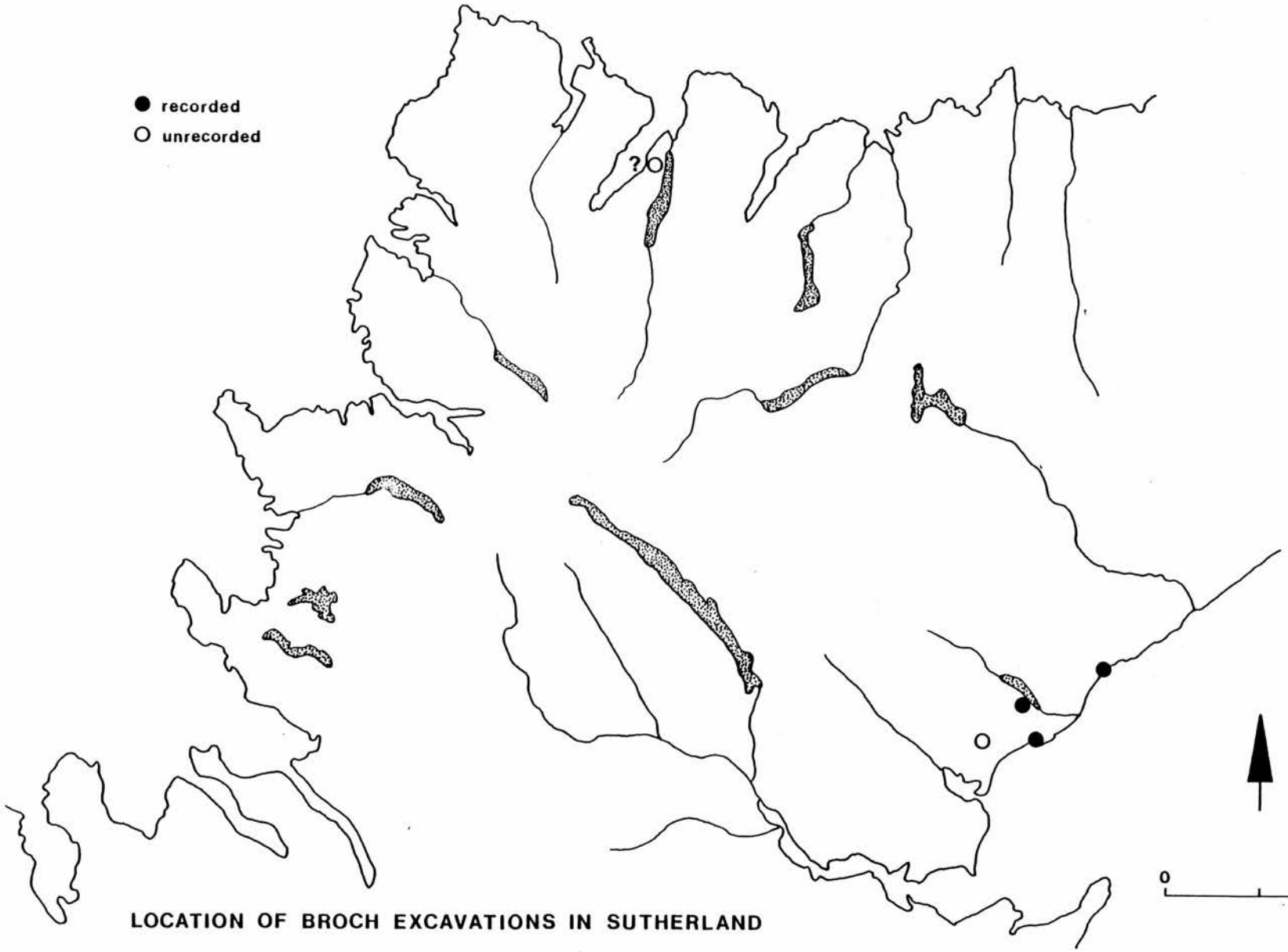
Apart from occasional visits by the OS and survey of limited areas by Mercer (1980, 1981), the basic survey information for Sutherland has remained that of the RCAHMS inventory of 1911. Any modern survey plans and descriptions of brochs in the District would therefore represent a considerable improvement in the quantity and quality of available survey information. For the purposes of this thesis it was decided to examine in detail a number of brochs located in the straths of Sutherland. Three straths were selected, Strath Naver, Strath Halladale, and the Strath of Kildonan. Altogether 43 locations in these straths were covered, not all of them identified as brochs by other authorities. A detailed description of each location and a total of 29 new detailed survey plans are included in the site catalogue (SN, SH, and SK numbers). More than one third of the identified broch

sites in Sutherland (see section 10.3 below and Table 18, pp210-2) has been covered by the original field survey for this thesis, a substantial improvement in the previous level of survey information.

The excavation record for brochs in Sutherland consists of brief reports on the brochs of Kintradwell, Carn Liath, and Craig Carril by the Rev JM Joass (1890). Joass excavated the broch of Kintradwell himself, but was reporting on the excavations by the Duke of Sutherland at the other two. In addition there is some further information available on the broch of Carn Liath from the recent excavations there by Corcoran and Love (NMRS; Disc Exc Scot 1984, 15-6 and 1986, 18). This pool of available information is neither extensive nor particularly useful, mainly because the excavations took place so long ago and little detail was recorded.

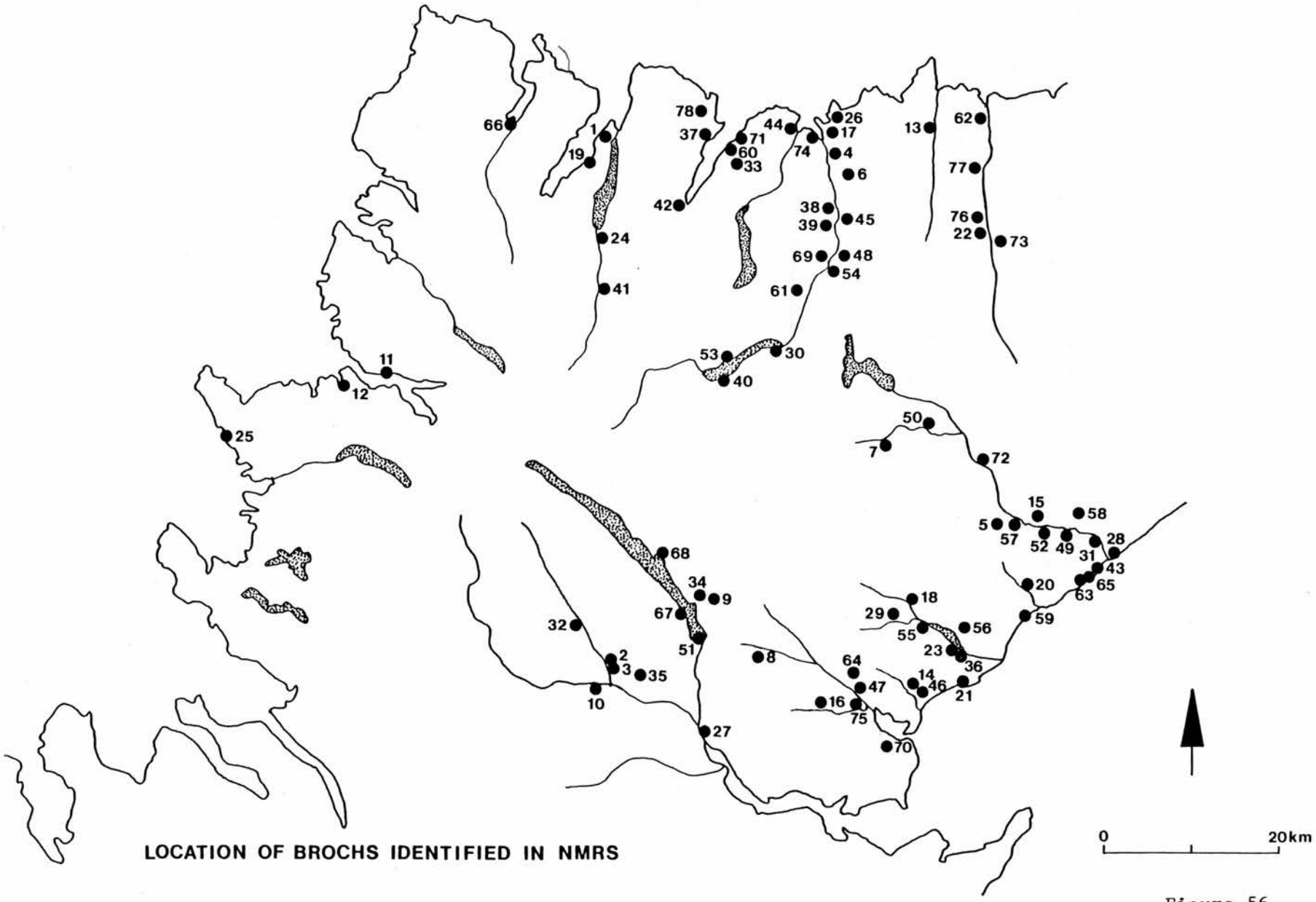
All of the excavated brochs lie fairly close together in the east of the District, two in the narrow east coastal plain (Kintradwell and Carn Liath), and one in Strath Brora, a valley dissecting the Sutherland plateau and draining to the east (Craig Carril) (Figure 55). There has been no recorded excavation of a broch anywhere else in the District, particularly in the major straths of Strath Naver draining to the north coast, and the Strath of Kildonan draining to the east coast, close to the border with Caithness. There is therefore a particular locational bias in the excavation record. This is of some significance in that there is reason to suggest from the available excavation and survey evidence for Sutherland, that brochs on the east coast of the District may have more similarities to broch complexes in the Caithness Plain to the north, than they have to brochs inland in the straths of Sutherland. This suggestion is explored further in Chapter 12.

Because the excavation record for Sutherland is so poor, in fact the worst of the three study areas examined in this thesis, considerably more reliance has to be placed on the field survey evidence contained in the site catalogue, than is the case either in Caithness, or even Skye. The excavation record in Skye is also not extensive, but there have at least been two recent excavations producing radio-carbon dates (MacKie 1965b and Martlew 1985). Sutherland seems to have been neglected in other respects as well, in that there is not a large pool



LOCATION OF BROCH EXCAVATIONS IN SUTHERLAND

Figure 55



LOCATION OF BROCHS IDENTIFIED IN NMRS

Figure 56

of published palaeo-environmental information available to assist in a reconstruction of the contemporary environment of brochs. It is surprising that the District has been so neglected from the point of view of field survey, excavation, and palaeo-environmental work, given the undoubted excellent preservation of archaeological remains in its many straths, most of which are under serious threat from afforestation.

10.3 Numbers of Brochs and Possible Contemporary Sites

Brochs

The number of brochs occurring within the District of Sutherland has been estimated by previous authorities to be about 78 (see Table 18, pp210-2 and Figure 56). About 60 of these have been recognised as brochs for a long time, appearing in the inventory of Sutherland (RCAHMS 1911a), and being fairly readily identifiable from the structural features visible in the stony rubble of the sites. This is in sharp contrast to sites called brochs in Caithness, which are heavily obscured by turf and not so readily identifiable. The remaining sites consist of recent discoveries by the OS, and sites previously identified during the antiquarian period, but not subsequently incorporated in the inventory of Sutherland.

There have been five recent discoveries by the OS of possible broch sites in Sutherland. Three of these occur in the selected study areas, Balvalaich in the Strath of Kildonan (SK 8; Figure 57a), and Skaill (SN 9) and Eilean Garbh (SN 10; Figure 57b) in Strath Naver. All three sites are very badly reduced, and only Balvalaich is fairly readily identifiable as a broch from the visible foundation courses of its inner and outer faces. It seems likely that the other two possible broch sites discovered by the OS in Sutherland, at the River Dionard and West Strathan, can be expected to be as equally reduced in appearance, hence their failure to have been previously recognised as archaeological sites.

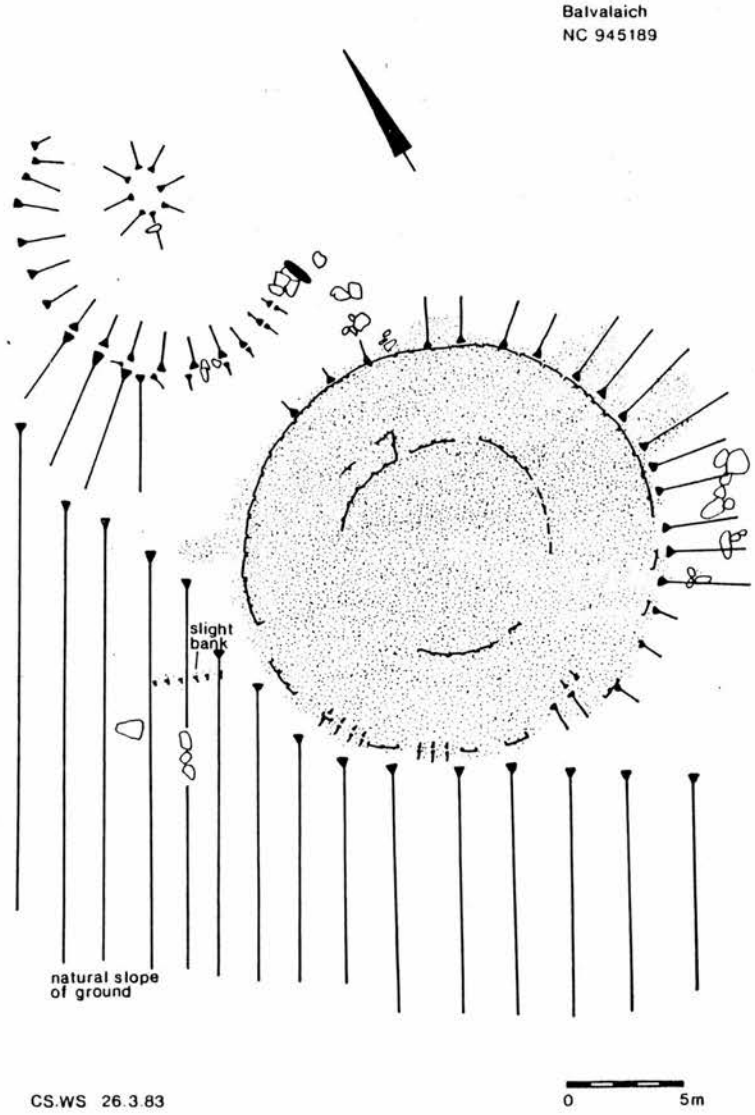
During the antiquarian period a number of sites were identified as being brochs or sites of brochs, and were included in Anderson's list, first published in 1874 and again in 1890. Many of these were

incorporated in the inventory of Sutherland, but some were omitted. Some of the omitted sites would appear to have been misidentified by the antiquaries as brochs, such as, the reputed brochs on either side of the Kinbrace Burn (SK 18) (Anderson 1890, 189), which would appear to have been misidentifications of large cairns in the area. On the other hand some antiquarian identifications of brochs missed from the inventory seem to have had some foundation in fact, for example, Craig Marril (SK 2) in the Strath of Kildonan, reputedly destroyed by the building of the Caithness railway (Anderson 1890, 188). A shale ring and a steatite cup or lamp were found on the site and subsequently deposited in Dunrobin Museum (information on NMRS card). Similar steatite cups or lamps were found in the excavated Sutherland brochs of Kintradwell and Craig Carril (Joass 1890, 102 and 108), pointing to the possibility that a broch may have existed at Craig Marril.

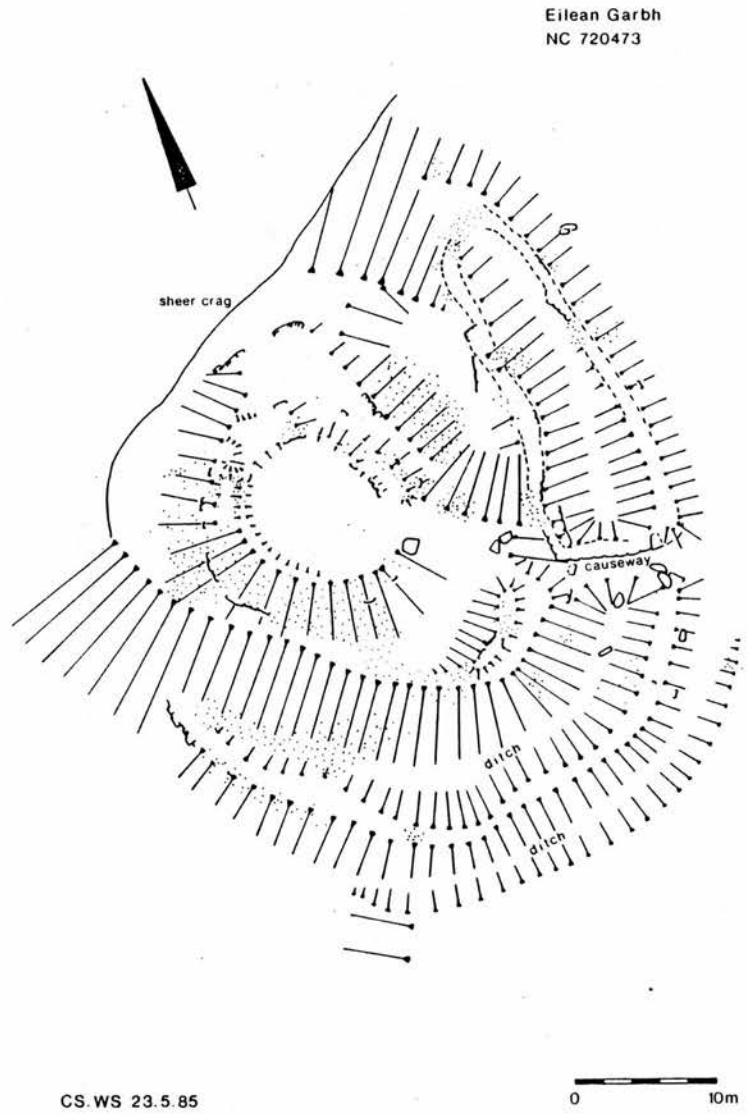
The site of Craig Marril, plus the recent discoveries by the OS, serve as reminders that not all of the possible broch sites in Sutherland have necessarily been identified. For example, there may have been a broch at Dalcharn (SK 15) in the Strath of Kildonan, also largely destroyed by the Caithness railway, in which another steatite cup or lamp was found and deposited in Dunrobin Museum (information on NMRS card). Dalcharn was not identified by the antiquaries as a broch and does not appear in the inventory of Sutherland. The OS classified the site as a cairn because of its name, but recorded a strong local tradition that the site had been a Pictish tower. There are geographical grounds for believing that both Dalcharn and Craig Marril may have been broch sites. This aspect is discussed further in Chapter 11, which considers the distribution of brochs in Sutherland.

Possible Contemporary Sites

In neighbouring Caithness the existence of contemporary sites other than brochs has not been established, and it is possible that only broch complexes may have existed in the Iron Age. In Sutherland, particularly in the straths, there are very large numbers of archaeological sites other than brochs, some of which have been classified as duns and forts, and which therefore could conceivably be considered as contemporary with sites identified as brochs. In addition, there are large numbers of hut circles in the Sutherland

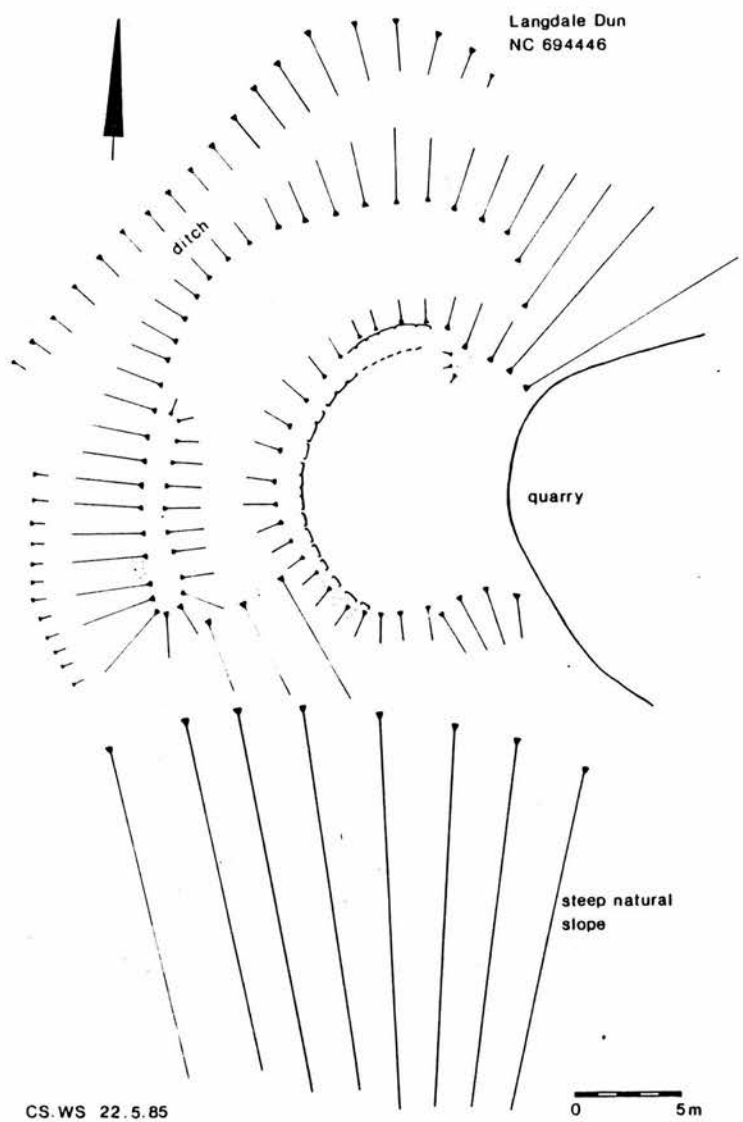

Balvalaich
NC 945189
slight bank
natural slope of ground
CS.WS 26.3.83
0
5m

(a)

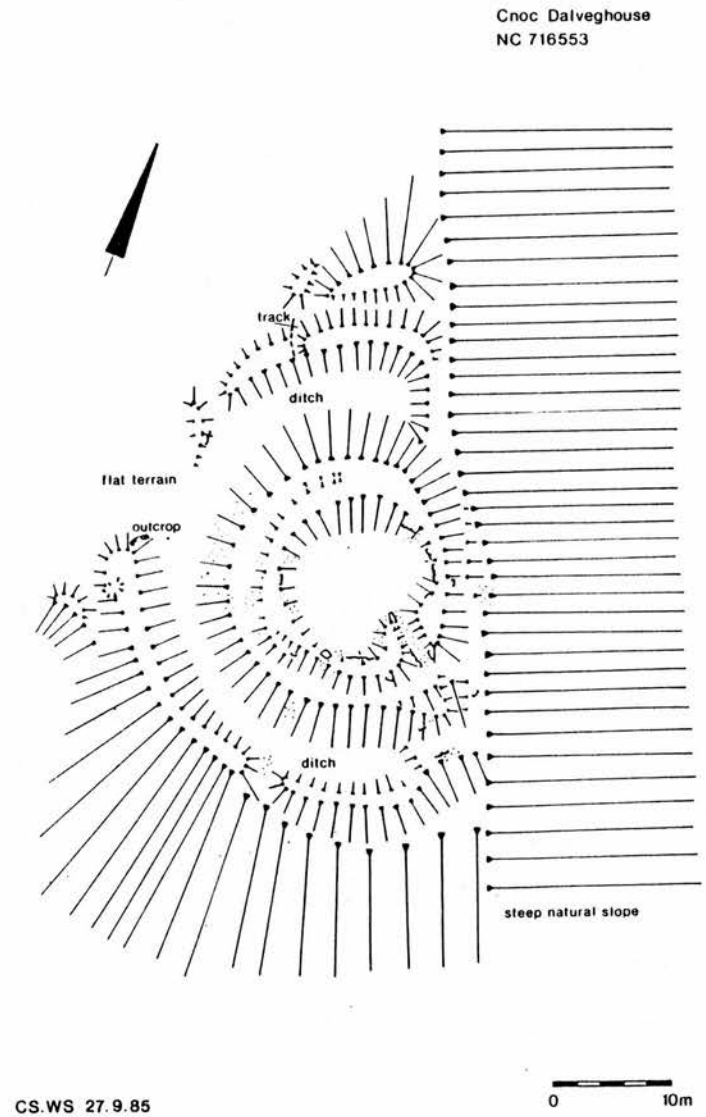

Eilean Garbh
NC 720473
sheer crag
causeway
ditch
ditch
CS.WS 23.5.85
0
10m

(b)

Figure 57


Langdale Dun
NC 694446
ditch
quarry
steep natural
slope
CS.WS 22.5.85
0
5m

(a)


Cnoc Dalveghouse
NC 716553
track
ditch
flat terrain
outcrop
ditch
steep natural slope
CS.WS 27.9.85
0
10m

(b)

Figure 58

straths. The excavation at Kilphedir dated one of these hut circles to a first occupation about 500 BC and a subsequent occupation about 130 BC (Fairhurst 1970-1, 90-3). Such dates are well in advance of traditional estimates of the period over which brochs were built and occupied, but in terms of the dates now being suggested for brochs in both Orkney and Caithness (Hedges 1987, Part I, 93; Fairhurst 1984, 164-8), it is no longer possible to dismiss hut circles so readily as being earlier than brochs without some further consideration. Sites identified by other authorities as duns or forts were included in the survey in the three study areas and are incorporated in the site catalogue. There are only a small number of these in each study area.

Strath Naver

In Strath Naver seventeen locations are covered in the site catalogue, of which eleven are undoubted brochs. Two of the remaining six sites, Skelpick (SN 4) and The Tulloch (SN 13), can be omitted from further consideration, the former being an apparent antiquarian misidentification of a cairn as a broch (Anderson 1890, 191), the latter, located on the floor of the strath, being probably a site of much later date, possibly akin to the Ring of Castlehill (EC 15) in the East Coast Study Area in Caithness. The remaining four sites in the strath, Langdale Dun (SN 14; Figure 58a), Skaill (SN 9), Eilean Garbh (SN 10; Figure 57b), and Cnoc Dalveghouse (SN 5; Figure 58b), are rather more difficult to identify with any certainty.

Langdale Dun is a much reduced structure, partially cut by a deep roadside quarry. It consists now of a semicircular arc of walling, appearing mainly as a grassy bank, but with facing stones indicating a wall width of only about 1.2m. The internal diameter of the structure may have been about 12m, but it is by no means certain that it was fully circular in shape. This structure would not have been considered in a survey of brochs in Strath Naver, because of its insubstantial appearance, had it not been for its enclosing bank and ditch, fairly similar to those around many brochs in the strath (see Chapter 12). It seems inappropriate and misleading to label this site as a dun, as it is quite unlike the many duns on the west coast of Scotland, some of which have broch-like features (see Chapter 15 and Table 22, pp335-9). The alternative classification of Langdale Dun as a homestead in the

NMRS is perhaps more in keeping with the nature of the site.

Skaill, recently discovered by the OS and identified by them as a possible broch, is such a badly reduced site that it was not considered that there were plannable remains during survey in 1985. There are no identifiable remains of a structure beyond a slight rubbly bank. The site has to be included in an examination of brochs in Strath Naver because of the presence of a ditch, cutting off easy access to the site, and its location which is not dissimilar to many of the brochs in the strath (see Chapter 11).

Eilean Garbh, also recently discovered by the OS and identified by them as a broch, has one of the most impressive sets of rampart and ditch defences in Strath Naver, surrounding a very insubstantial and badly denuded structure. It is likely that most of the stone from the structure has gone into the large enclosure lying on top of the defences in the E. The structure is only roughly circular with an oval-shaped internal area, measuring 9.6m N/S by 8.8m. The wall width is difficult to estimate, but seems to have been 3m or less on the N arc, but about 4.2m on the W arc. Neither the entrance nor any intramural features can be discerned. The combination of very strong natural defence with impressive artificial defences is very similar to many of the broch sites in Strath Naver, yet such is the denuded nature of the enclosed structure that it is impossible to identify it as a broch. It could well be another type of site altogether, although in terms of the distribution pattern of brochs in the strath, it is possible to view Eilean Garbh as another broch site (see Chapter 11).

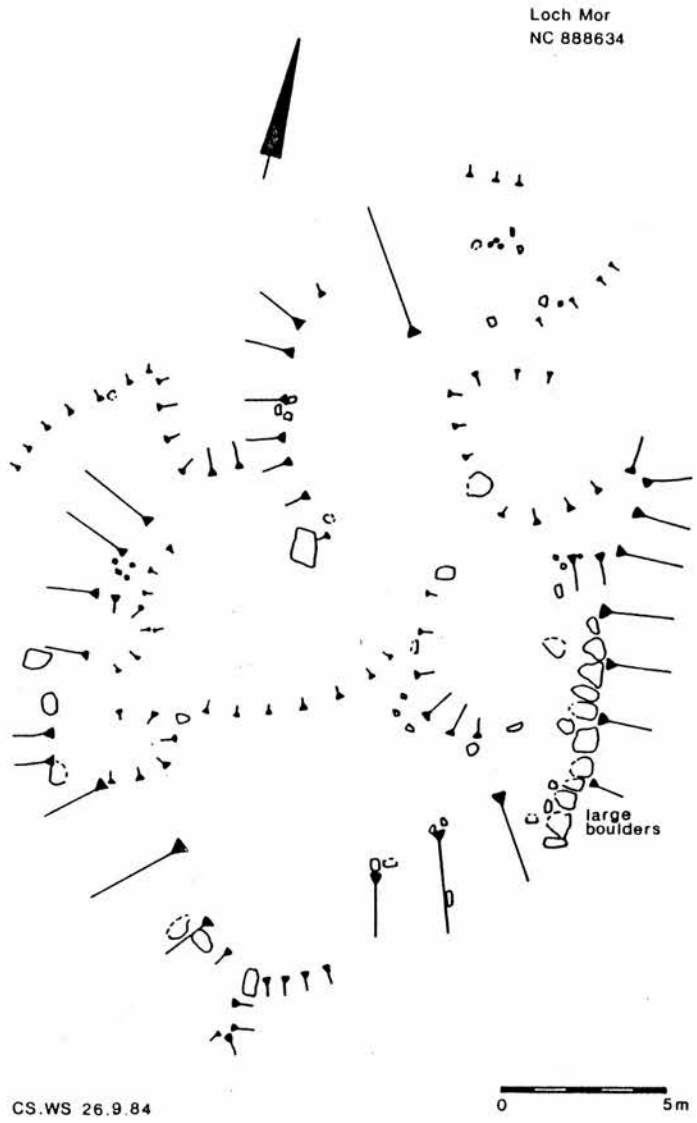
Cnoc Dalveghouse, like Eilean Garbh, has a fine set of ramparts and ditches linked to strong natural defence on the E arc of the site. The enclosed structure seems to exhibit two phases, a relatively thin walled, roughly circular enclosure with the wall thickened at the entrance passage, built onto, and partially into, a circular rubble platform measuring about 20.8m WNW/ESE by 20.2m. The rubble platform is substantially raised above the natural ground surface. The wall of the superimposed enclosure is only about 1.8m thick, increasing to 5.3m at its entrance, enclosing an internal area about 11m in diameter. It seems possible that the rubble platform underlying this enclosure could be the remains of an earlier structure, or the

platform may simply have been constructed to give a more substantial footing to the thin-walled enclosure. As at Eilean Garbh, it would be possible to accept Cnoc Dalveghouse as a broch in terms of its location in the distribution pattern of brochs in Strath Naver (see Chapter 11), were it not that the structural remains cannot be identified as those of a broch. There is also a distinct absence of an enclosed area between the structure and the ditch forming the first part of the outer defences. All of the undoubted broch structures in Strath Naver with outer defences possess such a defined external area (see Chapter 12). Cnoc Dalveghouse is currently classified in the NMRS as a defended homestead. Survey of the site has given little reason to dispute this classification.

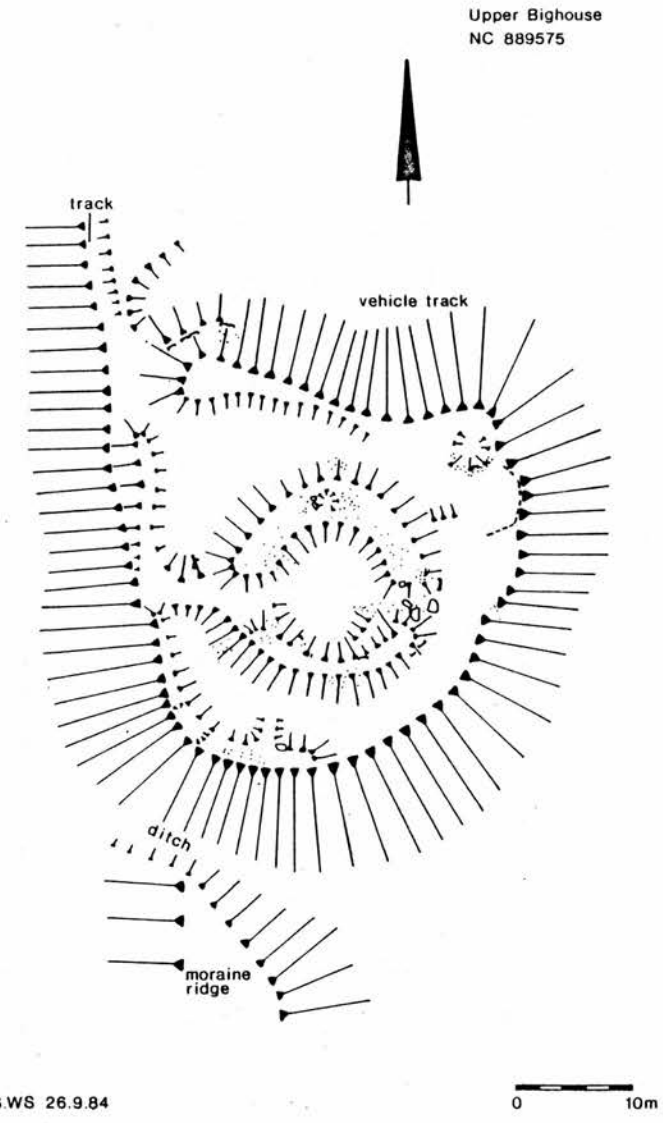
Strath Halladale

In Strath Halladale eight sites have been included in the site catalogue. Only three of these can be fairly readily identified as brochs. The five remaining sites were included in the survey, because they had all at one time been identified as possible brochs, duns or forts by previous authorities. Loch Mor (SH 3; Figure 59a) is very badly reduced, and there are no visible structural features to aid in the identification of the site. It may still be possible to identify Loch Mor as a broch however, because of its position in the strath (see Chapter 11), and because it may once have been located within the waters of the loch (see site catalogue), a similar location to Dun Creagach (SN 17) and possibly Coill'Ach a'Chuil (SN 15) in Strath Naver. The site of Loch a'Bhealaich (SH 4) is classified as a fort and minor field system in the NMRS. It is a pear-shaped enclosure on a rocky knoll, measuring 38m by 18m, and could belong to any period. The sites at Lower Bighouse (SH 1 and 2) have been identified as a possible broch and a possible dun respectively (Mercer 1980, 144 and 145), but there seems to be very little justification for these identifications. The former site could as easily be a damaged round cairn, and the latter is a fairly thin walled large enclosure in a non-defensive location with other enclosures or hut circles around it.

The remaining site in Strath Halladale, Upper Bighouse (SH 5; Figure 59b), has certain similarities with Cnoc Dalveghouse (SN 5; Figure 58b) in Strath Naver. The structure at Upper Bighouse is composed of a

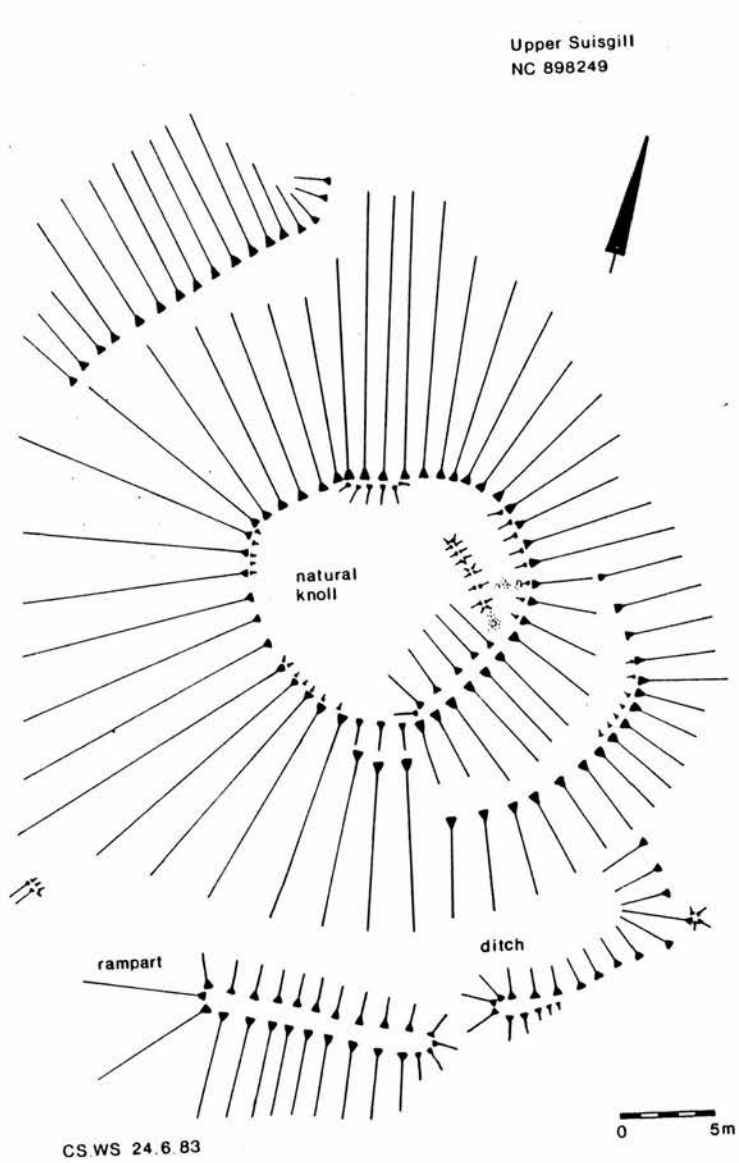

Loch Mor
NC 888634
large boulders
CS.WS 26.9.84
0
5m

(a)

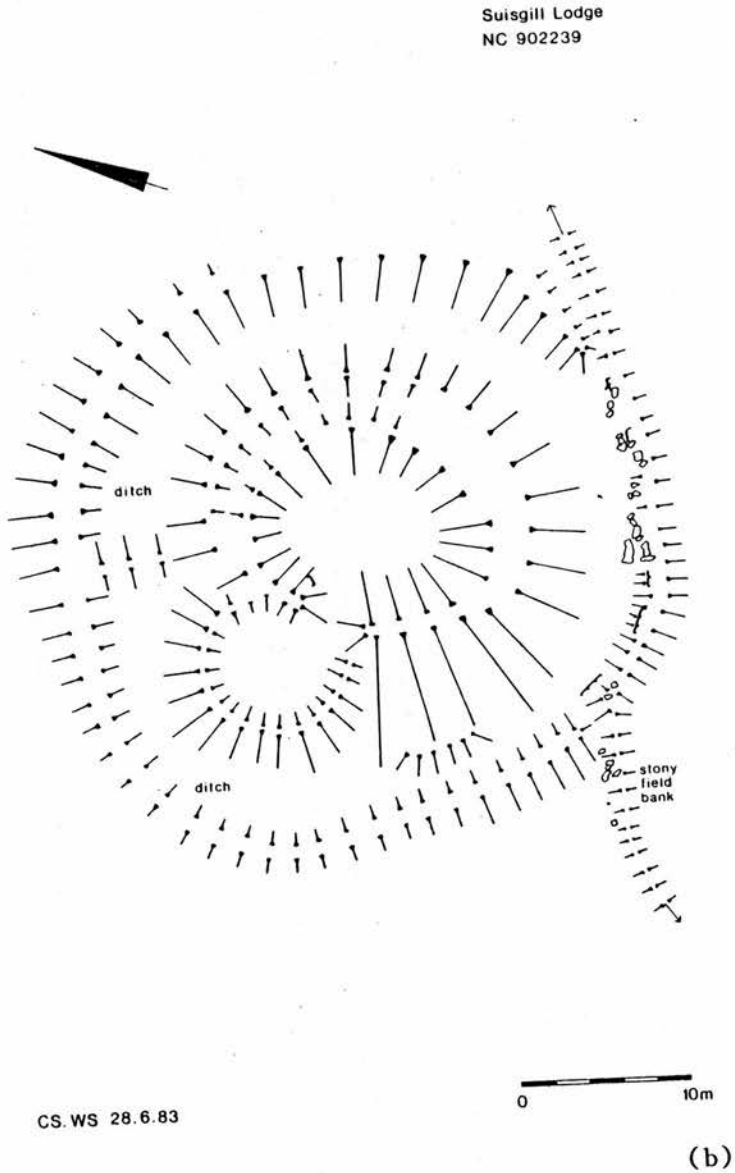

Upper Bighouse
NC 889575
track
vehicle track
ditch
moraine ridge
CS.WS 26.9.84
0
10m

(b)

Figure 59


Upper Suisgill
NC 898249
natural
knoll
ditch
rampart
0
5m
CS.WS 24.6.83

(a)


Suisgill Lodge
NC 902239
ditch
ditch
stony
field
bank
0
10m
CS.WS 28.6.83

(b)

Figure 60

curving stony bank interrupted by gaps on the W and E arcs. In the N the bank is 7m wide, but in the S it is only about 5m wide. The external diameter of the structure is about 20m. It is likely that the gap on the W arc, opposite a causeway, is the original entrance to the structure. The structure is identified in the NMRS as a broch, but there are no visible features to confirm this identification. The geographical location of Upper Bighouse is similar to two of the sites in Strath Halladale fairly firmly identified as brochs, Trantlemore (SH 6) and Carn Liath (SH 7) (see Chapter 11). Upper Bighouse is however noticeably a defended site, both naturally and artificially, whereas the two brochs of Trantlemore and Carn Liath are not. The outer bank or rampart at the site seems to be composed of material thrown up from a ditch excavated immediately around the structure. As at Cnoc Dalveghouse in Strath Naver, there is no defined external area between the structure and the ditch. In view of its similarities to Cnoc Dalveghouse, it may be more appropriate to view Upper Bighouse as a defended homestead rather than a broch.

Strath of Kildonan

In the Strath of Kildonan there are eighteen locations included in the site catalogue. Twelve of these are fairly readily identifiable as brochs or sites of brochs, including the sites of Craig Marril (SK 2) and Dalcharn (SK 15) discussed above. Three of the remaining locations, Caen Burn (SK 3), Torrish Burn (SK 6), and Kinbrace Burn 1 and 2 (SK 18) were identified as broch sites in the antiquarian period (Anderson 1890, 188-9). It seems unlikely that there were ever brochs in the valley of the Kinbrace Burn, as it lies far inland, close to the end of the extent of cultivable land in the strath, but brochs could perhaps be expected at the mouths of the Caen and Torrish Burns on geographical grounds (see Chapter 11). No broch sites have been firmly identified at either of these locations however. The site of Learable (SK 12), identified in the inventory of Sutherland as a supposed broch (RCAHMS 1911b, 107-8, no 315), would appear to be a rather indefinite circular enclosure of which there are several others in the strath, sometimes identified as hut circles or homesteads.

The two remaining sites of Upper Suisgill (SK 13; Figure 60a) and Suisgill Lodge (SK 11; Figure 60b) have both been variously identified

as a broch, a dun, or a homestead in the past. Upper Suisgill is similar to Skaill (SN 9) in Strath Naver in the degree of its destruction. There are vague traces of a discontinuous bank edging the top of a natural knoll, and there is a partial ditch and rampart at the foot of the knoll in the S, serving to oversteepen the natural slope on this side. The site is identified in the NMRS as a probable homestead, but there is no means of determining the original nature of the structure by field survey. On geographical grounds however it may be possible to identify the site as a broch, the classification it was previously given by the OS (see Chapter 11).

Suisgill Lodge is located high on the side of the Strath of Kildonan at about 120m OD. It is very overgrown with heather, so that few details of the structure are visible. The structure is about 25m in overall diameter, although no facing stones are visible, with a small circular structure tacked onto its W side. Immediately outside the structure there is a ditch from which the material has probably been thrown out to create the rampart encircling the site. As at Cnoc Dalveghouse (SN 5) in Strath Naver and Upper Bighouse (SH 5) in Strath Halladale, there is no defined external area between the structure and the ditch. The site of Suisgill Lodge seems most happily identified as another defended homestead.

Examination of possible contemporary sites of types other than brochs in the three study areas in Sutherland leads to two major conclusions.

(1) The terms "dun" and "fort" have been used in Sutherland, indicating the possible existence of Iron Age structures, contemporary with, yet different from, brochs. Experience in the three study areas has shown that the use of the term "dun" in a Sutherland context is in fact very misleading, being applied to sites quite unlike the duns on the west coast of Scotland, many of which have broch-like features. Sites such as Langdale Dun (SN 14) and Lower Bighouse 2 (SH 2) would be more appropriately classified as hut circles or homesteads, of which there appear to be large numbers in the Sutherland straths, exhibiting a considerable variety in form which has not been properly studied and assessed. Only the fort site of Loch a'Bhealaich (SH 4) matches the expectations raised by its classification, but there can be no certainty about its likely contemporaneity with brochs, despite

its apparent Iron Age label. Experience in the three study areas does not mean that sites classified as duns or forts elsewhere in the District are not correctly labelled, and possibly contemporary with brochs, but further survey work would appear to be required to investigate this aspect fully. For example, outliers of the population of west coast duns might be expected in the west of the District, where there are in fact only 3 identified brochs. The relationship between brochs and duns on the west coast of Scotland is examined in Part Four of the thesis which considers brochs in Skye.

(2) The chronological relationship between brochs and hut circles/homesteads is not obvious. It is normally assumed that the latter types of sites are earlier. The fact that the date range for brochs is now being extended back in time; that some of the homesteads in the three study areas have a system of outer defences similar to a number of brochs in the straths; and that they also occupy similar geographical locations, raises the possibility of some hut circles/homesteads being after all contemporary with brochs. The possible chronological relationships between brochs and hut circles/homesteads in the Sutherland straths are examined in Chapters 11 and 12.

Table 18 Sutherland: Brochs Identified in the NMRS

No	Name & Site Catalogue No	NGR	Survey Sources
1	Ach an Duin	NC 4601 6053	RCAHMS no 156; NMRS card no NC 46 SE 1
2	Achness	NC 4686 0273	RCAHMS no 51; NMRS card no NC 40 SE 2
3	Achaneas	NC 4701 0253	RCAHMS no 50; NMRS card no NC 40 SE 3
4	Achcoillenaborgie (SN 2)	NC 7139 5942	RCAHMS no 183; NMRS card no NC 75 NW 2
5	Allt a'Choire Mhoire (SK 10)	NC 9216 1887	RCAHMS no 312; NMRS card no NC 91 NW 2
6	Allt a'Chasteil (SN 3)	NC 7235 5752	RCAHMS no 182; NMRS card no NC 75 NW 6
7	Allt an Duin, Frithe (SK 17)	NC 8097 2605	RCAHMS no 313; NMRS card no NC 82 NW 4; ONB 26, 1871, 38
8	Allt na Meirle	NC 6300 0484	RCAHMS no 478; NMRS card no NC 60 SW 1
9	Alltbreac	NC 5911 1035	RCAHMS no 395; NMRS card no NC 51 SE 2
10	An Dun, Doune	NC 4445 0085	ONB 34, 1875, 7 and 9; NMRS card no NC 40 SW 2
11	An Dun, Kylesku	NC 2170 3411	RCAHMS no 168; NMRS card no NC 23 SW 1
12	An Dun, Loch Ardbhair	NC 1688 3323	RCAHMS no 4; NMRS card no NC 13 SE 1
13	Armadale Burn	NC 7994 6266	RCAHMS no 190; NMRS card no NC 76 SE 3
14	Backies	NC 8345 0261	RCAHMS no 272; NMRS card no NC 80 SW 1
15	Balvalaich (SK 8)	NC 9452 1898	NMRS card no NC 91 NW 14
16	Brae	NH 7050 9903	RCAHMS no 107; NMRS card no NH 79 NW 11
17	Cai Dun (? site)	NC 71 61	ONB 20, 1873, 113; NMRS card no NC 76 SW 18
18	Caisteal na Coille	NC 7957 1337	RCAHMS no 25; NMRS card no NC 71 SE 13
19	Camus an Duin	NC 4459 5797	RCAHMS no 157; NMRS card no NC 45 NW 1
20	Carn Bran	NC 9420 1220	RCAHMS no 468; NMRS card no NC 91 SW 2
21	Carn Liath, Dunrobin	NC 8704 0137	RCAHMS no 270; NMRS card no NC 80 SE 4
22	Carn Liath, Bunahoun (SH 7)	NC 8940 5233	RCAHMS no 187; NMRS card no NC 85 SE 3
23	Carril	NC 8462 0646	RCAHMS no 27; NMRS card no NC 80 NW 1
24	Cashel Dhu, Loch Hope (? site)	NC 4530 4986	ONB 13, 1874, 28; NMRS card no NC 44 NE 4
25	Clachtoll	NC 0366 2784	RCAHMS no 7; NMRS card no NC 02 NW 2
26	Clerkhill, Farr	NC 7175 6338	RCAHMS no 265; NMRS card no NC 76 SW 1
27	Cnoc an Tinnel (? site)	NH 579 953	Anderson 1890, 190; NMRS card no NH 59 NE 7
28	Cnoc Chaisteal (site) (SK 1)	ND 0310 1525	RCAHMS no 386; NMRS card no ND 01 NW 24
29	Coich Burn	NC 7880 1087	RCAHMS no 23; NMRS card no NC 71 SE 2
30	Coill'Ach a'Chuil (SN 15)	NC 6585 3815	RCAHMS no 176; NMRS card no NC 63 NE 2
31	Craig Marrill (site) (SK 2)	cND 015 174	Anderson 1890, 188; NMRS card no ND 01 NW 34
32	Dail Langwell	NC 4116 1121	RCAHMS no 49; NMRS card no NC 41 SW 1

Table 18 (continued)

No	Name & Site Catalogue No		NGR	Survey Sources
33	Dallcharn, Tongue		NC 6210 5875	Proc Soc Antiq Scot 7, 1866-8, 275; NMRS card no NC 65 NW 5
34	Dalchork		NC 5725 1116	RCAHMS no 394; Mercer 1980, 119, DAL 181b; NMRS card no NC 51 SE 8
35	Doir a'Chatha		NC 5017 0239	RCAHMS no 52; NMRS card no NC 50 SW 2
36	Duchary		NC 8550 0520	RCAHMS no 28; NMRS card no NC 80 NE 16
37	Dun Buidhe		NC 5818 6040	OSA 1792, 520; ONB 1874, 24; NMRS card no NC 56 SE 4
38	Dun Carnachaidh	(SN 6)	NC 7213 5269	RCAHMS no 180; NMRS card no NC 75 SW 8
39	Dun Chealamy	(SN 8)	NC 7199 5140	RCAHMS no 179; NMRS card no NC 75 SW 9
40	Dun Creagach	(SN 17)	NC 6046 3558	RCAHMS no 175; NMRS card no NC 63 NW 11
41	Dun Dornadilla		NC 4572 4501	RCAHMS no 155; NMRS card no NC 44 NE 3
42	Dun Maigh		NC 5523 5303	RCAHMS no 527; NMRS card no NC 55 SE 1
43	Dun Phail		ND 0148 1387	NSA 15, 1841, 200; ONB 25, 1871, 32; NMRS card no ND 01 SW 2
44	Dun Torrisdale		NC 6773 6185	Proc Soc Antiq Scot 16, 1881-2, 177; NMRS card no NC 66 SE 4
45	Dun Viden	(SN 7)	NC 7265 5188	RCAHMS no 181; NMRS card no NC 75 SW 11
46	Dunrobin Wood		NC 8407 0176	RCAHMS no 271; NMRS card no NC 80 SW 2
47	East Kinnauld		NC 7438 0159	RCAHMS no 477; NMRS card no NC 70 SW 5
48	Eilean Garbh	(SN 10)	NC 7201 4732	NMRS card no NC 74 NW 3
49	Eldrable	(SK 5)	NC 9833 1816	RCAHMS no 309; NMRS card no NC 91 NE 20
50	Feranach	(SK 16)	NC 8441 2730	RCAHMS no 314; NMRS card no NC 82 NW 1
51	Ferry Wood		NC 5719 0679	RCAHMS no 391; NMRS card no NC 50 NE 42
52	Gylable	(SK 7)	NC 9487 1823	RCAHMS no 311; NMRS card no NC 91 NW 9
53	Grummore	(SN 16)	NC 6107 3669	RCAHMS no 174; NMRS card no NC 63 NW 2
54	Inshlampie	(SN 11)	NC 7159 4657	RCAHMS no 178; NMRS card no NC 74 NW 5
55	Kilbruar		NC 8229 0987	RCAHMS no 24; NMRS card no NC 80 NW 4
56	Killin		NC 8673 0761	RCAHMS no 26; NMRS card no NC 80 NE 3
57	Kilournan	(SK 9)	NC 9293 1882	RCAHMS no 310; NMRS card no NC 91 NW 8
58	Kilphedir	(SK 4)	NC 9943 1891	RCAHMS no 307; NMRS card no NC 91 NE 27
59	Kintradwell		NC 9293 0807	RCAHMS no 467; NMRS card no NC 90 NW 5
60	Kyle of Tongue		NC 6036 5977	RCAHMS no 530; NMRS card no NC 65 NW 1
61	Langdale Burn	(SN 12)	NC 6926 4496	RCAHMS no 177; NMRS card no NC 64 SE 1
62	Loch Mor	(SH 3)	NC 8889 6344	RCAHMS no 189; NMRS card no NC 86 SE 2; ONB 20, 1873, 102
63	Loth		NC 9764 1117	OSA 6, 1798, 320; NMRS card no NC 91 SE 3

Table 18 (continued)

No	Name & Site Catalogue No	NGR	Survey Sources
64	Mearlig, Rogart (? site)	NC 73 03	Anderson 1890, 190; NMRS card no NC 70 SW 28
65	Midgarty	ND 0008 1279	NSA 15, 1841, 200; NMRS card no ND 01 SW 5
66	River Dionard	NC 3633 6200	NMRS card no NC 36 SE 6
67	Sallachadh	NC 5491 0922	RCAHMS no 392; NMRS card no NC 50 NW 1
68	Shinness	NC 5273 1526	RCAHMS no 393; NMRS card no NC 51 NW 1
69	Skaill (SN 9)	NC 7135 4744	NMRS card no NC 74 NW 20
70	Skelbo Wood	NH 7820 9443	RCAHMS no 106; NMRS card no NH 79 SE 4
71	Scullomie (? site)	NC 615 610	Proc Soc Antiq Scot 7, 1866-8, 275; NMRS card no NC 66 SW 1
72	Suisgill (SK 14)	NC 8875 2530	RCAHMS no 308; NMRS card no NC 82 NE 12
73	The Borg (SH 8)	NC 8993 5095	RCAHMS no 186; NMRS card no NC 85 SE 1
74	The Sandy Dun (SN 1)	NC 6973 6097	RCAHMS no 184; NMRS card no NC 66 SE 2
75	Torboll (? site)	NH 7537 9920	Proc Soc Antiq Scot 7, 1866-8, 528; NMRS card no NH 79 NE 6
76	Trantlemore (SH 6)	NC 8918 5338	RCAHMS no 188; NMRS card no NC 85 SE 2
77	Upper Bighouse	NC 8896 5752	Anderson 1890, 190; Mercer 1980, 149, HAL 39; NMRS card no NC 85 NE 1
78	West Strathan	NC 5645 6401	NMRS card no NC 56 SE 7

CHAPTER 11 BROCHS AND THE LAND

There has been no comprehensive attempt to reconstruct past landscapes in Sutherland. Indeed it was pointed out in Chapter 10 that there is not a great deal of published palaeo-environmental information for the District. Nonetheless there is a certain amount of available information, some of it in connection with recent archaeological excavation in the Strath of Kildonan (Romans and Durno in Fairhurst and Taylor 1970-1, 95-9; Andrews et al in Barclay 1985, 191-2 and fiche 1:C3-D4; Birnie in Haggarty forthcoming). The aim of this chapter is to use the available sources to examine the main elements of the possible contemporary relationship between brochs and the land in Sutherland.

Section 11.1 describes the modern landscape of Sutherland, pointing out the differences in environment which occur in the District. Section 11.2 attempts a tentative reconstruction of the contemporary landscape of brochs in the District, both in general terms and in terms of micro-environments. Section 11.3 assesses first the distribution pattern of brochs in the District as a whole, then examines in detail the pattern in the individual straths selected as study areas. Finally, section 11.4 considers whether there is landscape evidence for understanding broch function in Sutherland, and highlights directions in which further research might proceed in order better to assess the relationship between brochs and the land in the District.

11.1 The Modern Landscape

The area of Sutherland District divides into five principal landform sectors: the western plateau; the western hills; the central plateau; the eastern hills; and the eastern lowlands (Ross, Omand, and Futty in Omand 1982, 41-61; Figure 61). The western hills form the watershed of the District, with short, rapid rivers draining to the west, and longer, more complex river systems draining to the north, east, and south-east, following fault lines and folds in the underlying geological structure. The west and north coasts of the District are rugged and deeply fjorded, with the bays or kyles in the north largely filled with sand. The east coast of the District by contrast is smooth

The Landform of Sutherland

Source: Omand 1982, fig 7

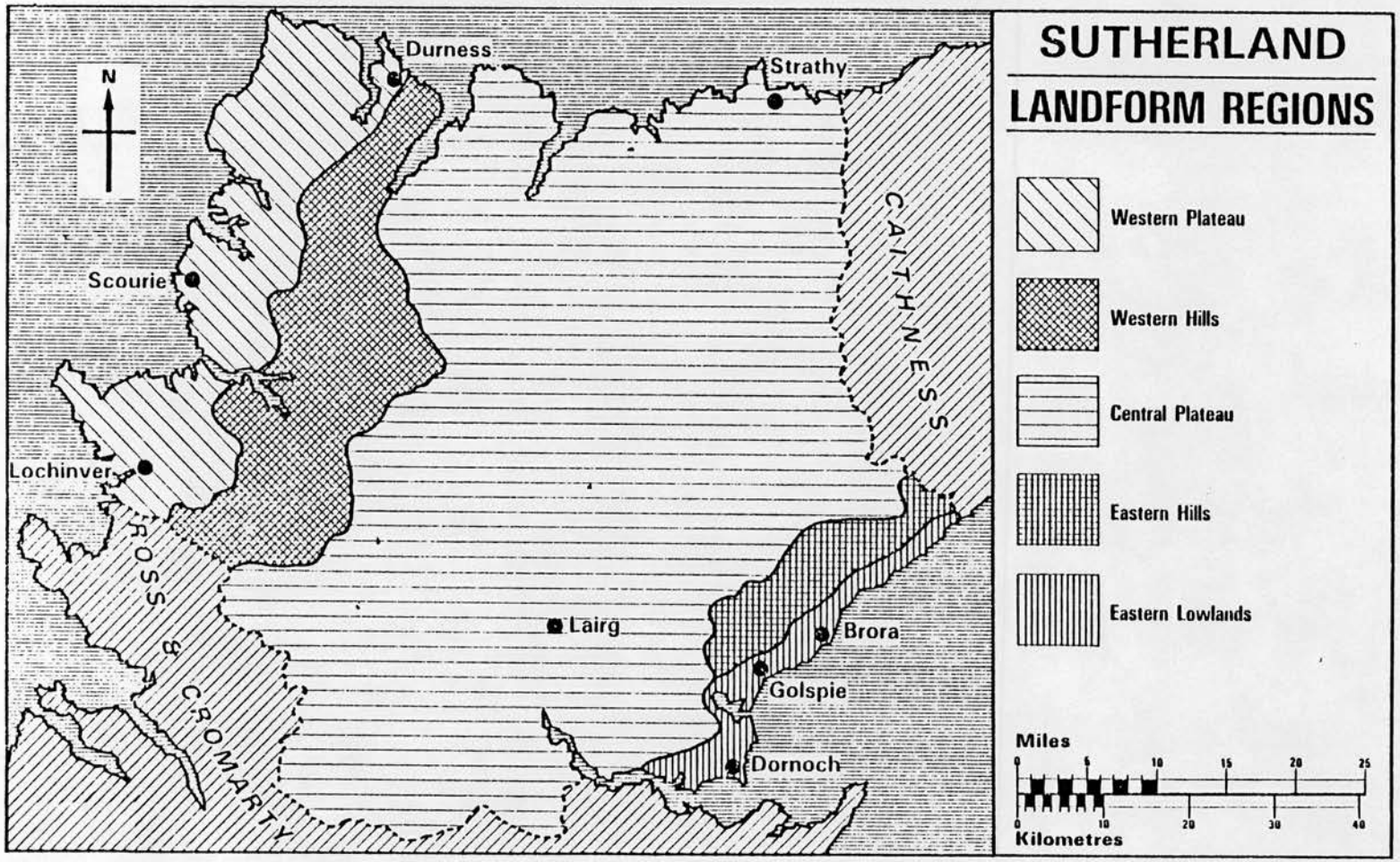
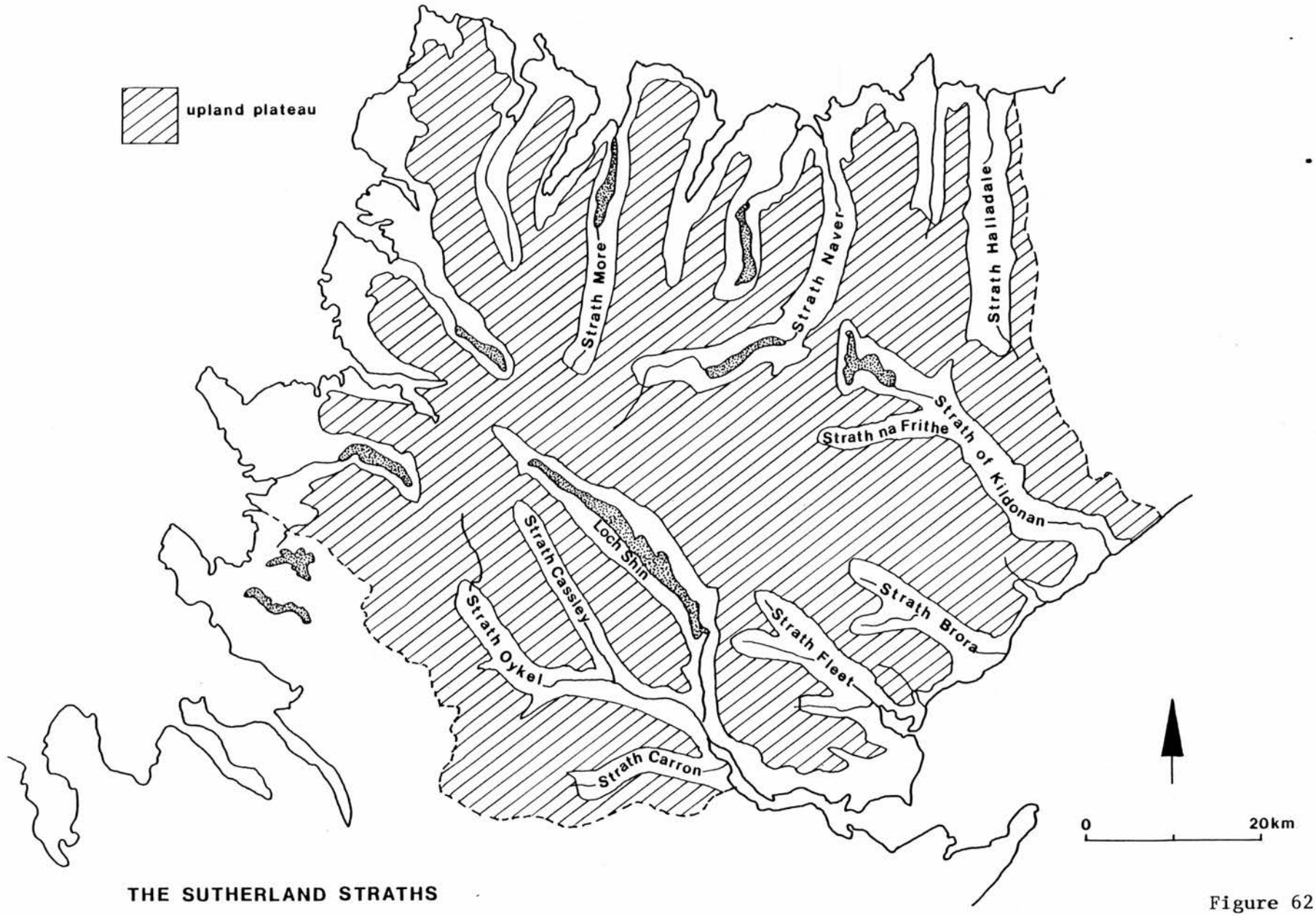


Figure 61



THE SUTHERLAND STRATHS

Figure 62

The Soils of Sutherland

Source: Omand 1982, fig 10

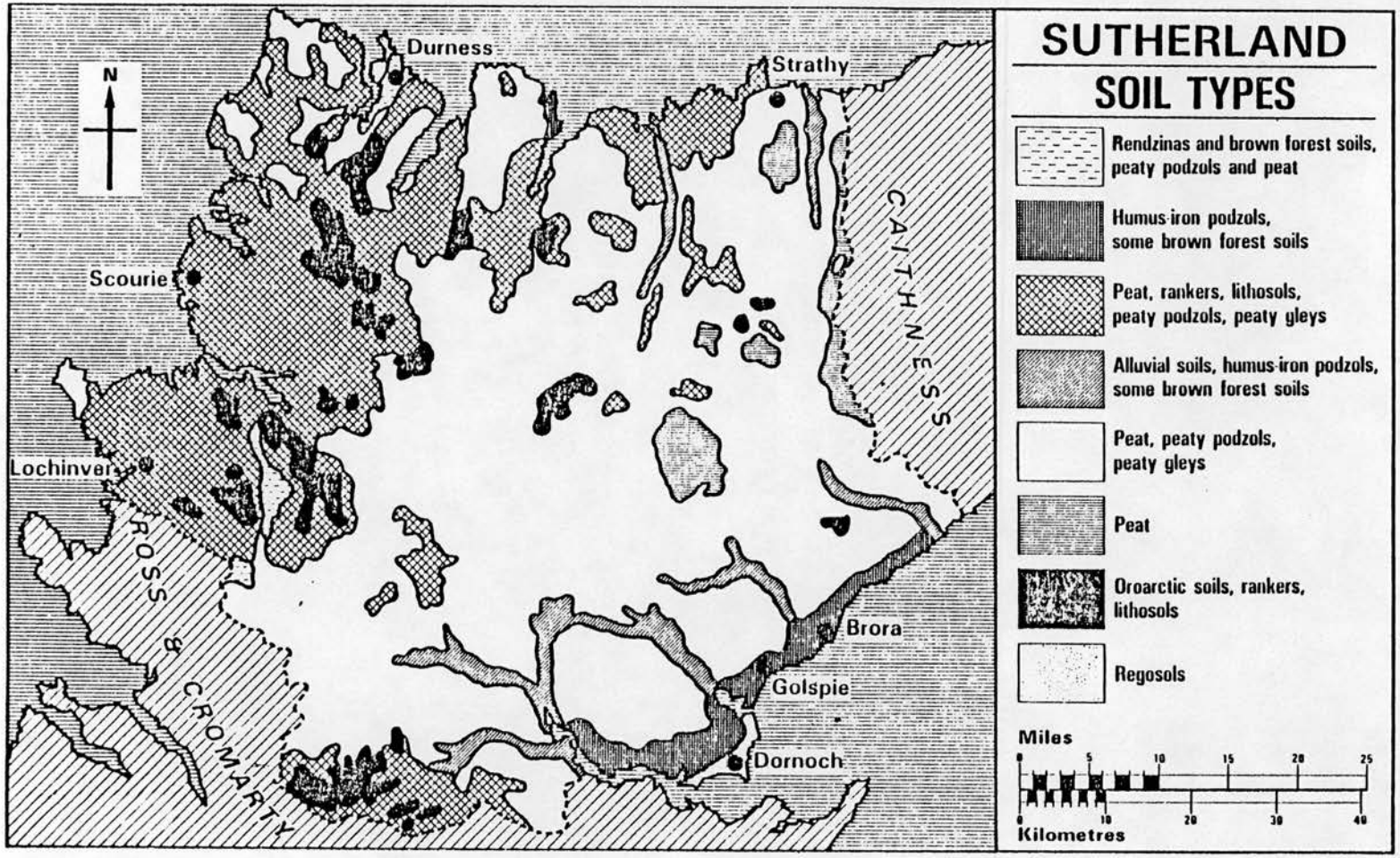


Figure 63

with only two major inlets, and long stretches of beach along almost its entire length. The central plateau is a large area of peaty moorland, lying between about 100 and 450m OD, dissected by long straths containing northern and eastern flowing rivers and occasional long lochs (Figure 62). The straths were formed in the Tertiary geological period, but were deepened by glacial action in the Quaternary. There are several high mountain areas in the District, in Assynt in the west where the hills rise to about 900m, in the Moine Schist area in the north where the hills again rise to about 900m, and in the coastal range in the east, where the hills reach about 600m in height. The eastern lowlands are composed of a very narrow strip of gently sloping ground, sandwiched between the eastern hills and the sea.

The climate of the District is dictated by the presence of the mountain barrier in the west, which causes the prevailing south-westerly winds to shed much of their moisture as they rise to pass over the hills (Omand in Omand 1982, 74-87). In the lee of the hills in central and eastern Sutherland the climate is much drier and warmer. The average annual rainfall in the west of the District is about 3000mm, whereas in the east it is less than 750mm, a similar rainfall to the Caithness Plain lying to the north-east of the District. The presence of the sea on three sides of the District has a modifying effect on temperatures in summer and in winter, but much of the District is exposed to wind except in the sheltered straths and the eastern lowlands. Exposure and elevation have effects on temperatures and growing seasons. South facing slopes have additional warmth, whereas north facing slopes are in shade for long periods, and frost and snow linger. The varied topography of the District creates a series of micro-environments, and these can be expected to have had a determining effect on settlement and land use in the past, far more than has been the case in the flatter area of the neighbouring Caithness Plain.

The soils of the District are predominantly peat, peaty podzols, and peaty gleys, which support a wet heather moorland vegetation on the extensive central plateau and the mountains (Futty in Omand 1982, 62-73; Figure 63). Soils exhibiting the effect of Man are to be found

mainly in the eastern lowlands, the crofting land around the coasts, and in the straths. Most of the straths and smaller river valleys have large stretches of alluvial soil, which are either cultivated, or support an acid grassland. The alluvial soils are freely drained.

The following statement has been made in relation to modern agriculture in the District.

"In terms of agricultural production, Sutherland comes last of all the mainland Scottish Districts. A glance at the physical geography of the District explains why very clearly. Along the south-east coast from Bonar Bridge to Helmsdale there is a low lying, fertile ribbon of arable land varying from under 0.8km (1/2 a mile) to a little over 3.2km (2 miles) wide. Along the north and west coasts there are patches of cultivable ground as there are in the deep straths that divide the District, but otherwise Sutherland is a land of mountain, wasteland and water with only very limited agricultural value." (Burnett in Omand 1982, 243).

Farming in the area today is based largely on livestock, with crops grown for animal feed and some barley grown for malting. There are larger farms on the east coast, with crofts more common on the north and west coasts.

11.2 Reconstruction of the Contemporary Landscape of Brochs

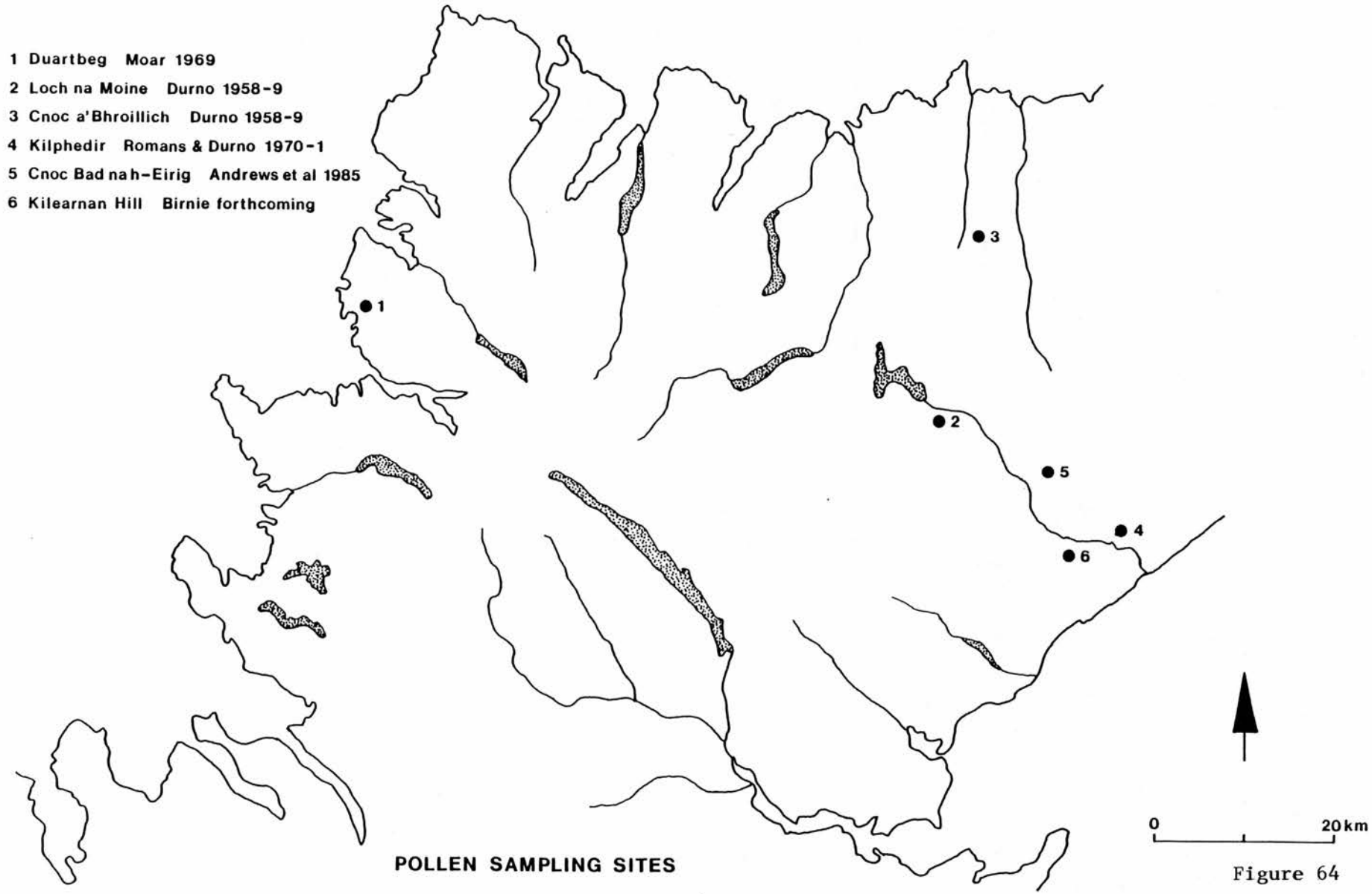
The basic description quoted above of the modern agricultural landscape of Sutherland would have been recognisable at any time in the past history of settlement and land use in the District. Sutherland is, and has been, a land of mountain, wasteland and water since the last glaciation, with settlement and cultivation only possible in limited areas with a favourable micro-environment, that is, the straths and river valleys dissecting the central plateau; the east coast lowlands; and occasional pockets of land along kyles and at bayheads on the north and west coasts. These areas of favourable micro-environment are immediately recognisable on any OS map of the District, simply because of the palimpsest of evidence for past settlement occurring within them. Unlike the neighbouring District of Caithness, Sutherland has not experienced major agricultural improvements, because of its marginal nature in terms of modern cultivation methods. Much of the sequence of past settlement and land use has survived intact, allowing an interpretation of the history of these elements at least to be begun.

In attempting a reconstruction of the contemporary landscape of brochs, two levels of reconstruction have to be considered: changes in the general environment of the District as a whole; and, of more importance, changes in the micro-environments of individual settled areas. For the first level of reconstruction there is sufficient palaeo-environmental evidence available for the District to allow a general assessment to be made of the past landscapes of the District. The second level of reconstruction is more of a problem. Such is the varying nature of the terrain in Sutherland, that micro-environments can be expected to differ quite markedly over short distances, making it very difficult to generalise. A great deal of specialised research is required to assess past micro-environments properly, in order to determine the interactions between topography and climatic conditions in particular areas over time, and then to assess the capabilities of those areas for settlement and land use at different periods in the past. No detailed palaeo-environmental work of this kind has taken place in Sutherland, except in the Strath of Kildonan, where three excavations have been accompanied by pollen analysis (Romans and Durno in Fairhurst and Taylor 1970-1, 95-9; Andrews et al in Barclay 1985, 191-2 and fiche 1:C3-D4; Birnie in Haggarty forthcoming).

The following sections consider first landscape changes over time in the District as a whole, as indicated by pollen diagrams from several sites. Second, some consideration is given to potential variety in micro-environments over short distances, by examination of palaeo-environmental evidence from Kilearnan Hill, Upper Suisgill, and Kilphedir in the Strath of Kildonan (Figure 65). As no other strath in Sutherland has been the subject of combined excavation and palaeo-environmental work, no wider comparisons of micro-environments throughout the District are possible beyond some general statements of principle.

Regional Landscape History

There are published pollen diagrams for five sites in Sutherland (Figure 64): Duartbeg near Scourie in north-west Sutherland (Moar 1969); Loch na Moine between the valleys of the rivers Helmsdale and Naver (Durno 1958-9); Cnoc a'Bhroillich between the Halladale and Strathy rivers (Durno 1958-9); Kilphedir (Romans and Durno in



POLLEN SAMPLING SITES

Figure 64

Fairhurst and Taylor 1970-1, 95-9); and Cnoc Bad na h-Eirig about 2km from Upper Suisgill (Andrews et al in Barclay 1985, 191-2 and fiche 1:C3-D4). A sixth pollen diagram will be published along with the report of the excavations at Kilearnan Hill in the Strath of Kildonan (Birnie in Haggarty forthcoming). Only the more recent pollen diagrams are radiocarbon dated (Moar 1969; Andrews et al in Barclay 1985; Birnie in Haggarty forthcoming). The diagrams are broadly similar in the main vegetational changes which they note. The most recent diagrams from the Strath of Kildonan allow a general summary of the landscape of Sutherland since the ice retreated to be drawn up as follows:

10000 - 6000/5500bp	General growth of birch/hazel woodland, the natural climax vegetation of north Scotland.
6700 - 5500bp	Beginning of formation of blanket bog on upland plateaux, beginning of alder spread, pine growing on uplands
4500bp	Notable decline in forest cover, possible burning of pine on uplands
3000 - 1000bp	Regeneration of woodlands, particularly birch/hazel/alder on strath sides, some upland pine
1000 - 600bp	Drastic reduction of woodland, with heath covered moorland becoming widespread

(bp - uncorrected radiocarbon years before 1950 AD)
(Drawn from Andrews et al in Barclay 1985, 191-2 and fiche 1:C3-D4; Birnie in Haggarty forthcoming).

Andrews et al suggested that the decline of arboreal pollen and growth of non-arboreal pollen about 4500 bp could indicate Neolithic clearances for cultivation, but could also be related to hydrologically- or climatically-induced variations in the wetness of blanket bog at the coring site (in Barclay 1985, 191). Birnie has also suggested that pine was being cleared on upland areas by burning at this period (in Haggarty forthcoming), and this may have been another factor contributing to the reduction of arboreal pollen noted in the pollen records. As pine would appear to have been growing mainly on

the higher plateaux, above the level of cultivation in Sutherland at any period, burning of the woodlands in these areas should perhaps be seen as linked to the needs of pastoralism or hunting rather than cultivation. There is no clear evidence that clearing of the woodlands in Sutherland was taking place on a large scale for the purposes of cultivation in the Neolithic.

There is equally no evidence that there was widespread clearance of woodlands for the purposes of cultivation in the Bronze Age. On the contrary the pollen diagrams indicate a general regeneration of woodlands after about 3000bp, with the strath sides being the most favourable situation for woodland growth. On the upland plateaux at this time it is likely that there was extensive blanket bog with only scattered pines. The pollen diagrams for Upper Suisgill and Kilearnan Hill both indicate that today's prevailing conditions in Sutherland of open heathland without naturally growing trees, is a phenomenon of relatively recent times. The diagrams differ in the date for the beginning of the final reduction of the woodlands in the straths, that for Upper Suisgill placing its beginning around 1700bp (Andrews et al in Barclay 1985, 191), that for Kilearnan Hill placing it about 1000-600bp (Birnie in Haggarty forthcoming). It is clear that Bronze Age settlement and land use, in the Strath of Kildonan at least, took place within a wooded landscape, with clearings for cultivation apparently only on a fairly small scale. The evidence from the pollen diagrams indicate that these wooded conditions persisted beyond the Bronze Age, through the period when brochs were occupied, and for a long time afterwards. Settlement and land use in the Sutherland straths during the period of broch occupation would appear to have taken place within a birch/hazel/alder wooded environment, with cultivation taking place on cleared land, the exact extent of which is impossible to estimate without some detailed investigation of the micro-environments of broch locations.

Variety in Micro-Environments in the Strath of Kildonan

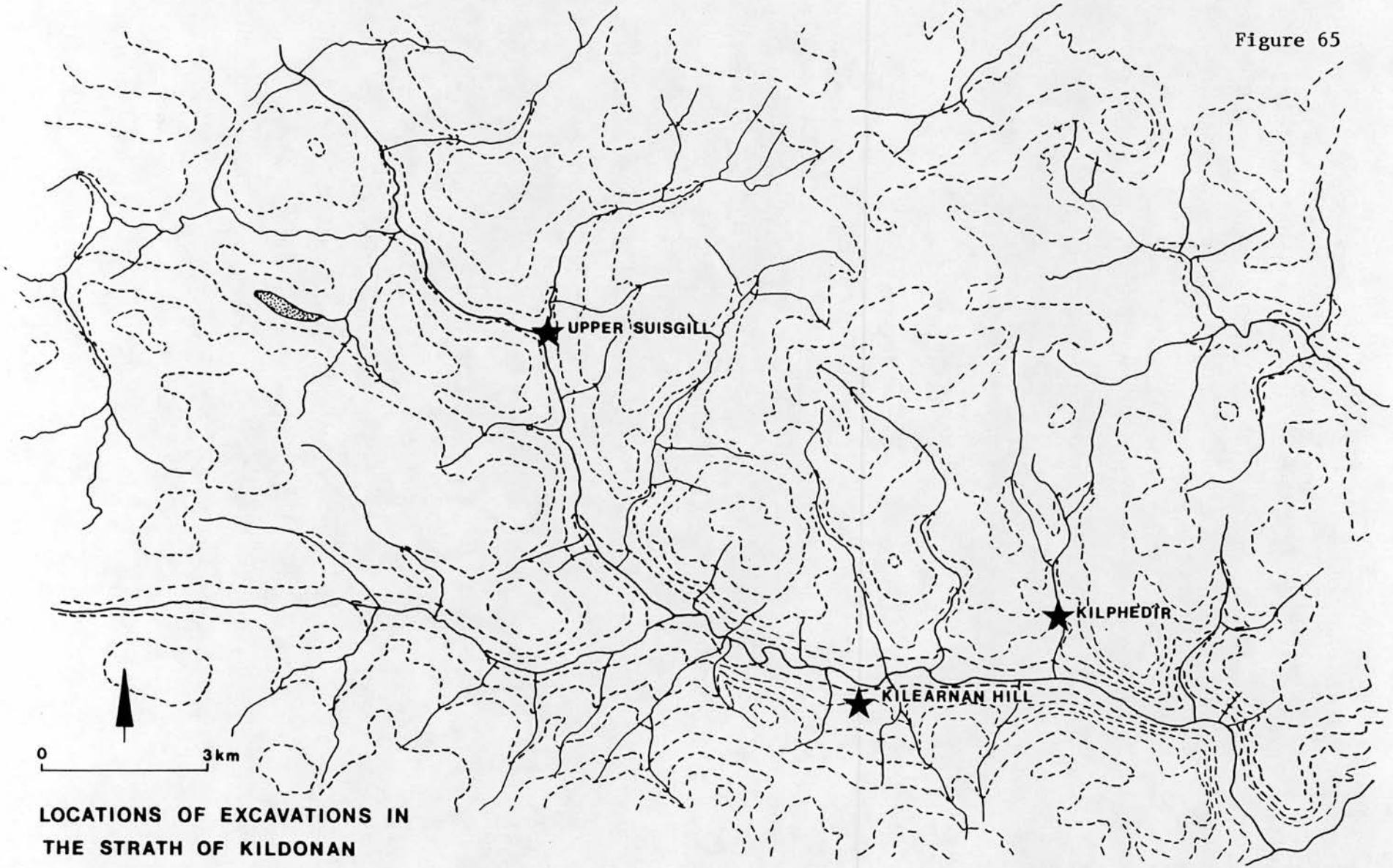
The capability of land in Sutherland for settlement and cultivation at any time in the past would have depended on interaction amongst a range of factors, including climate, soils, slope, aspect, elevation, and exposure, as well as less tangible factors, such as, level of

agricultural technology and population pressure. The physical nature of the District is so varied, that in the more favourable areas for settlement a series of micro-environments would have existed in the past, varying considerably over time and area. This can be demonstrated by reference to the Strath of Kildonan, one of the three study areas in Sutherland, and an area where both excavation and palaeo-environmental work has taken place.

The three locations which have been investigated in the Strath of Kildonan, lie roughly about the same distance apart, spanning about 13km of the strath (Figure 65). Upper Suisgill and Kilphedir lie on the north side of the strath with Kilearnan Hill on the south side. It might be expected that Kilearnan Hill would be the least favourable of the three from the point of view of micro-environment, as it is located entirely on north and north-east facing slopes.

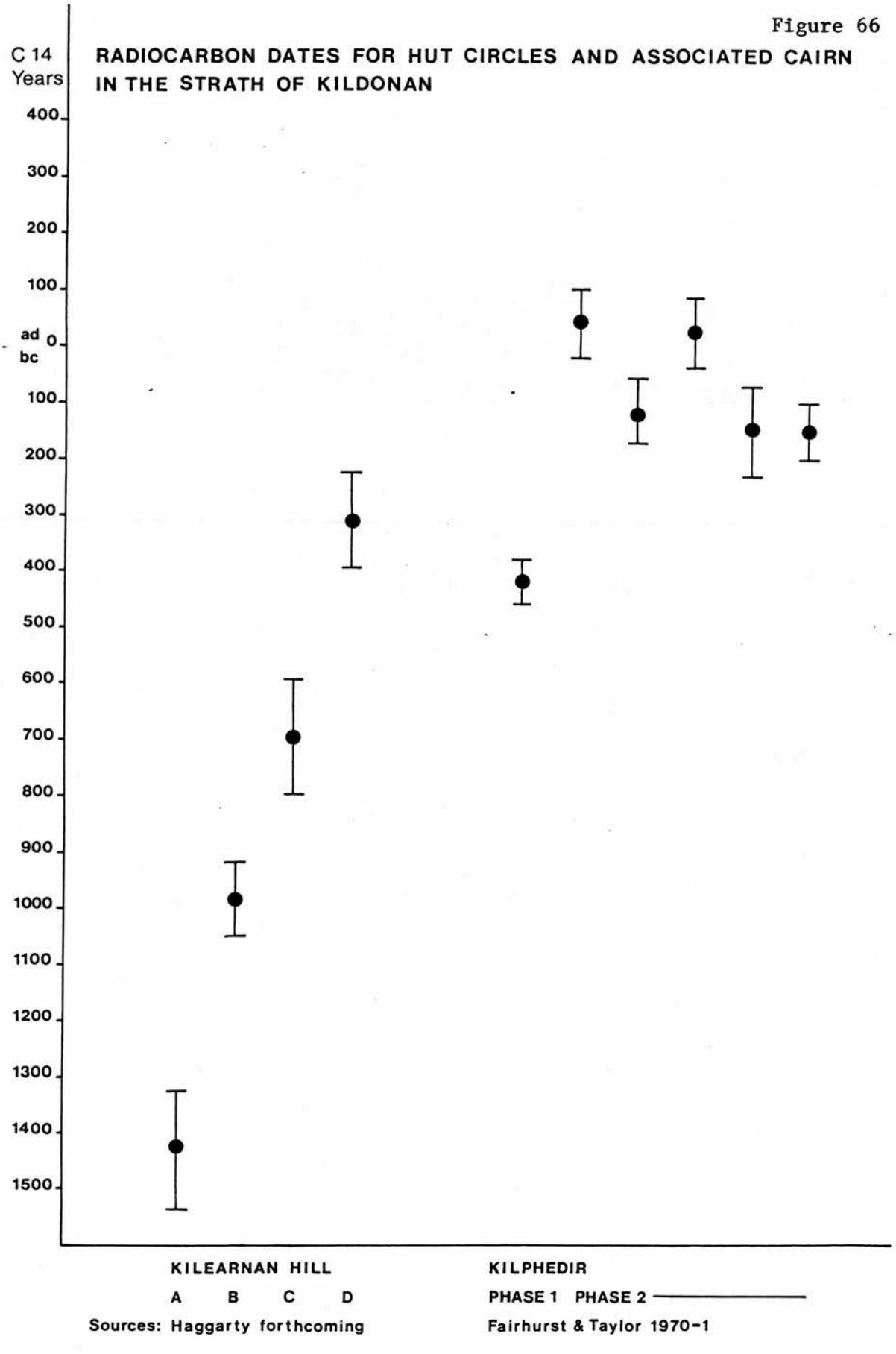
Upper Suisgill is located in the bottom of the strath, on the inner edge of the north flood terrace of the River Helmsdale. Before excavation began it was assumed that surviving settlement evidence would lie close to the surface, but in fact much of the site was buried under deep hillwash deposits. The sequence on the site was divided by the excavator into eight periods from the early first millennium bc up to recent occupation and road building, interrupted by episodes of scouring and hillwash deposition (Barclay 1985, 162). Fragmentary remains of houses were found in Period II and dated to 825±105bc (GU-1492). They had been built of timber, but could not be interpreted as hut circles, as there was no surrounding stone or soil ring. There was a trace of a house in Period IV, dated to 885±90bc (GU-1490), but it was too fragmentary for its form to be determined. Settlement was re-established in Period VI on the surface of hillwash deposits, and was dated to 255±65bc. It was subsequently covered by more hillwash. Recent settlement (Period VIII) was represented by uncharacterised activity at the south edge of the excavated area, and by two post-medieval buildings which were probably part of an adjacent pre-clearance settlement. In addition to settlement evidence at Upper Suisgill there was evidence that the excavated area had been in cultivation over a long period, indicated by the presence of ard-markings, a few possible spade-marks, quantities of carbonised cereal grains and some saddle querns.

Figure 65



LOCATIONS OF EXCAVATIONS IN
THE STRATH OF KILDONAN

Figure 66


C 14 Years
RADIOCARBON DATES FOR HUT CIRCLES AND ASSOCIATED CAIRN IN THE STRATH OF KILDONAN
400
300
200
100
ad 0
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700
800
900
1000
1100
1200
1300
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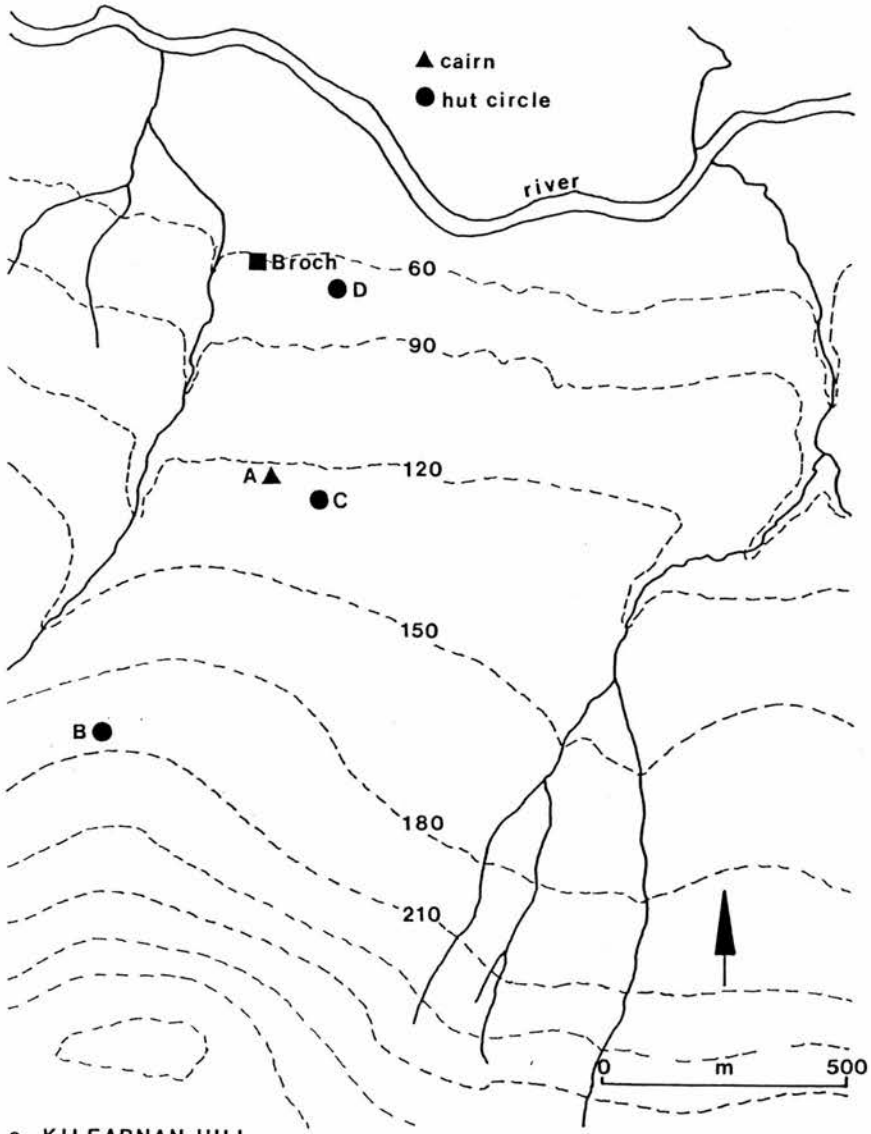
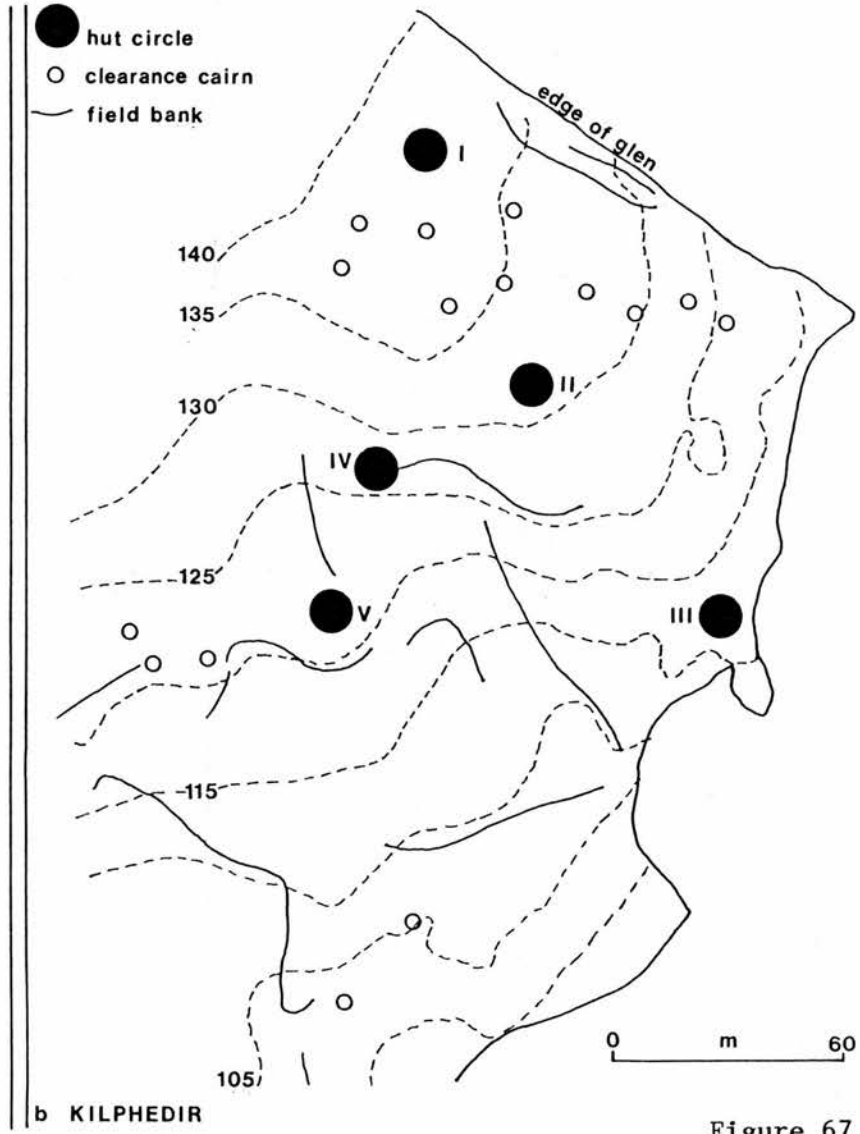
1500
KILEARNAN HILL
A B C D
KILPHEDIR
PHASE 1 PHASE 2
Sources: Haggarty forthcoming
Fairhurst & Taylor 1970-1



a KILEARNAN HILL



b KILPHEDIR

Figure 67

It is clear that the flood terrace of the River Helmsdale at Upper Suisgill had been in more or less continuous settlement and/or agricultural use from the Bronze Age onwards, probably including the period when brochs were occupied. It is possible that a similar continuity of settlement and cultivation on strath floors may have existed elsewhere in Sutherland District, but has been destroyed by an intensity of succeeding land use, or has been obscured by natural processes of burial or erosion.

"A hitherto unrecognised type of house and enclosure, of a period apparently very badly represented in the upstanding remains ... was found on a river terrace, consistently the most heavily exploited type of land in the north, and therefore an area in which poor survival of monuments would be expected. A stratigraphy of almost 2m was preserved, representing a cross-section of settlement evidence over a period of over 2500 years. Although water damage was severe in a large part of the excavated area, the portion of the site lying to the SW of the trenches should preserve relatively undamaged evidence under the protecting blanket of gravel. It is certain that other sites buried by colluvial and alluvial processes survive in Highland and other valleys." (Barclay 1985, 196)

The evidence for continuity at Upper Suisgill points to strath floors having had a favourable micro-environment at most periods in the past, so that settlement and cultivation continued unaffected by climatic change, although they may have been interrupted by other factors. There is a considerable flood risk on many of the strath floors (Futty and Towers 1982, 27), but the continuity of the settlement at Upper Suisgill demonstrates that natural processes of erosion and deposition were not sufficient to terminate continued use of that particular location. The Upper Suisgill location may well have been in use for cultivation during the period of broch occupation, and it may be reasonable to suggest that strath floors throughout the District may generally have been in cultivation during that period.

The presence of hut circles and field systems on the sloping sides of the Sutherland straths indicates that settlement and cultivation also took place at some time at a higher limit than the strath floors. The absolute upper limit of the hut circle systems in the Strath of Kildonan is about 200m OD, but throughout the District it varies from strath to strath and within straths, depending presumably on particular circumstances of micro-environment. Both Kilearnan Hill and Kilphedir are examples of the hut circle settlements on the strath sides, the former lying on a north facing slope, the latter on a south

facing slope. The history of each site as revealed by excavation and radio-carbon dates is markedly different (Figure 66).

The hut circles at Kilearnan Hill lie between about 60 and 200m OD on the south side of the strath, and are associated with cairns and burnt mounds (Haggarty forthcoming; Figure 67a). A series of dates was obtained for the settlement as follows:

Burial cairn	(A on Figure 67a)	3380±105bp (1430±105bc)	(GU-1916)
Hut circle	(B on Figure 67a)	2935±65bp (985±65bc)	(GU-1919)
Hut circle	(C on Figure 67a)	2645±100bp (695±100bc)	(GU-1917)
Hut circle	(D on Figure 67a)	1640±85bp (310±85ad)	(GU-1918)

(Alison Haggarty pers.comm.)

The dates for the hut circles show a gradation down the strath side, with the earliest (B) located at about 200m OD, and the latest (D) at about 60m OD in the vicinity of the broch of Gylable (SK 7). Pollen analysis of excavated deposits from hut circle (B) indicated that hut building and occupation took place in a wooded environment, followed by a steady decline in woodland and replacement by heath in the vicinity, although there was an interim period of open woodland with some grasses and bracken prior to heath dominance. The peat capping over the hut circle did not form until post 660bp (Birnie in Haggarty forthcoming). Birnie suggested that the change in the vicinity from woodland with grassland in its understorey to heath represented a reduction in the base-status of surrounding soils, possibly as a consequence of leaching and podsolisation, presumably caused by increased rainfall. There was little evidence of cultivation in the pollen spectra from Kilearnan Hill, although there was some evidence of disturbance to the ground. Nine out of the ten cairns excavated at the location however proved to be clearance cairns (Haggarty 1983), showing that cultivation was taking place. The excavation at Kilearnan Hill has demonstrated that the less favoured side of the Strath of Kildonan, that is, the north facing side, had a favourable micro-environment very early in the first millennium BC allowing settlement and cultivation up to about 200m OD. Subsequently, with a deterioration in climate, settlement seems to have moved progressively downslope on the north facing side of the strath.

The hut circles investigated at Kilphedir lie between 120 and 130m OD on the north side of the strath (Fairhurst and Taylor 1970-1; Figure 67b). (The detailed contoured plan of the settlement given in Fig 2 on p69 of Fairhurst and Taylor 1970-1 appears to have incorrect heights on the contours, when compared with Fig 15 on p91 of Fairhurst and Taylor. It is Fig 15 which is in fact incorrect, as the contour labelled 400ft should read 500ft.) The hut circles are associated with clearance cairns, alignments of boulders and low banks. Two periods of occupation were identified by the excavation. The first period of occupation involved all five hut circles, and was calibrated to about 500 BC by the excavators, but only on the strength of a single radio-carbon date (Fairhurst and Taylor 1970-1, 90). The second period of occupation was confined to Hut Circle V and was calibrated by the excavators to about 130 BC (Fairhurst and Taylor 1970-1, 90). This latter date seems well supported by a consistent series of radio-carbon determinations (Figure 66). There was some evidence that shrubby vegetation, and possibly trees had recolonised the remains of Hut Circle I after its abandonment, and before there had been time for peat to form (Fairhurst and Taylor 1970-1, 71). Otherwise the excavators considered that peat had formed soon after the abandonment of the hut circles (Fairhurst and Taylor 1970-1, 91), a conclusion at variance with that for Kilearnan Hill, where it was considered that the peat capping was a relatively recent phenomenon at hut circle (B).

The first occupation at the Kilphedir settlement was considerably later than that at both hut circles (B) and (C) at Kilearnan Hill on the south side of the strath. Hut circle (B) at Kilearnan Hill is located much higher on the strath side at about 200m OD, whilst hut circle (C) at 130m is at a comparable height. The date of the second occupation at Kilphedir is close to traditional estimates of the period of broch occupation, and within the latest estimates for brochs in the north (Hedges 1987, Part I, 93; Fairhurst 1984, 160-3), pointing to the possibility that some hut circles may have been contemporary with brochs. The evidence from Kilphedir would suggest however that there was less population pressure on that particular area around the time brochs were occupied, as a group of five hut circles had been reduced to one by the time of the later occupation. (Evidence for a second phase of occupation was found only in Hut

Circle V (Fairhurst and Taylor 1970-1, 92).) The date of hut circle (D) at Kilearnan Hill suggests that hut circles as a settlement form may have continued after the period when brochs are traditionally thought to have been occupied.

The findings at Upper Suisgill, Kilearanan Hill and Kilphedir, when taken together, have considerable implications for understanding broch function; for assessing the amount of available cultivable land during the period of broch occupation; and for assessing population size and carrying capacities. Timber houses would seem to have been in use over a lengthy period from at least 1000BC up to the first three centuries AD. Such houses would appear to have been located on the strath floor before the period when brochs are traditionally thought to have been occupied, and they would also appear to have been located on the strath sides both before, possibly during, and after the time of broch occupation, but at progressively lower levels, presumably because of climatic deterioration. Unfortunately there is insufficient information on brochs in the straths to be more specific about the chronological relationships between brochs and unenclosed timber built settlements, but it would appear to be very unwise to view brochs in the Sutherland straths as having existed in isolation, as the settlement form of their time. This aspect is considered further in the following section which discusses the distribution pattern of brochs in Sutherland as a whole, and the three study areas of Strath Naver, Strath Halladale, and the Strath of Kildonan, in particular.

In summary, during the period when brochs were occupied, it appears that within the Strath of Kildonan:

(1) the strath floor may generally have been under cultivation, and probably had been so for centuries;
(2) the upper slopes of both sides of the strath above about 120m OD had probably long since been abandoned for cultivation;
(3) there may well still have been cultivation on the lower slopes on both sides of the strath. (The upper limit of that cultivation cannot be determined, but Hut Circle V at Kilphedir is located at about 120m OD, whereas hut circle (D) at Kilearanan Hill is close to the broch of Gylable (SK 7) at about 60m OD. The upper limit of cultivation on

the north side of the strath may have been slightly higher, as a result of a more favourable micro-environment on that side.);
(4) there may have been contemporary timber houses, although direct proof of this is lacking.

It is not possible to extrapolate the findings in the Strath of Kildonan to other straths and river valleys in Sutherland District, because micro-environments can be expected to vary so much. In general however it may be said that the floors of the straths would appear to have been much more important than has been given credit in the past. As Barclay has remarked:

"It is certain that other sites buried by colluvial and alluvial processes survive in Highland and other valleys. It is a truism that archaeological information of an immensely better quality is available from sites where the more fleeting remains of settlement and ritual activity survive (such as floors, stakeholes, hearths), than from sites which have been ploughed or otherwise abraded. The discovery of further well preserved sites under hillwash is a most exciting prospect. However, the problems of location and preservation are great." (Barclay 1985, 196).

The possibility of many undiscovered sites on the floors of straths, spanning a long period probably including that of broch occupation, added to the possibility of contemporary hut circles on strath sides, rather prejudices early attempts to understand the pattern of settlement and land use associated with brochs. The recent detailed work which has taken place in the Strath of Kildonan shows the way forward if a better understanding of settlement and land use patterns over time is to be reached. An extension of excavation, coupled with palaeo-environmental work, to other straths and river valleys in Sutherland would be most informative.

11.3 Distribution Pattern of Brochs

Distribution within the District

In view of the foregoing discussion on the landscapes of Sutherland, modern and past, it comes as no surprise to find that brochs in Sutherland are to be found in the areas of favourable micro-environment, which have supported settlement and cultivation for millennia. Brochs are to be found in the eastern lowlands, in the straths and river valleys, along the kyles in the north, and very occasionally at locations on the west coast (see Figure 56, p197). In

general terms they are located more towards the east side of the District than the west, reflecting the better suitability of the environment for settlement.

The most typical broch location in the District is within a river valley or strath. Practically every river valley of any size has a broch or brochs located within it. Some of the straths have a large number of brochs, for example, the Strath of Kildonan, where there are even two brochs sited along its major western tributary, the Abhainn na Frithe. The brochs in the valley of the Frithe are located very far inland, many kilometres from the sea, a characteristic which is replicated throughout the District, for example, along the shores of Loch Naver and Loch Shin, and in the valley of the River Cassley, a tributary of Strath Oykel. It is clear from the location of these far inland sites, that penetration along the straths has taken place as far as topography and climate have allowed settlement and cultivation to proceed. Where there appear to be no brochs in apparently favourable locations, for example, in the valley of the River Borgie to the west of Strath Naver, destruction of sites should first be considered before any other explanation is sought. Examination of the numbers of brochs in Sutherland District in Chapter 10 pointed to the possibility of as yet undiscovered, but badly ruined, broch sites in the District. The name of Borgie may itself be indicative of a missing site in the valley of the River Borgie, although there are other types of archaeological site in the valley from which the name may have derived.

The three study areas in Sutherland District were selected because they were river valleys or straths, typical locations for brochs within the District. The three straths vary however in that two, Strath Naver and the Strath of Kildonan, are major valleys, and the third, Strath Halladale, is smaller with a less favourable terrain. Another variation in the study areas is the orientation of the valleys. Strath Naver and Strath Halladale both drain to the north coast, with east and west facing side slopes. The Strath of Kildonan by contrast drains to the east, and as has already been pointed out, this should lead to some differences in micro-environment between the north and south facing sides of the valley. The distribution pattern

of brochs within each of these straths is considered in turn below, and finally comparisons and contrasts are drawn among the three straths.

Distribution within Strath Naver

There are thirteen locations within the valley of the Naver which could be brochs. Eleven of these may definitely be classified as brochs on the basis of visible structural characteristics, and two are less certainly identifiable as brochs, that is, Skaill (SN 9) and Eilean Garbh (SN 10; Figure 57b) (see Chapter 10). Three of the certain brochs are located along the shores of Loch Naver at the extreme south-west end of the strath, one on the north side of the loch, and two on the south side (Figure 69). Only Dun Creagach (SN 17; Figure 68) has clear evidence of being sited on an islet in the loch with a causeway leading to it. The other two sites are located on the loch shore, and although there is tenuous evidence of a possible causeway at Coill'Ach a'Chuil (SN 15), there is no hard evidence that either it, or Grummore (SN 16), were ever defensively sited within the waters of the loch. It is possible however that there may have been substantial changes in the shoreline and water level of the loch since the brochs were occupied, and the possibility that Coill'Ach a'Chuil and Grummore were once located within the loch, has to be borne in mind.

The other ten sites in Strath Naver are located in the lower part of the strath after a substantial gap of 7km from the east end of Loch Naver (Figure 69). There is evidence of settlement within this 7km gap. For example, the pre-clearance township of Rosal with an Iron Age souterrain in its midst, lies on the east bank of the Naver within this area (Corcoran 1967-8; Fairhurst 1967-8), yet there are no recorded sites of brochs. The reasons for this may lie in inadequate survey work, or may be related to the location characteristics of brochs in the strath. It is noticeable that the gap is the only major area of forestry in the strath, the Naver Forest, planted by the Forestry Commission nearly twenty years ago. It may be that there has been a heavily denuded site or sites in the area, destroyed by forestry planting. In this connection it should be noted that the discovery of badly ruined brochs in Sutherland District by the OS

Figure 68

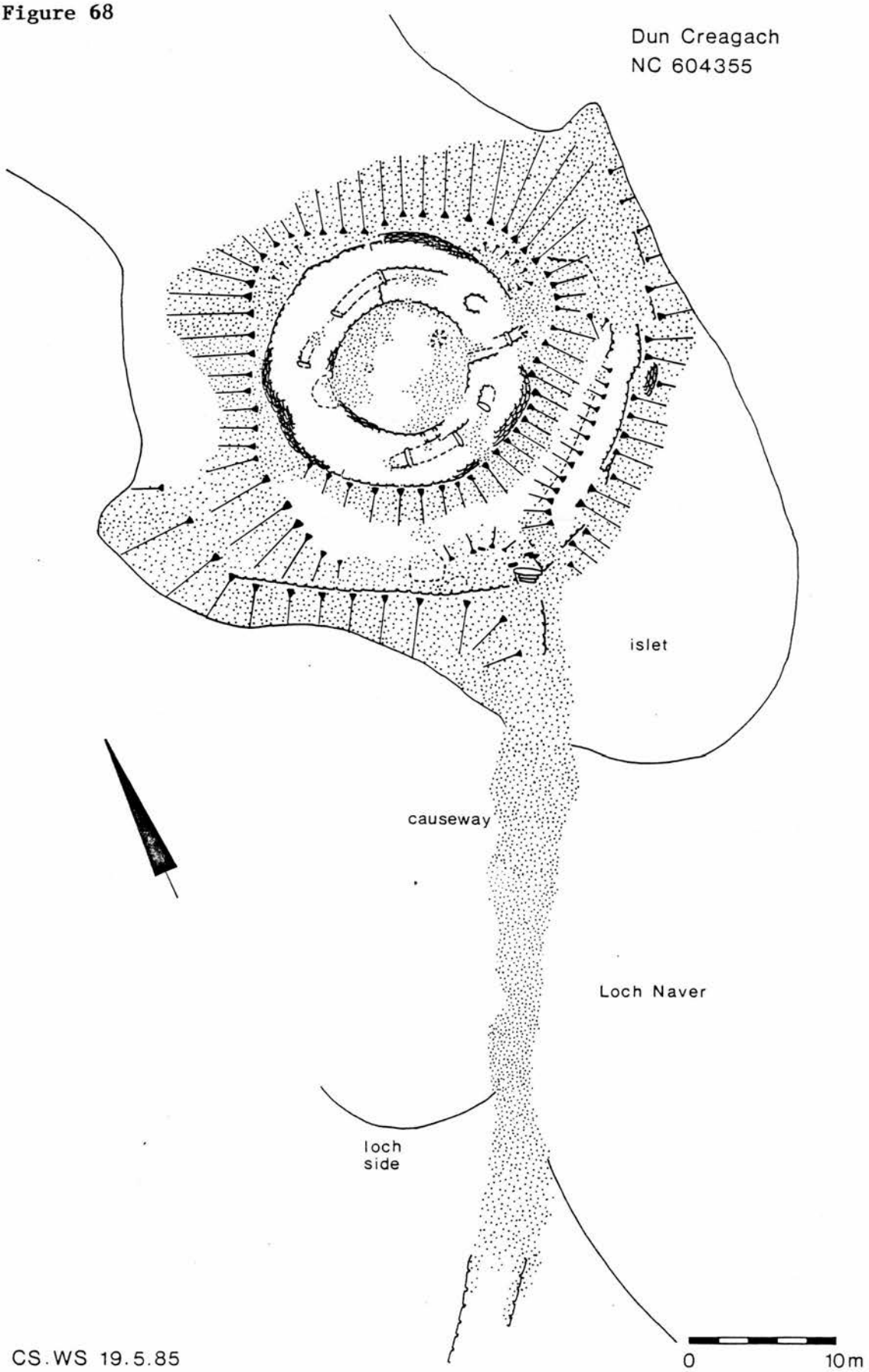
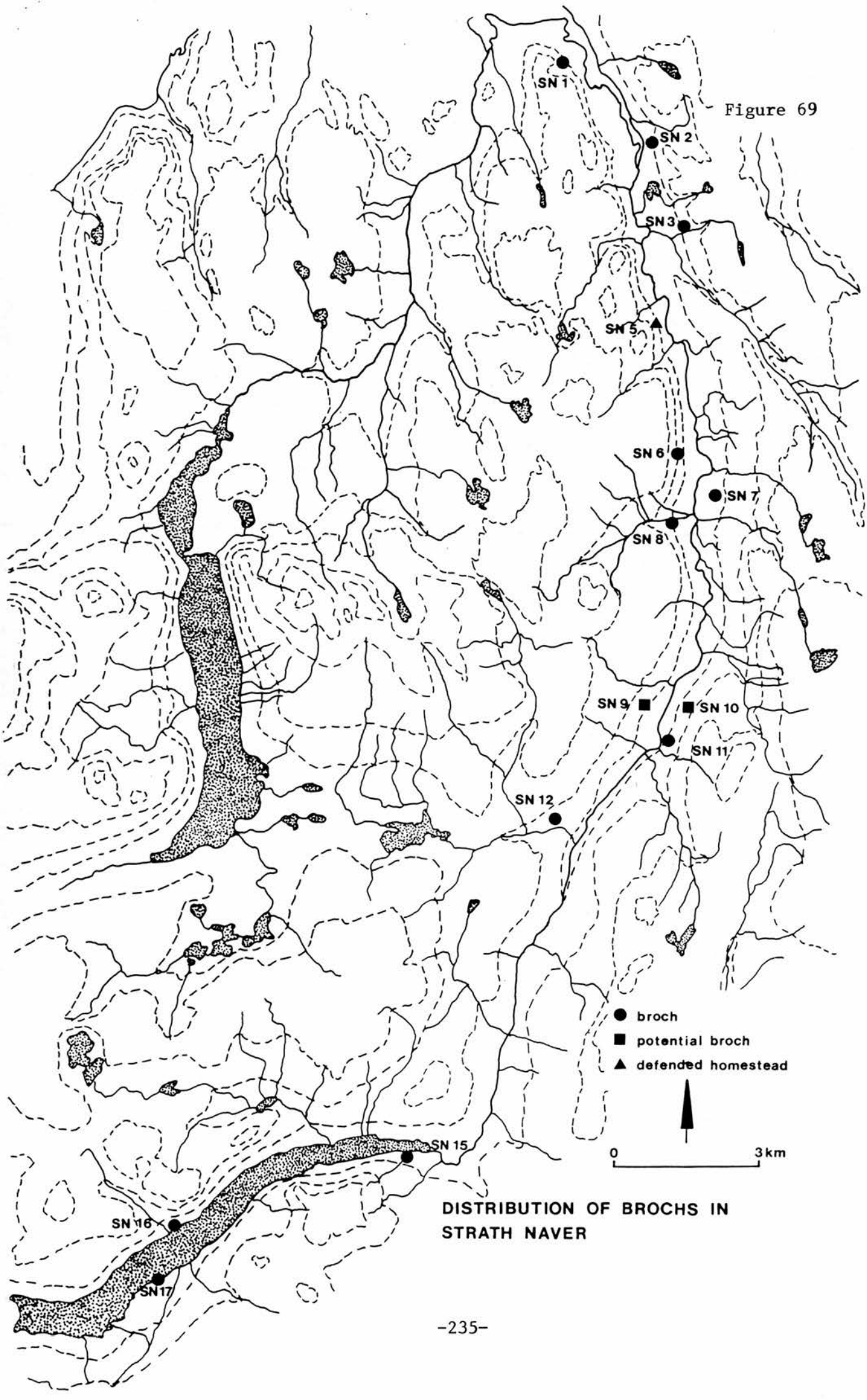

Dun Creagach
NC 604355
islet
causeway
Loch Naver
loch
side
CS.WS 19.5.85
0
10m

Figure 69



DISTRIBUTION OF BROCHS IN STRATH NAVER

during the course of map preparation, took place about 1980, long after the Naver Forest had been planted. It is possible however that there are no broch sites in the gap. The valley of the Naver is narrow at this point, and only begins to open out into a substantial floodplain, where it is joined from the west by the Langdale Burn (Figure 69). It is interesting that Langdale Burn broch (SN 12) is located exactly at this confluence, sited well back from the Naver on a strong naturally defensive site on the north bank of the Langdale Burn.

Most of the certain and less certain brochs in the lower part of the strath are very similarly sited, as can be seen from the plans in the site catalogue. They are located on the edge of fluvio-glacial terraces (known as kame terraces) which occur on either side of the Naver about 30-50m above its level floodplain. The drop down to the floodplain from the terraces is always very steep, if not in fact precipitous. The more gentle approaches to the sites over the terraces are usually protected by a series of ramparts and ditches. It is obvious that the brochs in the lower part of Strath Naver have been primarily sited to take advantage of the strong natural defence provided by the kame terraces, which has then been supplemented by artificial defensive measures. It is because of this repetition of strongly defended location amongst the majority of certain brochs in the lower part of the strath, that it is possible to assign the sites of Skaill (SN 9) and Eilean Garbh (SN 10; Figure 57b) to the likelihood of being also brochs. Both of these sites occupy suitable locations on which brochs might have been expected.

It is interesting to note that Cnoc Dalveghouse (SN 5; Figure 58b), a site identified as a defended homestead (see Chapter 10), occupies a location very similar to both the certain and less certain brochs in the strath, with a steep drop down to the strath floor on its eastern flank and a rampart and ditch defence across all other approaches. It also fits into the spacing pattern of the broch sites (see below), filling a gap in broch distribution on the west side of the strath. Cnoc Dalveghouse cannot be identified as a broch in terms of its visible features, but its locational characteristics must raise the possibility that it is contemporary with the brochs in the strath

fitting into the settlement and land use pattern of the time, with consequent difficulties in explaining the reasons for the apparent differences in the morphology of the two types of site.

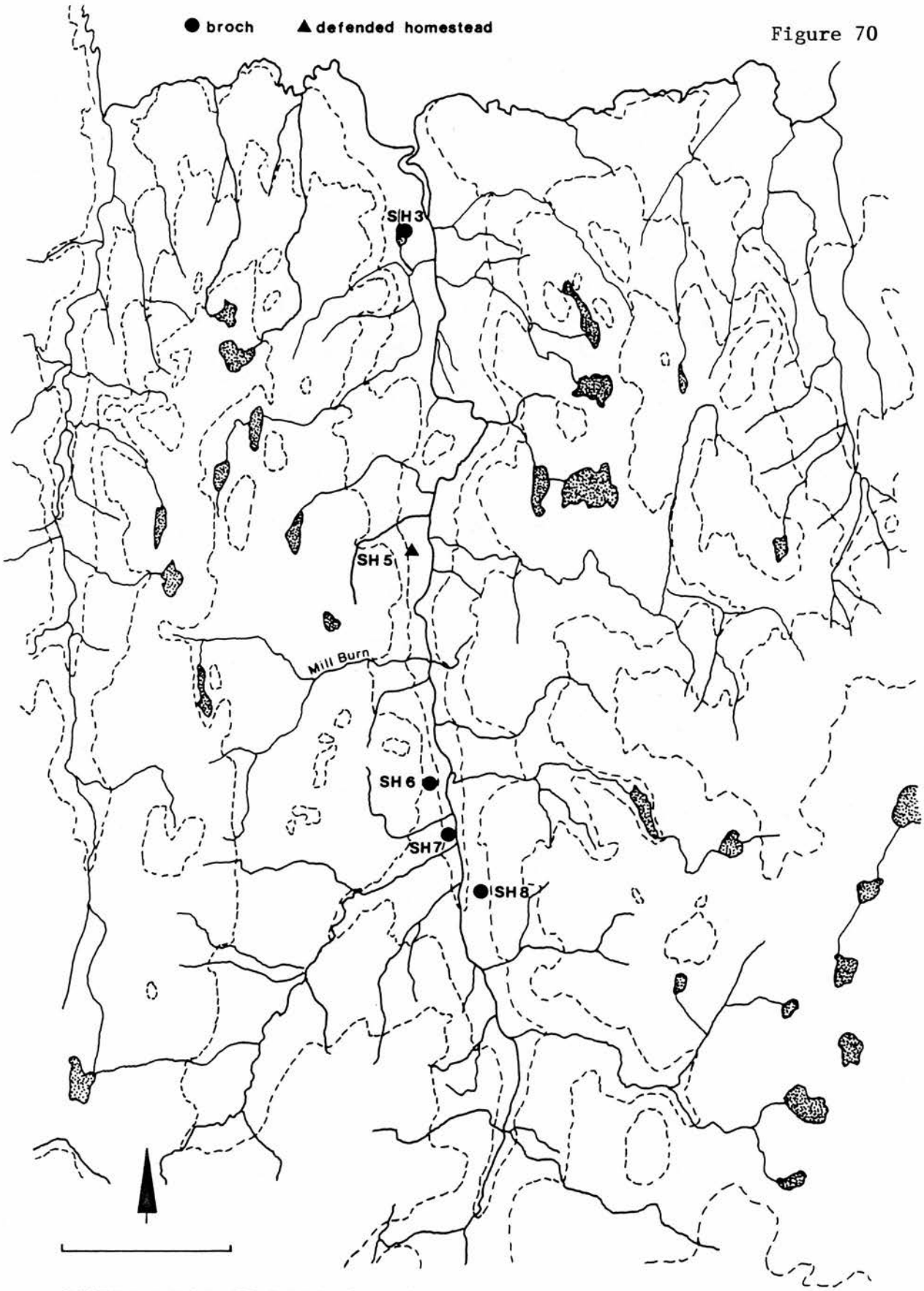
The broch sites are spaced out along the strath on either side (Figure 69). There is no notion of true equality of spacing, but the sites do appear to divide up available cultivable land between them, particularly the fertile strath floor. It is not possible to estimate how much of the strath sides may have been connected with each site, until detailed studies of micro-environments in the strath have taken place. It seems clear from the number of brochs and their spacing that their function is connected first and foremost with the use of parcels of cultivable land, rather than any other factor. Having said that, two sites in the very north of the strath, the Sandy Dun (SN 1) and Allt a'Chasteil (SN 3), also command an admirable view of the modern routeways into the north of the strath from the east and west respectively, although both sites are in fact situated on the opposite side of the strath from the entry point of the routeways. It is possible that the modern routeways have a very long history, as the nature of the terrain makes it difficult to find alternative routes into the north-south trending strath. It may however simply be coincidence that these two sites are located to command a view of the routeways.

Distribution within Strath Halladale

There are four locations within Strath Halladale which would appear to be brochs. The sites, apart from The Borg (SH 8), are badly ruined, so that it is difficult to be certain of identification, but it seems fairly clear that The Borg, Loch Mor (SH 3; Figure 59a), Trantlemore (SH 6), and Carn Liath (SH 7) are all brochs. A fifth site, Upper Bighouse (SH 5; Figure 59b), would appear to be a defended homestead, similar to Cnoc Dalveghouse in Strath Naver (see Chapter 10).

The furthest south broch is The Borg, located on a rocky knoll on the east side of the strath just at the point where the downstream alluvial terraces of the strath floor begin (Figure 70). No further broch site should perhaps be expected upstream of this point, and indeed none was found during the survey by Mercer of this area (Mercer

Figure 70



DISTRIBUTION OF BROCHS IN STRATH HALLADALE

1980). The alluvial floodplain terraces continue downstream on either side of the Halladale river until a point about 1.5km beyond Upper Bighouse, where the river enters a narrow rocky channel with little or no alluvial terraces on either side. The rocky channel extends for about a kilometre before opening out into a very flat floodplain through which the river meanders for 2-3km. There is much evidence of oxbow cut-offs, marshy patches and recent drainage in this floodplain, indicating an area subject to severe flooding in the past. There are no broch sites along the Halladale either in the vicinity of the rocky channel or the area subject to flooding. The River Halladale is reckoned to offer the largest variety of fluvio-glacial landscape over a short distance of any river in Sutherland (Ross, Omand and Futty 1982, 56). The above description bears this out, and the distribution of brochs would appear to be related to the cultivation opportunities offered by that fluvio-glacial landscape.

The furthest north broch in the strath is Loch Mor (SH 3; Figure 59a), just beyond the end of the marshy floodplain where it is cut off by a morainic ridge of sand and gravel. Loch Mor lies in an area which has been affected by sand and gravel workings, and the loch level seems to have dropped, probably as a result of supplying water for washing the sand. An old shoreline can be seen around the sides of the loch, and the site of the broch, now so badly ruined as to be almost unidentifiable, would appear to have once been located within the waters of the loch, possibly approached by an artificial or natural causeway. In this respect it would have resembled Dun Creagach in Loch Naver (SN 17; Figure 68), and the broch of Greysteil Castle in Loch Rangag in Caithness.

Upper Bighouse (SH 5; Figure 59b) lies 6km to the south of Loch Mor, close to the north end of the fertile alluvial floodplain terraces in the middle reaches of the River Halladale. It occupies a similar location to the brochs of Trantlemore (SH 6) and Carn Liath (SH 7), sited on the edge of a kame terrace only 20m above the cultivable alluvial terraces of the strath floor, but it is noticeably more heavily defended, both naturally and artificially, than either Trantlemore or Carn Liath. The brochs of Trantlemore, Carn Liath and The Borg are fairly equally spaced in the upper part of the valley,

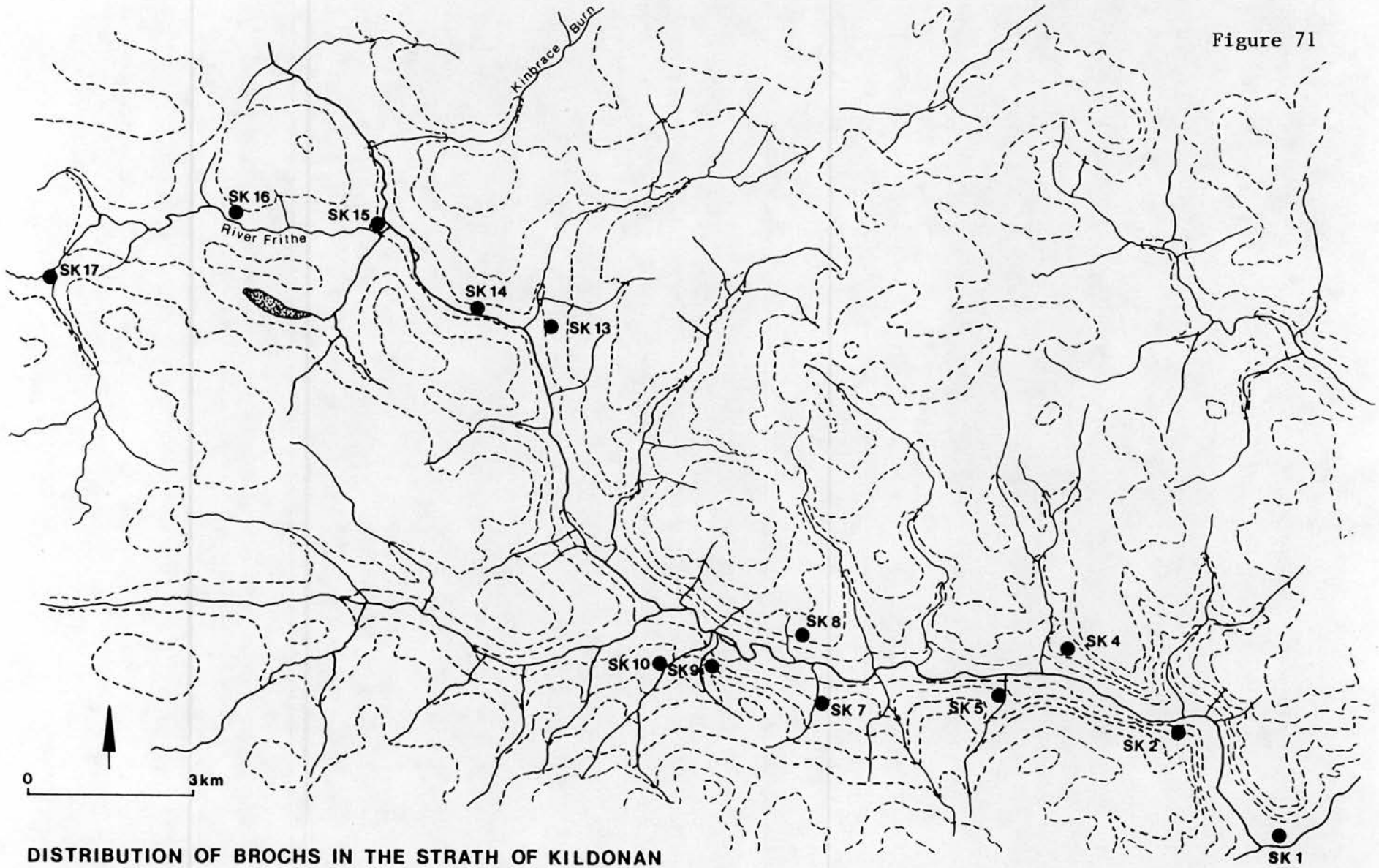
the former two on the west side of the strath, the latter on the east side, but there is a substantial gap between Trantlemore and Upper Bighouse, which again lies on the west side of the strath. It seems possible that there may be a missing broch site somewhere in the vicinity of the Gleann a'Mhuilinn or Millburn, which enters the River Halladale from the west about 2km north of Trantlemore (Figure 70). Upper Bighouse from its location, and the fact that it is the only site in the substantial gap to the north of Trantlemore, could be identified as another broch, if it were not that its visible features point to it being a defended homestead. It has to be considered as a possibility that Upper Bighouse is contemporary with the brochs in Strath Halladale, as in the case of Cnoc Dalveghouse in Strath Naver.

The west side of the strath would appear to be the favoured side in Strath Halladale, only the Borg being located on the east side. None of the sites are as dramatically, or as obviously, located for defence as the sites in Strath Naver, although both The Borg and Upper Bighouse would appear to have a defensive element in their siting, and Upper Bighouse has a surrounding rampart and ditch. There is a lack of opportunity for good natural defence in Strath Halladale, in that the kame terraces are not so high above the strath floor, nor do they drop so steeply, as in Strath Naver. This fact however makes the lack of artificial defences at Trantlemore and Carn Liath even more inexplicable, when they are compared with the neighbouring defended homestead of Upper Bighouse, and with the broch sites in Strath Naver.

Distribution within the Strath of Kildonan

There are twelve certain or probable brochs within the Strath of Kildonan. Two of these lie within Strath na Frithe, a tributary entering the Strath of Kildonan from the west (Figure 71). Strath na Frithe lies beyond the location of the furthest upstream, firmly identified, broch in the Strath of Kildonan, that is, Suisgill (SK 14). The two brochs in the valley of the Frithe, Allt an Duin (SK 17) and Feranach (SK 16), are located about 3.5km apart, and Feranach lies about 3km from the junction of the Frithe and the Helmsdale rivers. At the junction there is the possibility of another broch at Dalcharn (SK 15), shown on OS maps as a cairn partly underlying the railway line. A broch at this point would not be out of keeping either with the

Figure 71



DISTRIBUTION OF BROCHS IN THE STRATH OF KILDONAN

spacing of broch sites in Strath na Frithe or the Strath of Kildonan. Against its identification as a broch is the fact that it appears to be located on the alluvial floodplain terrace of the valley floor, whereas all the other brochs in the Straths of Kildonan and na Frithe (and also in the other two study areas) are located above floodplain level, usually on kame terraces on the strath sides. There would seem to be no reason in terms of favourable micro-environments why there should not be a broch at the junction of the Frithe and Helmsdale, and for that matter further upstream towards the Kinbrace Burn, which enters the Helmsdale from the east (Figure 71). Brochs had been identified at the junction of the Kinbrace Burn and the Helmsdale by the antiquaries (Anderson 1890, 189), but these would appear to have been misidentifications of cairns. Strath na Frithe would appear to represent the upstream limit of broch distribution in the Strath of Kildonan.

Downstream of the broch of Suisgill there is a 6-7km length of the Strath of Kildonan with only one possible broch site in it, that is, Upper Suisgill (SK 13) on the north side of the strath about 1.2km below Suisgill. Upper Suisgill cannot be positively identified as a broch (see Chapter 10), but there seem to be good geographical reasons for expecting a broch site in this area of the strath. For example, the alluvial fan at the junction of the Kildonan Burn with the Helmsdale seems a suitable location for a broch, judging from general locations of brochs elsewhere in the strath, but no site has been identified at this point. Either there are broch sites still to be discovered in this area of the Strath of Kildonan, or other reasons must be sought for their absence.

The brochs in the lower part of the Strath of Kildonan are distributed on either side of the strath, but by no means in a regular pattern. The area showing the most regular spacing is the south side of the strath in its lower reaches (Figure 71). Here there are five brochs spaced fairly regularly apart, three of them located at about 60m OD, close to the alluvial fan of a tributary stream of the Helmsdale, that is, Eldrable (SK 5), Gylable (SK 7) and Kilearnan (SK 4). The exact position of the destroyed broch of Craig Marrill (SK 2) cannot unfortunately be determined, but it may be possible to suggest that it

was located at about 30m OD in the vicinity of the modern township of Marrel above a wide alluvial flat in the strath bottom (Figure 71).

The regular pattern on the south side of the strath is not replicated on the north side, the side which might have been expected to be more favourable for settlement. Here, opposite the five brochs on the south side of the strath, there are only two brochs, Balvalaich (SK 8; Figure 57a) and Kilphedir (SK 4). Sites of brochs were identified by the antiquaries in the junctions of the Caen and Torrish Burns with the Helmsdale (Anderson 1890, 188), but no broch sites in these areas have subsequently been identified. There seems to be no geographical reason for the absence of more broch sites on the north side of the Strath of Kildonan in its lower reaches, the junctions of the Caen and Torrish Burns with the Helmsdale River providing similar, if not slightly better, micro-environments than the junctions of the Kilearnan, Gylable and Eldrable Burns on the south side of the strath. Either there are broch sites still to be identified, or the reasons must lie in unknown factors of a socio-economic or socio-political nature.

The broch of Kilphedir on the north side of the strath is eccentrically located, not only in terms of all the other broch sites in the strath, but also in terms of most of the brochs lying within the Sutherland straths. It is located at about 140m OD, well above the level of the first kame terrace on the strath side. The area of the first terrace is in fact occupied by a number of hut circles and clearance cairns, upon which the broch of Kilphedir looks down. The eccentric location of the broch of Kilphedir may have some relationship to the apparent lack of brochs on the north side of the strath in its vicinity, but the exact nature of that relationship is impossible to guess. It should be borne in mind that brochs may not represent the full pattern of contemporary settlement distribution in a strath, as evidenced by Cnoc Dalveghouse in Strath Naver and Upper Bighouse in Strath Halladale. In the Strath of Kildonan it is possible that hut circle settlements may have fitted into the contemporary pattern of settlement and land use, more so than in the other two straths, where there seems to be less of this type of site.

Comparisons and Contrasts

The most striking aspect of the distribution of brochs in all three straths, is that they appear to relate to the presence of alluvial terraces in the strath floor, alluvial fans at the confluence of tributary streams with the main river, or limited areas of better quality soils, such as, brown forest soils (Futty and Towers 1982). These soils present the best opportunities for cultivation not just within the straths, but also within the whole District, where soils are predominantly peat and peaty podzols (Figure 63). Most of the brochs in the three straths, are located on the edge of kame terraces on the strath sides, overlooking the more fertile soils of the valley bottom. There are occasional exceptions to the general rule, such as, the broch of Kilphedir (SK 4), located some distance above the floodplain of the Helmsdale. During the period brochs were occupied it is possible that there was also cultivable land on the sloping strath sides behind the brochs, but the extent of this is impossible to estimate in the current poor state of palaeo-environmental knowledge for the District.

All of the brochs are located above the level of the strath floors, with the possible exception of the doubtful broch of Dalcharn (SK 15) in the Strath of Kildonan. The excavation at Upper Suisgill in the Strath of Kildonan demonstrated that settlement and cultivation did take place on valley floors, despite the flood risk, before the period when brochs were occupied, possibly continuing through that period in some form (Barclay 1985). Brochs therefore must have been located above floodplain level for particular reasons. It is possible that there was a higher flood risk in wetter climatic conditions, so that it was sensible to have the broch located at a higher level. It also seems sensible to keep as extensive a building as a broch out of the limited area of arable land, locating it on less valuable ground. The brochs in the lower part of Strath Naver seem to indicate however that the overriding reason for location on the kame terraces above the floodplain was the need for strong defence. The brochs in Strath Naver follow this rule almost to extremes, but it is clear that defence may also have been a consideration in site selection for many of the brochs in the Strath of Kildonan and Strath Halladale. It is not clear

why broch locations in Strath Naver needed to be so heavily defended, both naturally and artificially, but there appears to be a higher density of sites in this strath with few obvious gaps, so that pressures on available cultivable land may have been high.

The Strath of Kildonan has the most enigmatic distribution pattern with many apparent gaps. Strangely the most regularly spaced distribution of brochs occurs on the south side of the strath in its lower reaches, an area that might have been considered less favourable for cultivation, because of its north facing slopes. This may be a further indication that the fertile floors of the straths were very important during the period of broch occupation, more so than the slopes of the strath sides. The strath floors are sheltered, and even in the east-west trending Strath of Kildonan would receive sunshine for a considerable part of the year. The alluvial terraces of the floodplain of the meandering Helmsdale occur on either side of the river, just as much on the south side as on the north side, and hence the occurrence of a large number of brochs on the south side of the strath may not be that unusual after all.

11.4 Landscape and Broch Function

The purpose of this section is to consider whether the available evidence for the contemporary relationship between brochs and the land gives any indication of the function or functions of brochs in Sutherland. It is obvious from the foregoing discussion that there are many serious gaps in the knowledge of brochs in their contemporary landscape setting. This not only includes a shortage of detailed information on past micro-environments in Sutherland's varied terrain, but a complete absence of information on the dates of Sutherland brochs and their chronological relationships with other elements of the settled landscape, such as, defended homesteads, hut circles, and the recently discovered site at Upper Suisgill, indicative of intensive occupation of the strath floors. The unknown factors are so many and so crucial, that they seriously devalue any attempts to approach an understanding of the function or functions of brochs in Sutherland through their role in the contemporary landscape. Only a few general statements can be made, with an indication of avenues for

further research to help elucidate this intriguing problem.

The distribution of brochs in Sutherland would appear to be related to the general pattern of settlement and land use in the District. Brochs fit into the palimpsest of occupation in the District's more favourable environments, although their exact chronological relationships with other elements in the palimpsest is unknown. They would appear to be related to areas of land suitable for cultivation, but the extent of these parcels of land cannot be estimated in the current state of palaeo-environmental knowledge for the District. It almost goes without saying that there would also have been considerable areas of land available as pasture at the time brochs were occupied, with an open birch/hazel woodland covering upper slopes, and possible large relict areas of Bronze Age cultivation, where pressures of grazing had not allowed a tree cover to regenerate.

There is evidence of variety in the straths in that not all parcels of potential cultivable land have a broch site connected with them. This is not the case in Strath Naver, where it is possible that the distribution of surviving broch sites represents the land division pattern during the priod when brochs were occupied. In Strath Halladale and the Strath of Kildonan there would appear to be gaps in the distribution. There are several possible explanations for these.

(1) It may be that the apparent potential cultivable land in the strath floor was not extant at the period when brochs were occupied. The Rivers Naver, Halladale, and Helmsdale all meander in their lower reaches, hence the high flood risk. A feature of meandering rivers is continuous shifting in the course of the river, with areas of alluvium being constantly washed away and deposited. The present configurations of the floodplains of the rivers are not necessarily the same as they were during the period of broch occupation.

(2) It may be that there are missing brochs, destroyed or so badly denuded as to be unrecognisable.

(3) It may be that the gaps represent an intangible element in the determination of land divisions and broch distribution. The eccentric location of the broch of Kilphedir, in particular, is not explicable in terms of normal broch location in the straths of Sutherland.

(4) It may be that there were other types of contemporary sites filling the gaps, such as, timber built houses.

The brochs in the Sutherland straths would appear to have had a function(s) connected with gaining a living from the land. It is not possible to say that they were simply the settlement form of their time, as there are possible contemporary sites of other types, which are perhaps more obviously habitations. The brochs are also noticeably located with a view to natural defence in the three study areas examined. The locations on the kame terraces of the strath sides gives a good outlook over the alluvial flats of the strath floors, and also over any potential routeways through the straths.

Many questions are raised by an examination of brochs and the land in Sutherland, but it is not likely that any further progress can be made in understanding that relationship and the function of brochs in Sutherland until more information is available. The recent work in the Strath of Kildonan, involving archaeological excavation linked to very detailed pollen analysis (Barclay 1985; Haggarty forthcoming), shows the way forward in attempting better to understand brochs in Sutherland. There needs to be more of this kind of work in other straths in the District, aimed particularly at elucidating the relationships between brochs and the hut circle settlements on the strath sides, and brochs and any settlements on the strath floors. The latter requirement is easier said than done, for as Barclay has pointed out, the sites are impossible to locate (1985, 196), except by accident, as was the case at Upper Suisgill. There is also an urgent requirement for some idea of the dates of the brochs in the Sutherland straths. Without this kind of information, the radio-carbon dated pollen diagrams are less useful than they might otherwise be. It will obviously require many further years of archaeological and paleo-environmental effort before any real advance in understanding brochs and the land in Sutherland can be made. As Barclay has said:

"The excavations at Kilphedir, Suisgill, Kilearnan and Crosskirk, combined with the surveys of Mercer and others, are the first modern steps on the long road to an understanding of the later prehistory of the northern mainland of Scotland."(1985, 196).

CHAPTER 12 SITE MORPHOLOGY 1: THE EXTERNAL AREA

Discussion of site morphology in Sutherland is a much less complex undertaking than a similar discussion of brochs in Caithness. There are fewer sites, and the information available from excavation is minimal compared with the evidence for Caithness. The discussion can be divided simply into a consideration of the external area around the broch structure, and an examination of the nature of the broch structure itself. In this chapter the archaeological elements of the immediately external area of brochs in Sutherland are considered, outlining the variation in these elements and assessing their significance. The following chapter considers the broch structure.

Although many brochs in Sutherland appear to exist in the landscape as the isolated structures portrayed in the image of the typical broch, there are some which do not. There is a distinct external area around several Sutherland brochs, containing archaeological elements, which need to be considered in attempting to understand the nature of these sites, and also perhaps those sites in the District which do not have such external elements. Section 12.1 discusses the occurrence of external defences around brochs in Sutherland, describing their nature and considering their chronological links with the broch structures which they surround. Section 12.2 assesses the evidence for surrounding buildings at brochs in Sutherland. Section 12.3 considers the function of a defined external area around some brochs in Sutherland, and assesses the significance of the presence or absence of external archaeological elements.

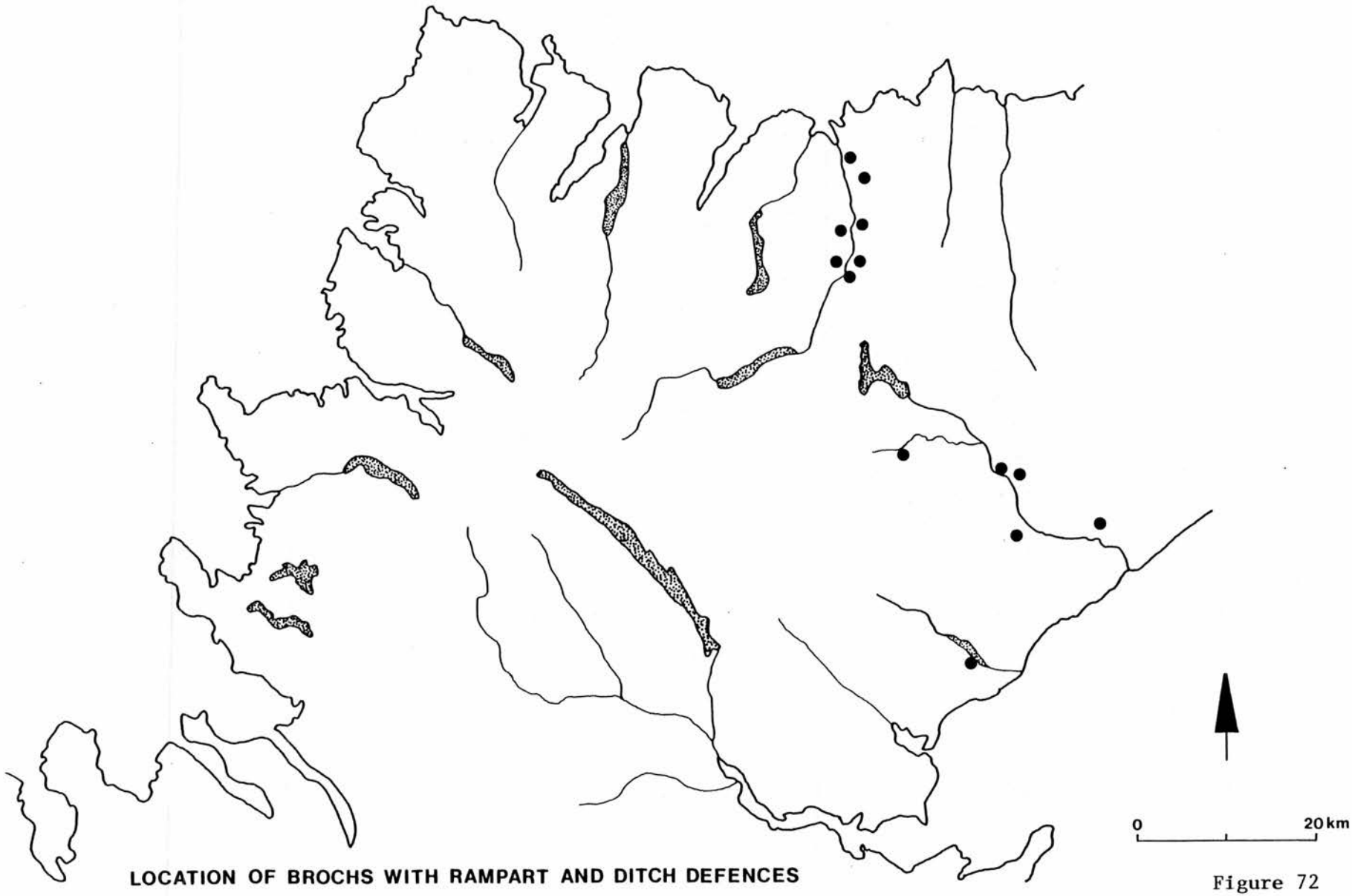
12.1 External Defences

Just over 40% of the brochs in Sutherland appear to have extant external defences. Table 19 (p272) lists those brochs for which there is recorded field evidence for a surrounding artificial defensive system, and its nature. Many of the brochs have a simple enclosing wall, not unlike a number of brochs in Caithness and most of the brochs in Skye. This wall, if it is a contemporary feature, need not necessarily have been intended as a defensive measure, but may simply

have defined an external area integral to the function of the broch structure.

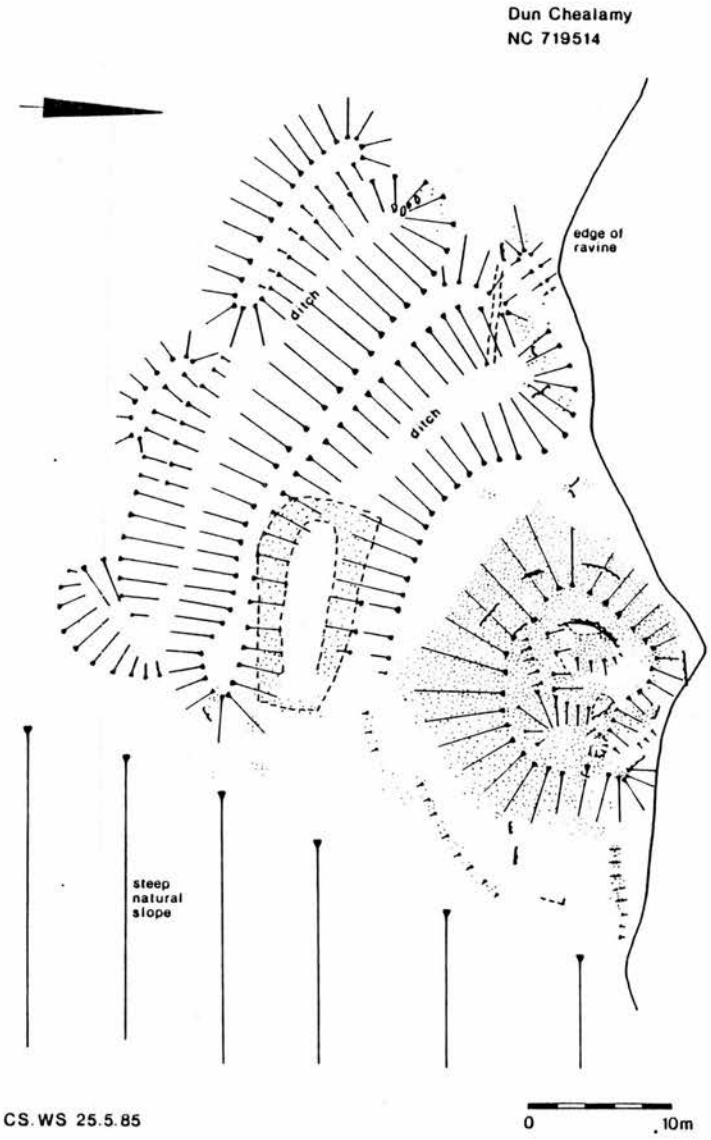
Thirteen brochs however have a distinct defensive system composed of a single rampart and ditch or multiple ramparts and ditches. The occurrence of rampart and ditch defences is distinctly biased (Figure 72). They are to be found almost exclusively in the major straths of Strath Naver and the Strath of Kildonan, two of the Sutherland study areas, more so in the former than the latter. It is possible that the poor field survey record for brochs in Sutherland may mean that the full extent of outer defensive systems has not been identified. For example, outer enclosing walls are easily obscured by debris and later enclosures, and rampart and ditch defences in the east of the District, where the best quality land occurs, may have been destroyed by agricultural improvements. It seems unlikely however that rampart and ditch defences of the kind noted in Strath Naver and the Strath of Kildonan would have gone unrecorded elsewhere in the District, although it is possible. Mercer, for example, recorded the existence of ditches at Dalchork, whereas the RCAHMS made no reference to these in the inventory of Sutherland (Mercer 1980, 119, Mon 181b; RCAHMS 1911a, 136, no 394). Despite these caveats however, it seems reasonable to assume that the distribution of rampart and ditch defences noted in Figure 72 is largely correct.

The design of the rampart and ditch defences varies. Most have been designed to complete a circle of strong defence around the broch structure, of which one flank consists of a strong natural defensive element, usually a precipitous drop down to the strath floor or a tributary burn, for example, as at Dun Chealamy and Eilean Garbh in Strath Naver (SN 8 and SN 10; Figure 73). Only the brochs of Kilphedir (SK 4; Figure 74) and Suisgill in the Strath of Kildonan (SK 14; Figure 75) have a completely encircling rampart and ditch system, the former being the most impressive of the multiple rampart and ditch defences in Sutherland. Sometimes the ramparts and ditches have been constructed on flat terrain, as at Dun Chealamy, with the spoil from the deep ditches being used to form the ramparts. There is slight evidence at Dun Chealamy that the ramparts may have been revetted with

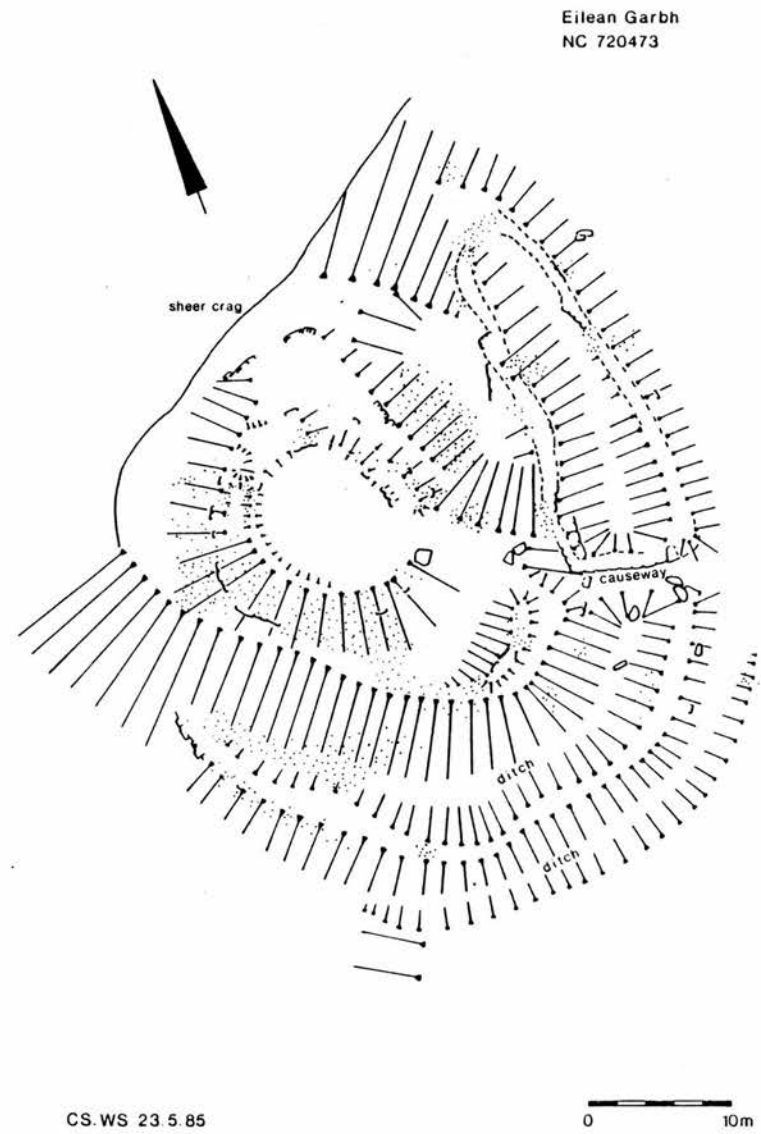


LOCATION OF BROCHS WITH RAMPART AND DITCH DEFENCES

Figure 72


Dun Chealamy
NC 719514
edge of ravine
ditch
ditch
steep natural slope
CS.WS 25.5.85
0
10m

(a)


Eilean Garbh
NC 720473
sheer crag
causeway
ditch
ditch
CS.WS 23.5.85
0
10m

(b)

Figure 73

Figure 74

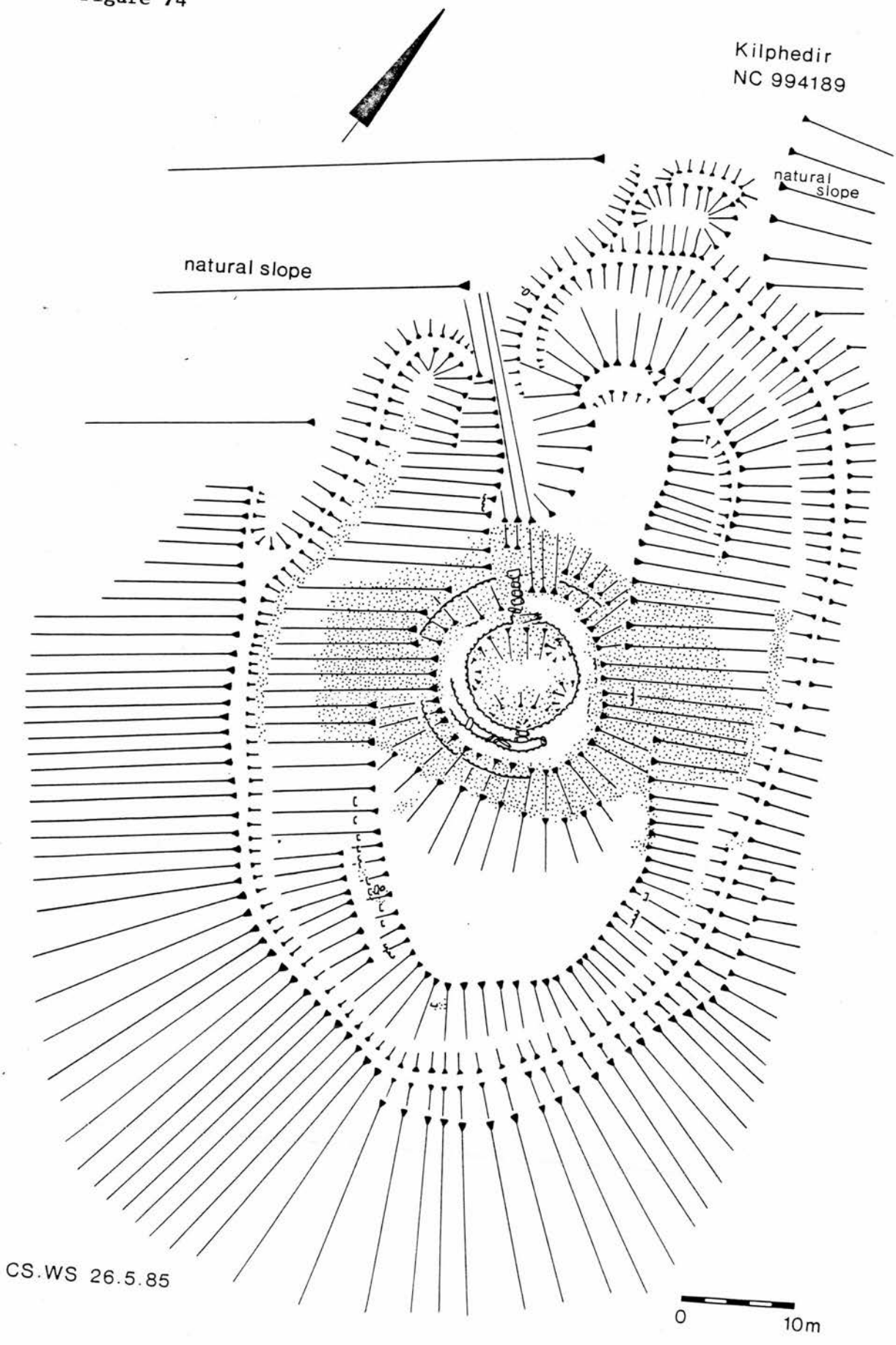
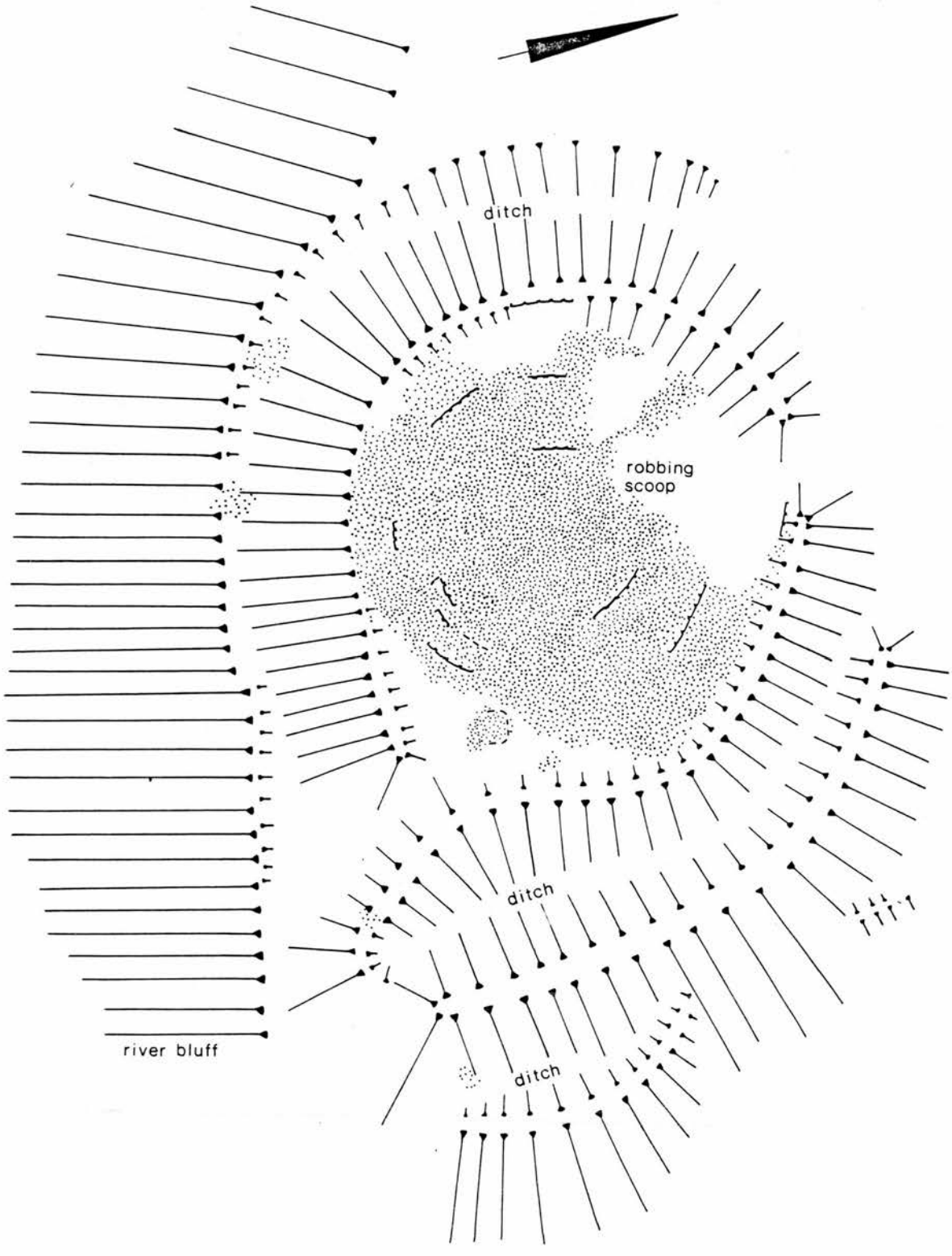

Kilphedir
NC 994189
natural slope
natural slope
CS.WS 26.5.85
0
10m

Figure 75

Suisgill
NC 887253



CS.WS 26.6.83

stone. Sometimes a rampart with an internal ditch has been used as a means of oversteepening a pre-existing slope to increase its natural defensive capabilities. This can be seen at Kilphedir, where the sides of the knoll on which the broch sits have been steepened by the throwing out of a rampart at its base around most of its circuit.

Since the distribution of rampart and ditch defences in Sutherland is so biased, there must have been some particular reason for their occurrence, unless they are to be seen only as indicative of a very localised fashion. During survey some consideration was given to the possibility that the rampart and ditch defences did not correlate with the broch structures in terms of chronology, and that brochs such as Dun Chealamy and Kilphedir may have been built within a set of pre-existing defences, belonging to an earlier and different type of archaeological site.

Most of the broch structures within the rampart and ditch defences are located centrally to the defences in the position which might be expected, if the whole complex had been designed and built as a unit. This is not necessarily however evidence of contemporaneity, as the broch structure may be founded upon a pre-existing structure, also located centrally to the ramparts and ditches.

There is another type of site with rampart and ditch defences in the straths, that is the sites identified as ditched homesteads, Suisgill Lodge in the Strath of Kildonan (SK 11; Figure 60b); Langdale Dun in Strath Naver (SN 12; Figure 58a); Cnoc Dalveghouse in Strath Naver (SN 5; Figure 58b); and Upper Bighouse in Strath Halladale (SH 5; Figure 59b). Cnoc Dalveghouse in particular has a rampart and ditch system to rival any around a broch in Strath Naver.

It was concluded in Chapter 11 that both Cnoc Dalveghouse and Upper Bighouse could be regarded as contemporary with brochs on the basis of their location within the distribution pattern of brochs in their respective straths. It is equally possible however that the ditched homesteads may in fact have pre-existed brochs. If ditched homesteads did precede brochs, it has to be taken as a possibility that the brochs with rampart and ditch defences may be founded on top of such an earlier type of site with a limited distribution in the northern

straths of Sutherland. It is however difficult to prove such a succession by field survey at the majority of sites, and no excavation has taken place on any such site. Against such an hypothesis, is the fact that the ditched homesteads generally do not have a defined external area between the structure and the defences, as noted in Chapter 10, with the possible exception of Langdale Dun (SN 12; Figure 58a). All of the brochs with such defences have a defined external area of varying size. Such evidence however still does not discount the possibility that the broch structures could be founded on earlier defensive sites.

There is only one broch with a rampart and ditch defensive system, for which it is possible to argue for the pre-existence of the ramparts and ditches on field survey grounds alone. This is the eccentrically located and magnificent broch of Kilphedir in the Strath of Kildonan (SK 4; Figure 74). The broch structure is located in the middle of an elongated natural hillock at 145m OD on the north side of the strath. Around the base of the hillock there is a rampart with an internal ditch, strengthened by a further rampart and ditch on the N flank. Around the margin of the summit of the hillock there would appear to be a wall, appearing as a heather covered bank at the N end of the summit, but as stone footings of an outer face in the S. Because of the location of the broch in the middle of the summit area, terraces are formed outside of it to the N and to the S. The broch occupies the full span of the summit from W to E, and the sides of the hillock drop away very steeply from the outer face of the broch wall on these arcs. There would appear to be no means of accessing the S terrace behind the broch, except possibly by a dangerous scramble around the W arc of the broch wall. The broch has only one entrance facing NW, and has no rear access onto the S terrace.

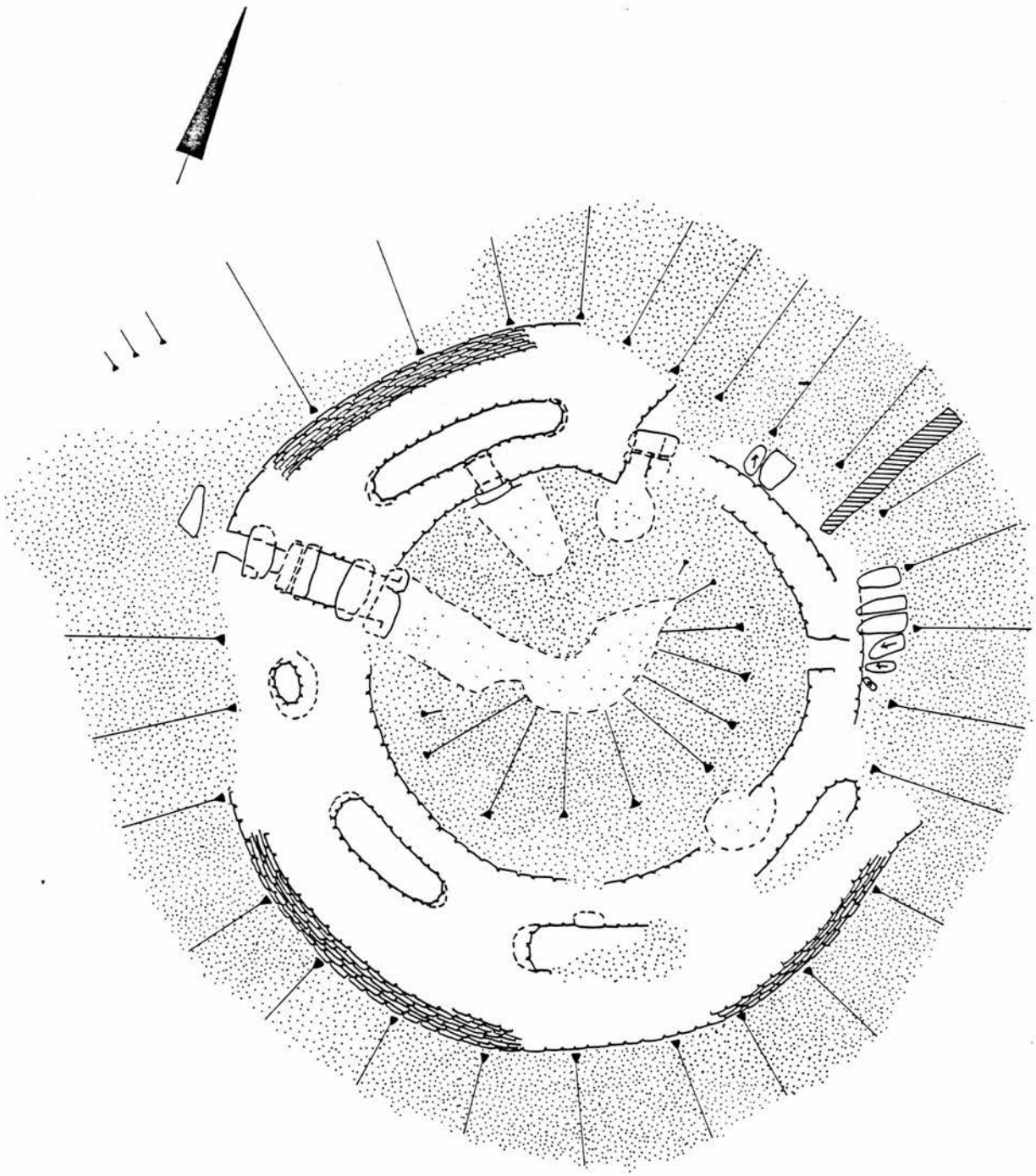
The S terrace would appear to be rather redundant, if the whole complex at Kilphedir was designed as a single unit. If the complex was designed as such, it might be expected that the broch would have been located further back on the elongated hillock, leaving no S terrace. There also seems to be no particular reason to edge the S terrace with a wall if there was no ready access to it. A wall hardly seems required for extra defence, since the slopes to the SW, S and SE are

so steep, and there was no entry through the S arc of the broch wall. It seems more than possible that the broch of Kilphedir was built to take advantage of a pre-existing defensive site, with a possible recutting and strengthening of the defensive system. The area behind the broch was presumably not required and was sterilised, the terrace in front being sufficient. The marginal wall around the summit of the hillock is very denuded, when compared with the well preserved broch wall, an unusual feature if the complex was designed as a single unit. There are no field banks in the area which might have consumed the stone from the marginal wall, but it is possible that the stone went into the construction of the broch. If the broch of Kilphedir was built to take advantage of a pre-existing defensive site, it might help to explain its somewhat eccentric location in terms of normal broch distribution both in the Strath of Kildonan and other Sutherland straths. The broch of Kilphedir is located at an elevation well above the first terrace on the strath side, where brochs are normally to be found (see Chapter 11).

The occurrence of rampart and ditch defences at broch sites in Sutherland is an enigmatic feature. On the one hand the defensive systems seem to fit comfortably both with the central position of the broch structure, and with the natural defensive elements of the individual sites, so that the complex has the appearance of a single design unit. On the other hand there is some evidence that the defensive system at Kilphedir may not be contemporary with the broch structure. Kilphedir however, because of its eccentric location, cannot be said to be particularly typical of Sutherland brochs as a whole, or even only those brochs with an outer defensive system in Sutherland. The presence of defensive systems around both brochs and homesteads in the northern straths of Sutherland might be taken to indicate a particular localised need for defence in this area, except that it is known that a large number of brochs in Orkney, Shetland and Caithness also have defensive systems surrounding them (RCAHMS 1946; see Chapter 6). It may be rather that it is the large number of Sutherland brochs with no apparent outer defences, whether a rampart and ditch or a single enclosing wall, which should be seen as unusual in terms of the wider population of brochs. Sites such as Dun Dornadilla in Strath More and Feranach in Strath na Frithe (SK 16;

Figure 76

Feranach
NC 844273



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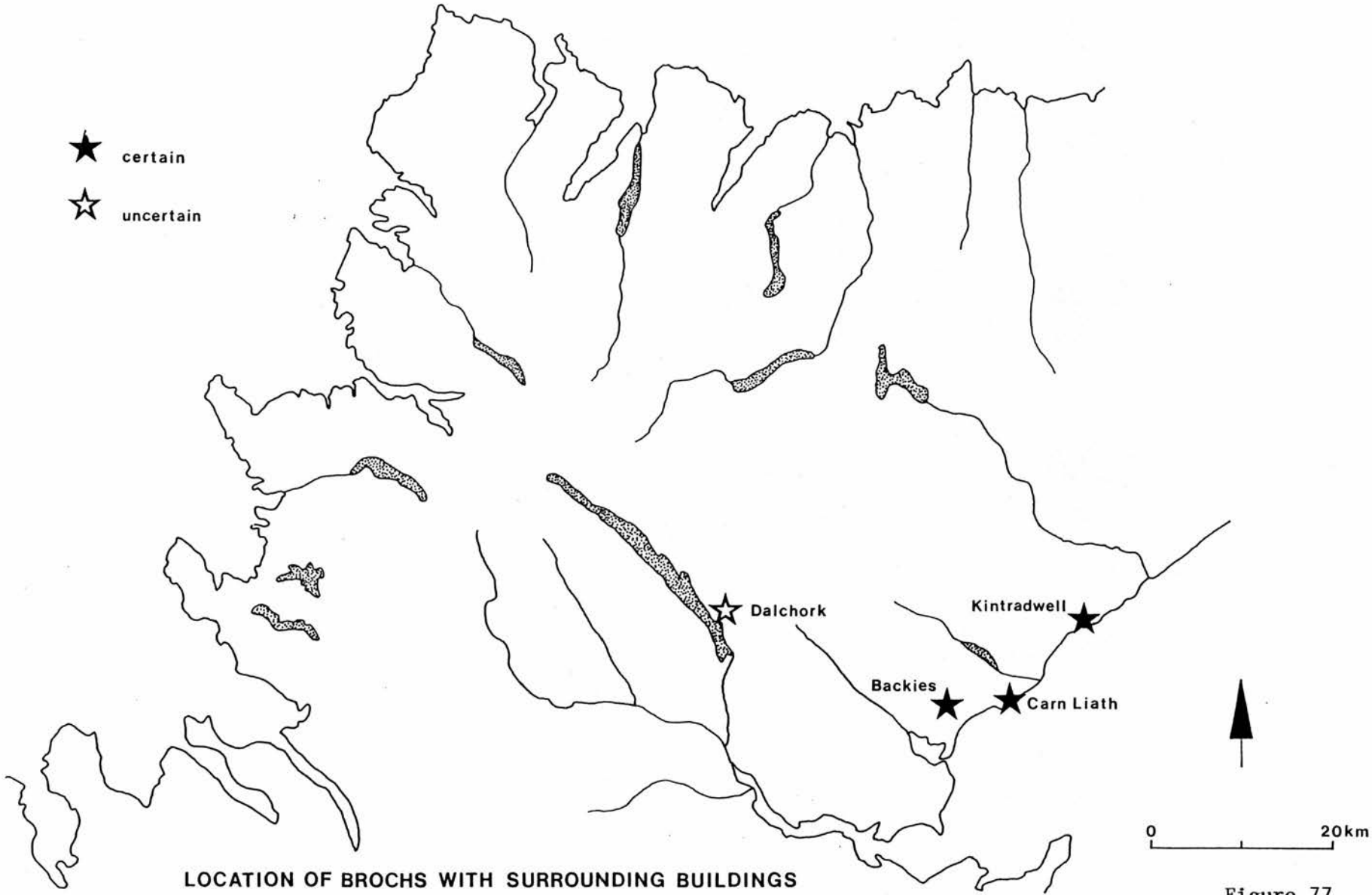
0 5m

Figure 76) in many ways typify the traditional image of the isolated broch structure, but they seem to be at variance both with broch sites in Sutherland which have outer defences, and also with brochs in the Caithness Plain, where a defined external area containing buildings seems to have been a normal feature of broch design (see Chapters 6 and 7).

12.2 Evidence for Surrounding Buildings

Buildings around broch structures in Sutherland can be said with certainty to occur only at three sites: Carn Liath, Golspie; Backies, Golspie; and Kintradwell, Loth. The RCAHMS suggested that there were also surrounding buildings at Achcoillenaborgie in Strath Naver (SN 2; RCAHMS 1911a, 61, no 183) and at Dalchork, Lairg (RCAHMS 1911a, 136, no 394). The visible surrounding buildings at Achcoillenaborgie are probably part of a much later extensive pre-clearance settlement in the area, rather than part of the broch complex (see site catalogue). Similar late remains also overlie and have destroyed the broch of Allt an Duin in Strath na Frithe (SK 17). The broch of Dalchork was not included in the survey for this thesis, but it is possible that it may have surrounding buildings, its appearance from a distance being reminiscent of the mound-on-mound or stepped profile of many broch mounds in Caithness, which undoubtedly contain such buildings (see Chapters 4, 6 and 7, and Figure 31, p110).

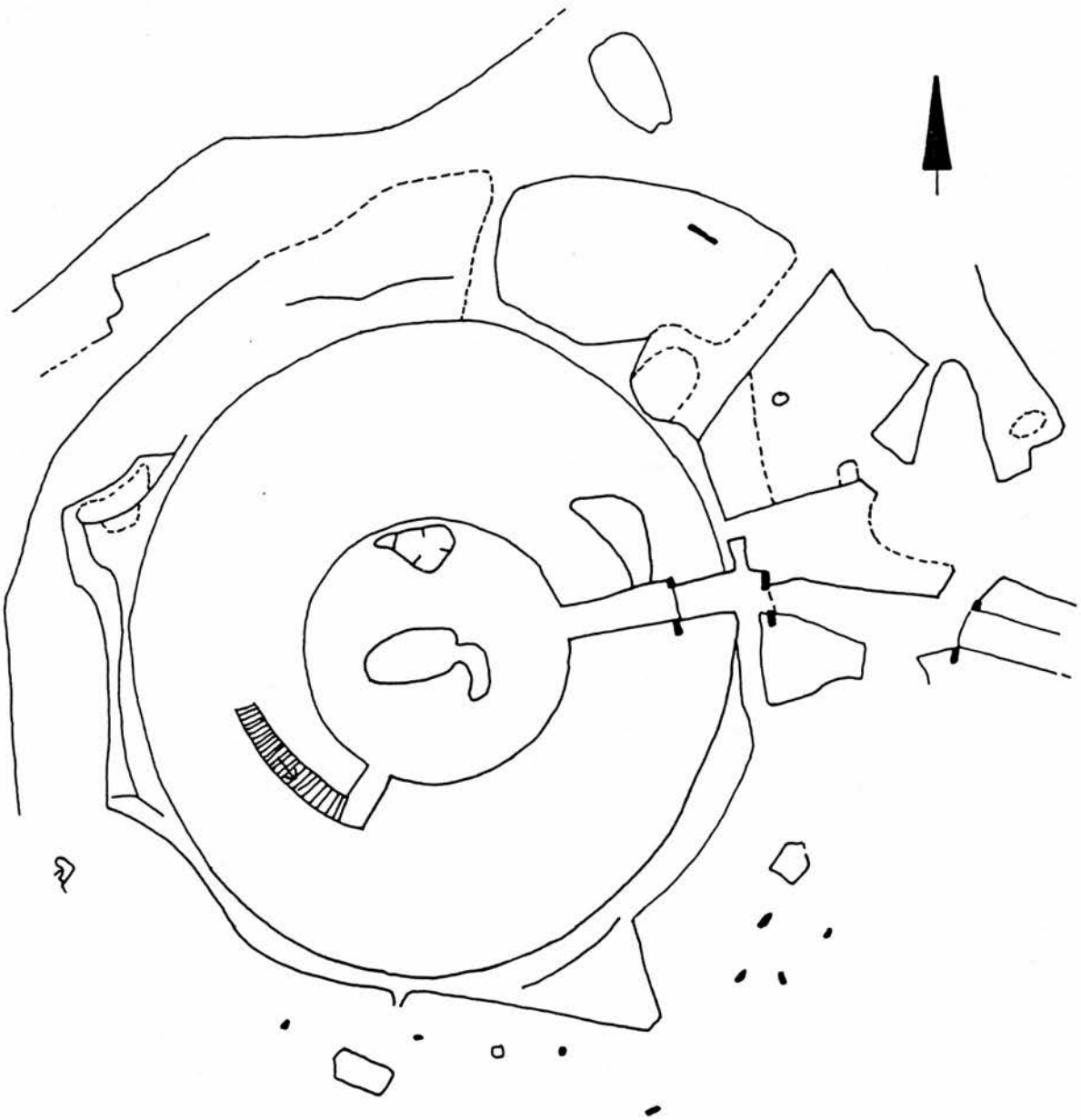
The three sites where surrounding buildings are known to exist, all occur in the eastern lowlands of the District (Figure 77), and have all been excavated. The broch of Dalchork by contrast lies well inland, close to the east shore of Loch Shin, but accessible from the eastern lowlands via Strath Fleet. The brochs of Carn Liath, Backies and Kintradwell were all excavated in the antiquarian period with a consequent poor or non-existent excavation record. Plans of the excavated brochs of Carn Liath and Kintradwell were however made, and these show the presence of stone buildings around the broch structures (Joass 1890, Plates XII and XIV; Figures 78 and 79). In accordance with the commonly held view in the antiquarian period of broch studies, it was judged that the surrounding buildings which had been revealed at Carn Liath and Kintradwell were secondary structures



LOCATION OF BROCHS WITH SURROUNDING BUILDINGS

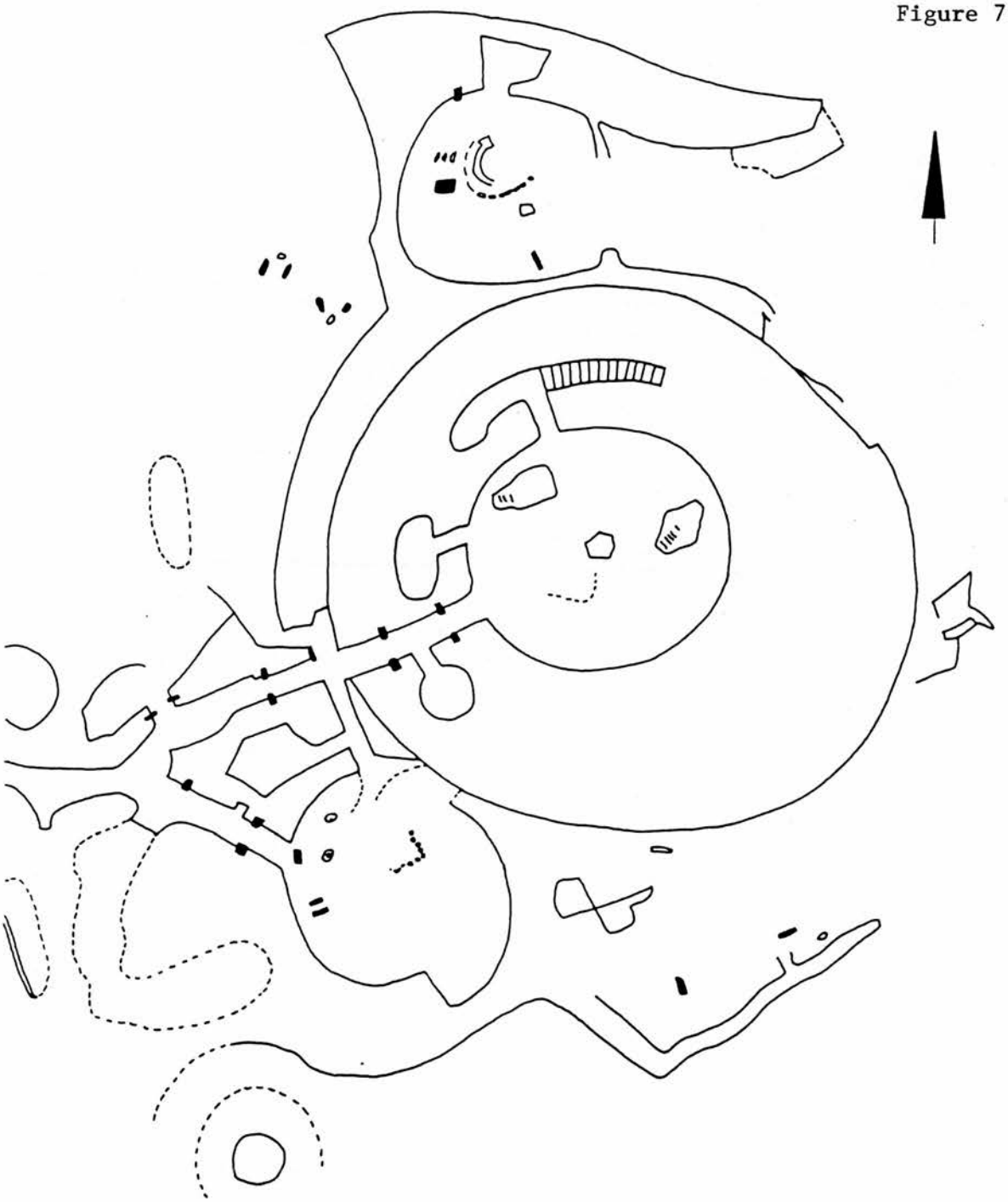
Figure 77

Figure 78



BROCH OF CARN LIATH
after Joass 1890

Figure 79



BROCH OF KINTRADWELL

after Joass 1890

(Joass 1890, 99).

The most striking feature of the plan of the surrounding buildings at Kintradwell is the similarity it bears to the plans of some of the surrounding buildings at excavated brochs in the Caithness Plain, with curvilinear buildings, rectilinear niches, and upright slabs (cf. Nybster EC 8; Figure 38, pl31). Joass recorded that flagged passages led into the small enclosures around the broch, and there were occasional detached pillars as if to support a roof (1890, 98).

Such is the similarity of the plans of Kintradwell and Carn Liath to the plans of excavated Caithness brochs, that it may reasonably be suggested that the brochs of Kintradwell, Carn Liath and possibly Backies, represent a southern extension of the broch complexes known to exist in the Caithness Plain. Accordingly a lengthy sequence of occupation at each of these sites should be expected, with evidence of continuous reconstruction of the surrounding buildings over a long period. Recent partial re-excavation of the broch of Carn Liath provides some evidence in this respect:

"Excavation prior to consolidation at this Guardianship site examined outworks to the NW of the broch. Despite thorough Victorian disturbance, a tentative chronology was established for the site. The Bronze Age was represented by a Beaker fragment and later cist with food vessel and shale washer necklace. Pre-broch settlement, shown by postholes, predated the construction of the broch and attendant ring wall, while later Iron Age activity included the division into outbuildings of the area between the broch and the outer wall by the addition of cross walls. A previously unrecorded circuit wall was identified downslope of the main outworks, and the site produced evidence of shale and iron working" (Love in Disc Exc Scot 1986, 18).

The partial re-excavation of Carn Liath seems to have established a lengthy sequence of site use, possibly stretching back to the Bronze Age, with evidence of a pre-broch settlement constructed in timber. It is interesting that Love has concluded that the surrounding buildings are secondary to the construction of the broch structure and its outer enclosing wall. It was noted in Chapter 7 that the beginning of the sequence of surrounding buildings had not been firmly tied to the chronology of the broch structure in a Caithness context, although there is evidence from Orkney that broch structures may always have had a village of surrounding houses (Carter et al 1984; Beverley Smith pers. comm.). It may be that the surrounding buildings at Carn Liath are indeed secondary to the broch structure there, as concluded by

Love, but it should be borne in mind that Carn Liath is a badly disturbed site, having been excavated in Victorian times and again partially in the 1970s (Corcoran), before its latest partial re-excavation. There must surely remain some uncertainty about the exact chronological relationships across such a complex and disturbed site as Carn Liath, which has also to be kept largely intact as a Guardianship monument. At the moment the partial re-excavation of Carn Liath is suggesting that the traditional image of a broch, sitting in isolation without surrounding buildings, is in fact correct, whereas evidence from the excavation at Howe in Orkney and to some extent from Crosskirk in Caithness is suggesting the opposite for northern brochs (Carter et al 1984; Fairhurst 1984). Some further excavation on a number of sites in the north would seem to be required to test these alternative hypotheses.

The broch complexes revealed by excavation at Carn Liath, Kintradwell, and Backies, are not typical of the majority of Sutherland brochs. It seems clear that prior to excavation these three sites would have been substantial mounds, probably exhibiting the distinctive mound-on-mound or stepped profile, noted at so many sites in Caithness (see Chapter 4). The majority of the Sutherland brochs do not appear as large mounds of debris, but rather as ruins of a single stone structure, with no evidence of any stone built surrounding buildings, although there may be an outer enclosing wall or an outer defensive system. The excavation of the broch of Craig Carril in Strath Brora had in fact drawn this contrast as early as the antiquarian period. Joass noted that no outworks (that is, surrounding buildings) were found at Craig Carril, such as those at Kintradwell and Carn Liath, although the broch was surrounded at a distance of 12ft (3.65m) by a rampart and ditch (1890, 108). No substantial broch mound of the Caithness Plain/Eastern Lowlands of Sutherland type was found in any of the three straths selected as study areas in Sutherland. All of the sites in the straths which may be firmly identified as brochs, exhibit the remains of a single stone structure only, that is, the broch structure. If there were any surrounding buildings at these sites, they were not constructed in stone. Unfortunately no broch in a Sutherland strath has been excavated in modern times to test whether there may have been surrounding buildings built in other materials,

such as timber and turves.

12.3 The Function of the External Area

About 40% of the broch structures in Sutherland are enclosed by an outer wall or defensive system which may, or may not, be contemporary with the broch. A distinct external area around the broch is thereby defined. The existence of this area is particularly noticeable, when the brochs with a rampart and ditch defensive system are compared with the defended homesteads. The latter have no clearly defined external area between the main structure and the defences. The external area around the brochs varies in size and is not particularly large at any site. If the external area, defined by an outer wall or defence, is taken as being a contemporary feature of the broch site, there seems to be a requirement for two particular explanations:

(1) the function(s) of the defined external area at brochs which have them; and
(2) the reasons for the apparent absence of such defined external areas at the majority of Sutherland brochs.

It could be argued that the defined external area between broch structure and outer wall or defences simply provided defence in depth, particularly where the approach to the broch structure is across flat terrain, as for example, at Dun Chealamy in Strath Naver (SN 8; Figure 73a). A consequence of such an explanation would be the acceptance that defended homesteads did not need such defence in depth. It could be that a defined external area had other functions, for example, to enclose and protect stock, or to enclose and protect timber buildings of which no visible trace has survived. There is unfortunately no means of deciding amongst such alternative explanations, until some excavation in the external areas of Sutherland brochs has taken place.

In seeking to understand the function or functions of the external area at some Sutherland brochs, there has to be some significance in the fact that about 60% of the brochs in the District do not seem to have any outer enclosing wall or defensive system, and therefore no apparent defined and protected external area. Allowance has to be made for the poor quality of the survey record for Sutherland, but

nonetheless there seems to be a large number of brochs which stood in the landscape as isolated structures. Some of these lie within the three straths selected as study areas, despite the fact that Strath Naver and the Strath of Kildonan are also the areas with the greatest concentration of brochs with outer defences. These isolated broch structures are as follows:

Strath Naver

Langdale Burn (SN 12) (no room for outworks on steep sided knoll)
Grummore (SN 16) (all approaches to broch across flat terrain, but loch shoreline may have moved)

Strath Halladale

Loch Mor (SH 3) (may have been on a promontory in a loch)
Trantlemore (SH 6) (approaches to broch across flat terrain on three sides)
Carn Liath (SH 7) (approach to broch across flat terrain from N, otherwise gentle slopes)
The Borg (SH 8) (on a steep sided knoll)

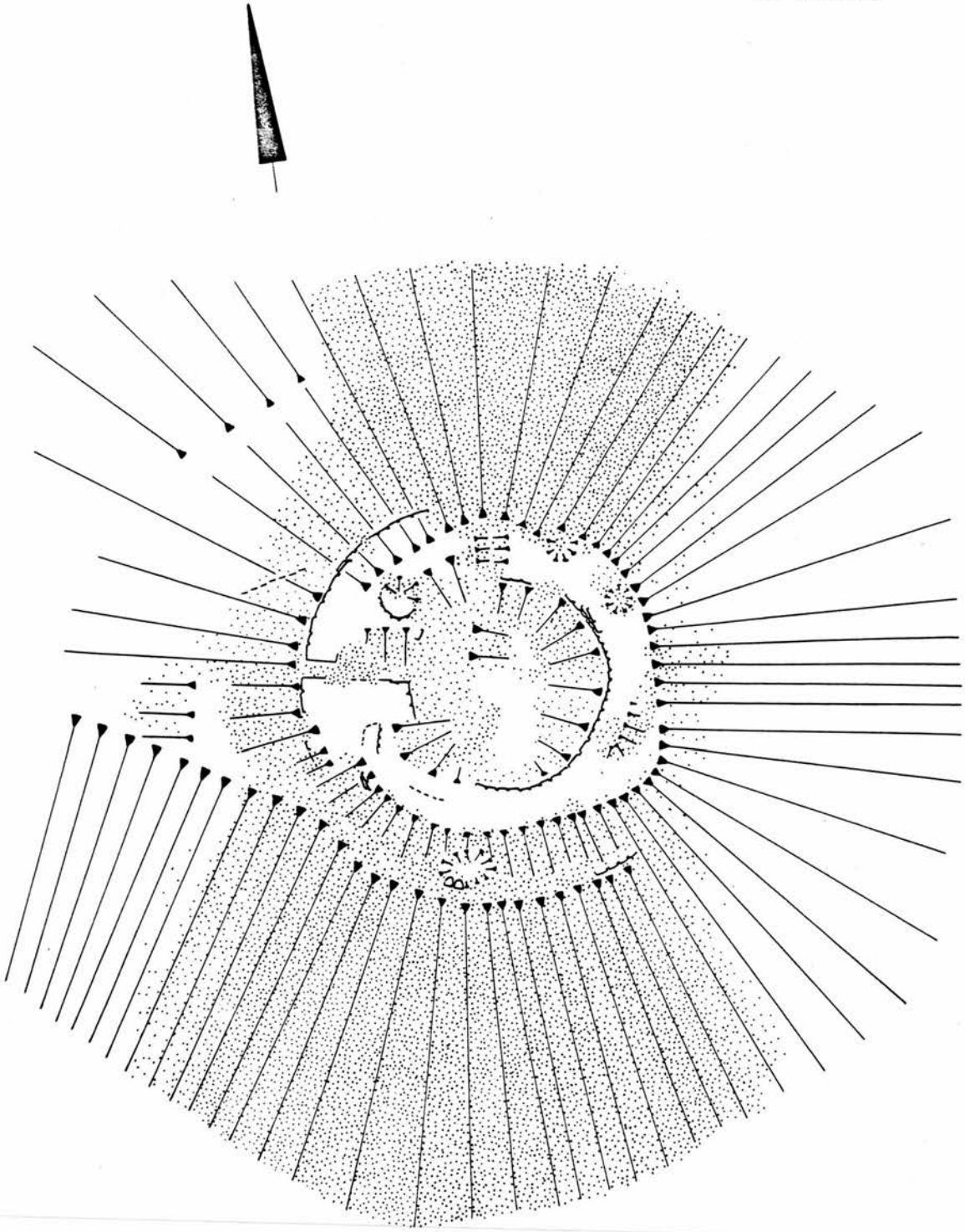
Strath of Kildonan

Gylable (SK 7) (approaches to broch across flat terrain on three sides)
Balvalaich (SK 8) (located on open slope of strath side)
Kilournan (SK 9) (located on open terrace on strath side)
Feranach (SK 16) (approaches to broch across flat terrain on all sides).

Some of the above ten brochs are not as open and as undefended as they might appear. Langdale Burn may have no outer defences, but then there is neither a need, nor a capability, for such defences to be built at the site (Figure 80). The broch is located on a very steep sided knoll, and is as heavily defended, albeit by natural means, as any broch in Strath Naver. The same is also true at The Borg in Strath Halladale, although it is located on a less naturally defensive knoll than Langdale Burn. The brochs of Grummore on the side of Loch Naver and Loch Mor in Strath Halladale may both have been originally located within the waters of lochs, which would have provided strong natural defence. The remaining brochs however are sited in very open

Figure 80

Langdale Burn
NC 692449



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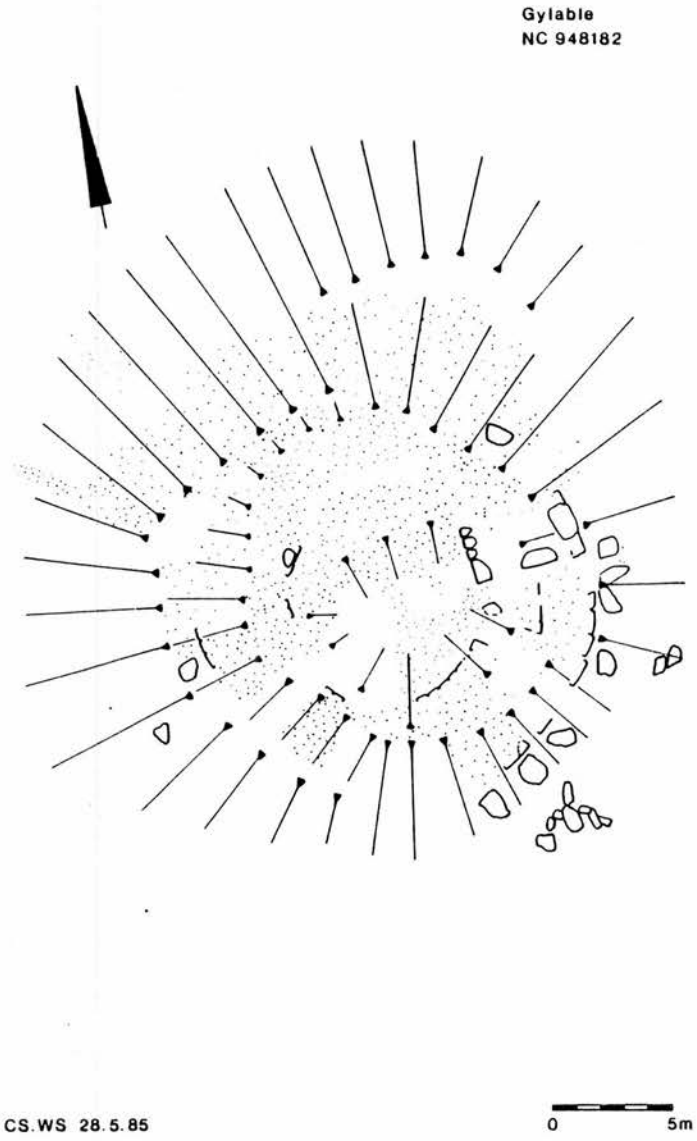
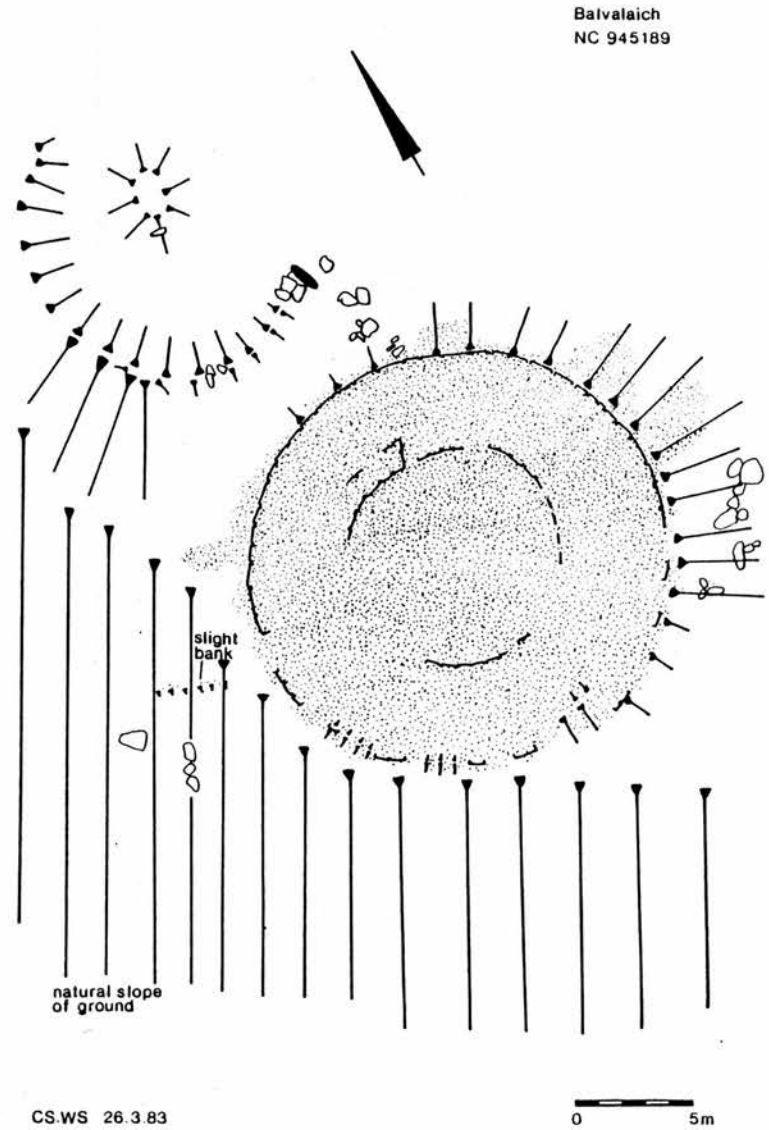
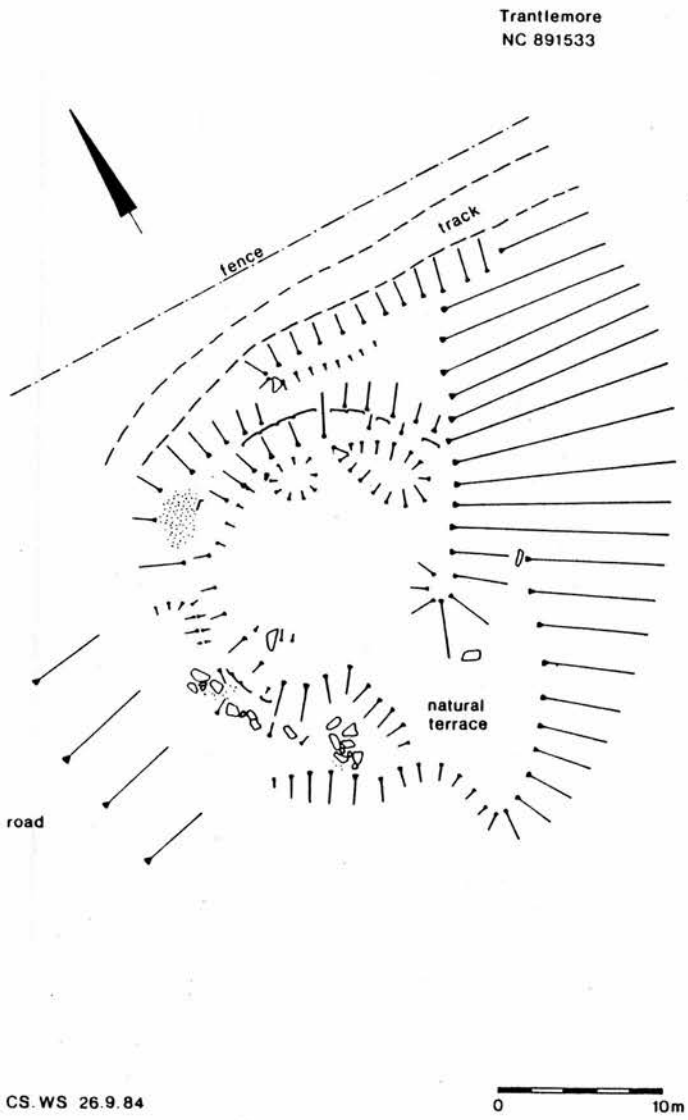

Gylable
NC 948182
CS.WS 28.5.85
0
5m

(a)

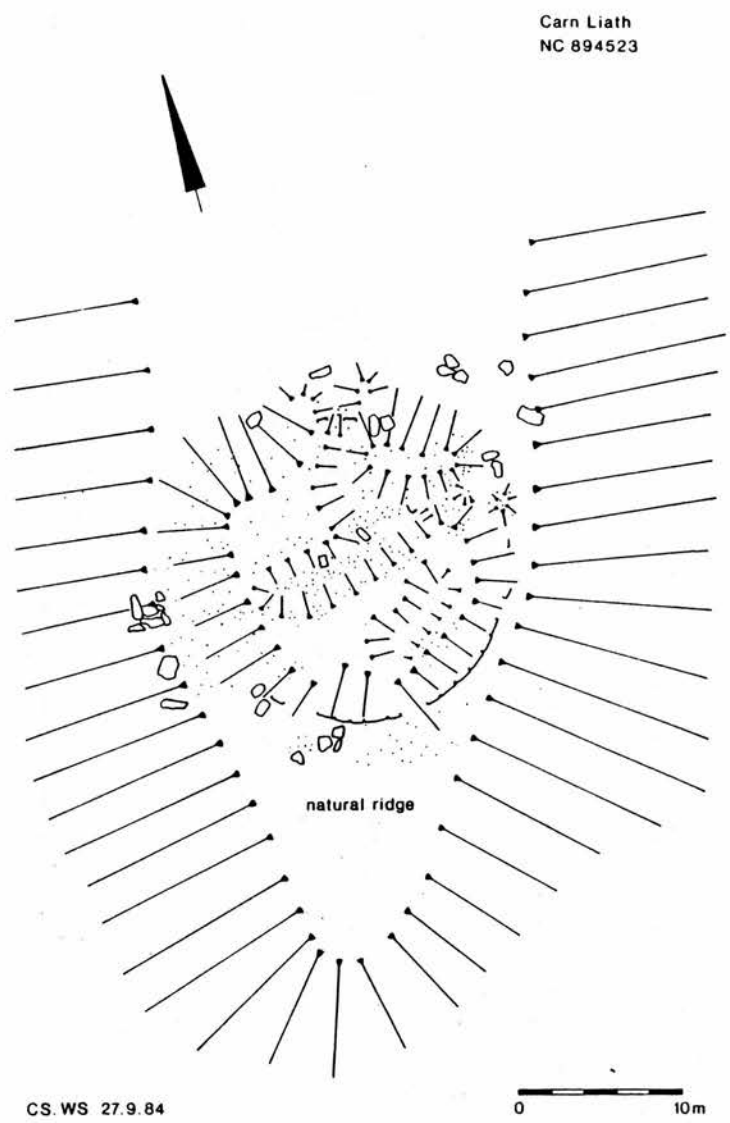

Balvalaich
NC 945189
slight bank
natural slope of ground
CS.WS 26.3.83
0
5m

(b)

Figure 81


Trantlemore
NC 891533
fence
track
natural
terrace
road
CS.WS 26.9.84
0
10m

(a)


Carn Liath
NC 894523
natural ridge
CS.WS 27.9.84
0
10m

(b)

Figure 82

locations, without any degree of strong natural defence, and no trace of any artifical outer defences. Their appearance in the landscape typifies the antiquarian image of the broch. In particular the well preserved broch of Feranach in Strath na Frithe, which has evidence of superimposed galleries within its wall width, represents the typical broch of the popular imagination (Figure 76). There is no trace of any outwork around Feranach, and no evidence was found during field survey that such an outwork had existed but had been removed. The badly ruined brochs of Gylable and Balvalaich in the Strath of Kildonan (Figure 81), and Trantlemore and Carn Liath in Strath Halladale (Figure 82), are very similar to Feranach in the apparent isolation of the structures.

In Sutherland then there appears to be evidence of three types of broch site:

(1) broch complexes in the eastern lowlands, similar to those in the Caithness Plain, with surrounding buildings built in stone;
(2) broch structures, heavily defended both naturally and artificially, with a defined external area which does not contain stone built surrounding buildings, but which could have contained buildings constructed in other, less durable materials; and
(3) completely open and undefended broch structures, with no apparent functional external area.

Such is the difference between these three types of broch site in Sutherland that many questions about chronology and function are posed. It is difficult to envisage the kind of settlement and land use system in the straths, which generated both heavily defended and open brochs at the same time, if they are to be seen as having similar function(s). Yet there seems little doubt that the brochs in the Sutherland straths are generally contemporary. It was pointed out in Chapter 11 that the fairly regular distribution of the brochs in the straths, gives the impression that they represent a contemporary division of the cultivable land. This is particularly obvious in Strath na Frithe, where the open site of Feranach (SK 16) and the defended site of Allt an Duin (SK 17) are located according to what might be expected, if they were contemporary sites, dividing available cultivable land (Figure 71). In addition to the occurrence of both

heavily defended and open brochs in an apparently contemporaneous relationship, there is also the possibility that there were other types of contemporary site, such as the defended homesteads and hut circles, again apparently both defended and open at the same time (see Chapter 11).

It is possible that, as suggested above, the brochs with defensive systems are not necessarily contemporary with those systems, but were simply sited to take advantage of their existence. In this case it could be said that the normal tendency of the brochs in the Sutherland straths is towards open, unenclosed, settlement, an obvious contrast to many brochs in the neighbouring District of Caithness (see Chapter 6), and also to many brochs in Skye, Orkney, and Shetland. It is also a contrast to the broch complexes in the eastern lowlands of Sutherland. The broch and surrounding buildings at Carn Liath are enclosed by a massive outer wall, as is the case at Backies (Love in Disc Exc Scot 1986, 18; RCAHMS 1911a, 92-3, no 272). No such wall was recorded in the excavation of the broch of Kintradwell, but there is evidence of a surrounding ditch at the site (Joass 1890; NMRS Card NC 90 NW 5).

It is possible that the apparent open brochs of the Sutherland straths were not as unenclosed as they appear, being defended by timber outworks, which have left no visible traces above ground. Timber seems to have been a normal construction material in the Sutherland straths up to the period when brochs began to be built. The many hut circles in the straths represent the remains of timber framed houses, and the evidence for settlement on the strath floors again points to timber houses (Barclay 1985).

Evidence from Carn Liath in the eastern lowlands of the District, points to a changeover from timber to stone as a construction material at the site. The recent partial re-excavation recovered evidence of a pre-broch timber built settlement (Love in Disc Exc Scot 1986, 18). The brochs in the Sutherland straths generally are unusual in that they are built in stone, whereas most other archaeological traces of settlement indicate timber construction. It is not until the late pre-clearance settlements in the straths, that stone is again obvious as the preferred construction material. The environmental evidence

points to this being a logical choice in recent times, as timber would seem to have been in short supply from about 1000AD onwards (see Chapter 11). By contrast the environmental evidence for the period when brochs were occupied does not indicate any particular shortage of constructional timber.

It may be that during the period of broch occupation, both timber and stone were being used in the Sutherland straths. It is possible that there were timber houses around broch structures; timber palisades either on top of enclosing ramparts or set directly into the ground as enclosing walls; and contemporary timber built settlements at other locations. It then remains to query the reasons for the use of stone as a construction material in brochs, at a time when timber still seems to have been available, and after so many centuries of exclusive timber construction. The reasons are not at all obvious, and may lie in the needs of defence, or in intangible socio-political factors.

The range of questions posed by the apparent differences in brochs in Sutherland can only be investigated by excavation. It is difficult in the absence of excavation evidence to draw any conclusions about the nature of the broch sites in the straths, and their possible function or functions within the wider settlement and land use pattern of their time. It may be that the brochs in a strath were serving slightly different functions, hence the differences in external area and defences. It may be that differences in individual design of broch structures, for example in wall height, produced a requirement for extra defence at some sites, but not at others. It may be that the pattern of settlement and land use, and population pressures in the Sutherland straths was so different from that in the Caithness Plain and the eastern lowlands of Sutherland, that a different type of broch site emerged, with the broch structure existing in isolation without even timber surrounding buildings. It may be that broch structures were an intrusive element, rather than a local development, in a landscape which had changed little from the Bronze Age with timber built houses in a wooded environment. The next chapter considers in detail the nature of the broch structures in Sutherland, and assesses whether these offer any further evidence for understanding the nature of a broch in a Sutherland strath.

Table 19 Sutherland: Brochs with Outworks

Site	Rampart & Ditch	Multiple Rampart & Ditches	Wall	Ditch(s)
Achcoillenaborgie		x		
Achness			x	
Allt a'Chasteil	x			
Allt a'Choire Mhoire	x			
Allt an Duin		x		
An Dun, Kylesku			x	
Armadale Burn			x	
Backies			x	
Caisteal na Coille			x	
Camus an Duin			x	
Carn Bran			x	
Carn Liath			x	
Clachtoll			x	
Coill'Ach a'Chuil			x	
Craig Carril	x			
Dalchork				x
Duchary			x	
Dun Carnachaidh			x	
Dun Chealamy		x		
Dun Creagach			x	
Dun na Maigh			x	
Dun Viden	x			
Dunrobin Wood			x	
Eilean Garbh		x		
Eldrable			x	
Inshlampie	x			
Kilbruar			x	
Kilphedir		x		
Kintradwell				x
Sallachadh			x	
Skaill	x			
Skelbo Wood			x	
Suisgill		x		
The Sandy Dun			x	
Upper Suisgill	x			

Sources: RCAHMS 1911a
NMRS
Site Catalogue
Mercer 1980, 119, Mon DAL 181(b) (Dalchork)

CHAPTER 13 SITE MORPHOLOGY 2: THE BROCH STRUCTURE

The absence of a pool of excavation evidence for Sutherland is a considerable disadvantage in discussing the nature of the broch structure there, when compared to the information which can be extracted even from the poor record available for excavated brochs in Caithness. The situation is made worse by the fact that the excavated brochs of Carn Liath and Kintradwell in the eastern lowlands of Sutherland are not typical of the majority of brochs in the District, being more akin to the broch complexes of the Caithness Plain (see Chapter 12). The only excavated broch in a Sutherland strath is Craig Carril in Strath Brora. The excavation record for this site however is particularly poor (Joass 1890, 107-9), and unlike the excavated brochs of Carn Liath and Kintradwell, no plan of the site was made at the time of its excavation. Observations on the nature of the majority of Sutherland broch structures can only therefore be made on the basis of field survey evidence, which necessarily restricts the scope of any conclusions which can be drawn about possible functions. There is a pressing need for adequate modern excavation evidence for brochs in the Sutherland straths.

Section 13.1 below describes in turn the characteristics of broch structures in Sutherland as revealed by field survey in the three study areas of Strath Naver, Strath Halladale, and the Strath of Kildonan. Section 13.2 draws comparisons and contrasts across the three study areas. Finally, section 13.3 discusses the range of evidence available for assessing the function or functions of broch structures in the Sutherland straths, drawing on the foregoing descriptions of the structures and some of the conclusions of Chapters 11 and 12.

13.1 Characteristics of the Broch Structures

Strath Naver

There are eleven structures in Strath Naver which seem to be certainly classifiable as brochs on the basis of their visible characteristics. These are:

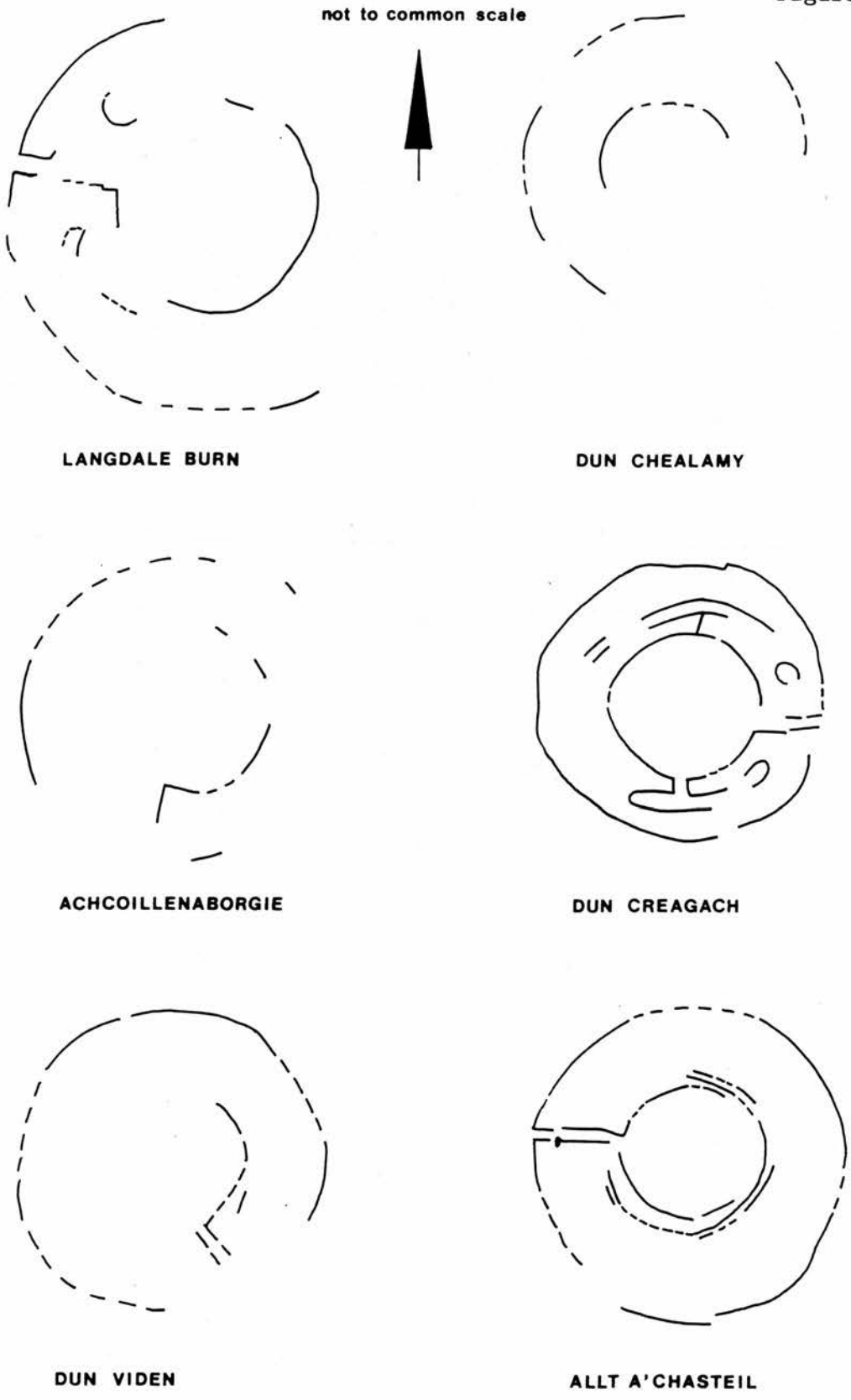
The Sandy Dun	(SN 1)	Achcoillenaborgie	(SN 2)
Allt a'Chasteil	(SN 3)	Dun Carnachaidh	(SN 6)
Dun Viden	(SN 7)	Dun Chealamy	(SN 8)
Inshlampie	(SN 11)	Langdale Burn	(SN 12)
Coill'Ach a'Chuil	(SN 15)	Grummore	(SN 16)
Dun Creagach	(SN 17)	(Figures 83 and 84)	

All of these structures are circular or roughly circular in shape, defined by walls varying in general width from 3.8m to 6m. The walls of each of the structures vary noticeably both in regularity of circuit and in thickness at individual points. It is likely that the variations result from two principal causes: construction on awkward sites, necessitating variation in the thickness of the wall base for stability, and subsequent internal pressures causing distortion mainly in the outer face. Wall widths also vary with wall height, sites such as Dun Creagach and Grummore displaying a distinct batter on their outer wall faces. The wall at Dun Creagach survives about 3m high above the rubble on its S arc, whereas the wall at Grummore is standing to an unknown height, deeply buried in rubble. Dun Creagach, Grummore and Allt a'Chasteil are unusual in possessing a wall which still stands fairly high. All of the other sites in the strath are reduced close to foundation level.

Traces of an intramural gallery are distinctly visible only at five sites: The Sandy Dun, Dun Carnachaidh, Dun Chealamy, Grummore, and Dun Creagach. There is evidence of two superimposed galleries at Grummore and three superimposed galleries are visible at Dun Creagach. The intramural galleries at the other sites are at, or close to, ground level. Intramural cells are distinctly visible in the wall width at Langdale Burn, Grummore and Dun Creagach, and less distinctly at Coill'Ach a'Chuil.

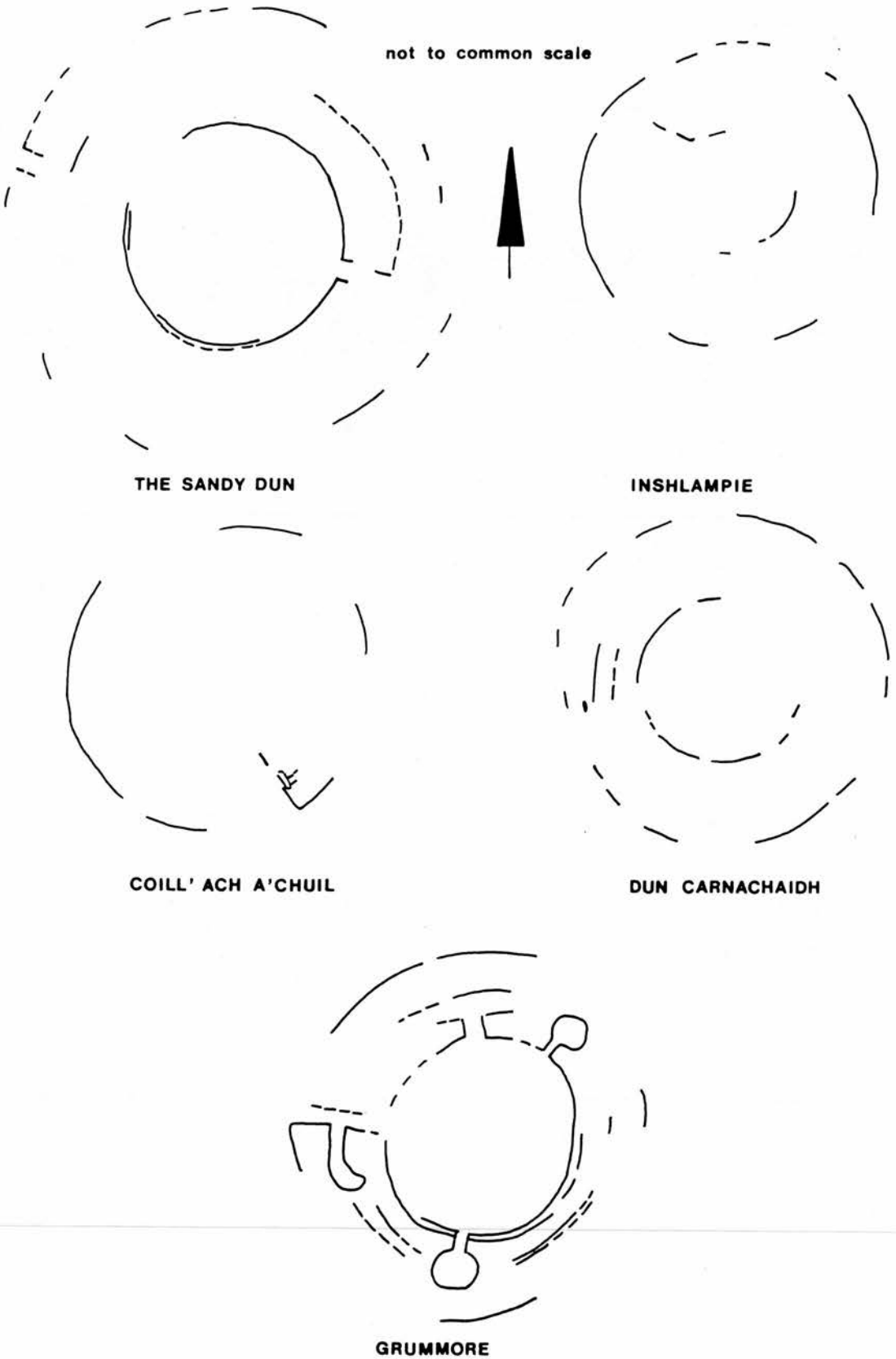
A scarcement is visible at four sites: The Sandy Dun, Allt a'Chasteil, Dun Chealamy, and Grummore. The scarcement has been largely obscured by reconstruction at The Sandy Dun, and there is an inner lining wall or further scarcement inside the broch wall at Allt a'Chasteil. It is likely that Dun Creagach may have a scarcement, obscured beneath the rubble choking its interior. It is not possible to estimate the heights of the scarcements above the broch floors as all of the

Figure 83



STRATH NAVER: STRUCTURES CAPABLE OF IDENTIFICATION AS BROCHS 1

Figure 84



STRATH NAVER: STRUCTURES CAPABLE OF IDENTIFICATION AS BROCHS 2

interiors are too full of rubble. The interior diameters of the structures vary from 6.8m (Dun Chealamy) to 10m (Allt a'Chasteil without inner lining wall), with an average diameter of about 8-9m.

All of the eleven structures, with the possible exceptions of Achcoillenaborgie and Dun Viden, display a combination of the well known characteristics traditionally taken to indicate a broch. Both Achcoillenaborgie and Dun Viden appear to be circular in plan with a thick wall, but the sites are too badly destroyed for other features to be identifiable. Dun Creagach is the best preserved site, and in many ways typifies the traditional image of a broch, with three superimposed intramural galleries clearly visible in the wall width.

The sites of Skaill (SN 9) and Eilean Garbh (SN 10; Figure 57b) within Strath Naver have also been identified as potential brochs on the basis of geographical criteria (see Chapters 10 and 11). There are however no visible structural features to aid in identification at either of these sites.

Strath Halladale

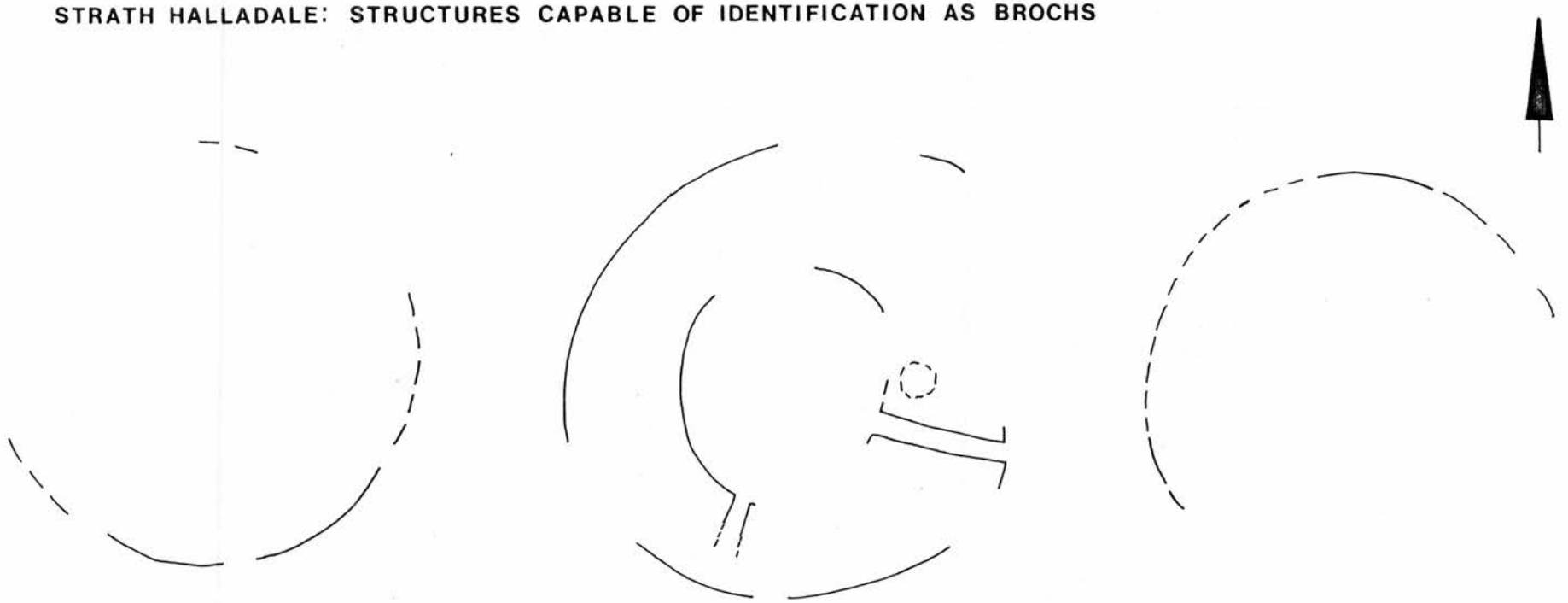
None of the structures in Strath Halladale are readily identifiable as brochs on the basis of the traditionally expected combination of well known characteristics (Figure 85). The most broch-like structure is The Borg (SH 8). It is well preserved, standing up to nine courses high, built of massive granite blocks, which are neither particularly well shaped, nor infilled with smaller pieces of stone. The whole structure has the appearance of being rather roughly constructed. It is highly unlikely that the wall ever stood much above its present height of 3.5m on the NW arc. The outer face of the wall has a strong batter, and the inner face also appears to be battered, as revealed in small excavation pits on the SW arc. The wall width varies considerably from 4m at base in the S to 5.7m at the entrance in the E. The internal area is distinctly oval in shape, measuring 8.6m NW/SE by 10.2m. There appears to have been a cell within the wall width in the E, opening off the entrance passage. There are no traces of an intramural gallery, stair, or scarcement. There is an entry into the wall in the SSW which, from its length, gives the impression that it may once have extended through the wall width to the outside, forming

a second entrance to the structure, although it seems that the outer face of the wall, reduced to foundation level at this point, continues across the line of the passage. The apparent continuation of the outer face could of course result from a threshold slab in place at the end of the passage. If The Borg did have two entrances, they would have been disposed at right angles to one another, one in the E and the other in the S, an arrangement very similar to that found in the double entranced broch structures in East Caithness (see Chapter 8 and Figure 47, p160). The Borg has to be recognised as a distinctly eccentric structure in terms of the expected characteristics of the typical broch.

Only Trantlemore (SH 6) and Carn Liath (SH 7) of the other structures in the strath included in the survey, qualify for further consideration as broch structures. Both of these structures are reduced to foundation level, with no features visible other than massive outer foundation stones of a wall, describing an apparently circular structure. The external diameter of Trantlemore is 17.8m NE/SW, a diameter within the likely range for identification as a broch structure. The external diameter of Carn Liath is just over 18m N/S, and the RCAHMS identified an entrance in the E in 1909, which is no longer visible (1911a, 62, no 187). The entrance passage was described as being 14ft or about 4.3m long. This would give a diameter for the internal area at Carn Liath of about 9.4m, again within the expected range for a broch structure. It seems likely that both Trantlemore and Carn Liath can be accepted as broch structures, despite the absence of distinguishing features. Attention has already been drawn to the fact that both of these structures occur in open locations, without any substantial degree of natural defence, and no evidence of any artificial external defences (see Chapter 12).

The site of Loch Mor (SH 3; Figure 59a) has also been identified as a possible broch in Strath Halladale on the basis of its geographical location (see Chapters 10 and 11), but there are no visible structural features at the site to aid in its identification.

STRATH HALLADALE: STRUCTURES CAPABLE OF IDENTIFICATION AS BROCHS



CARN LIATH

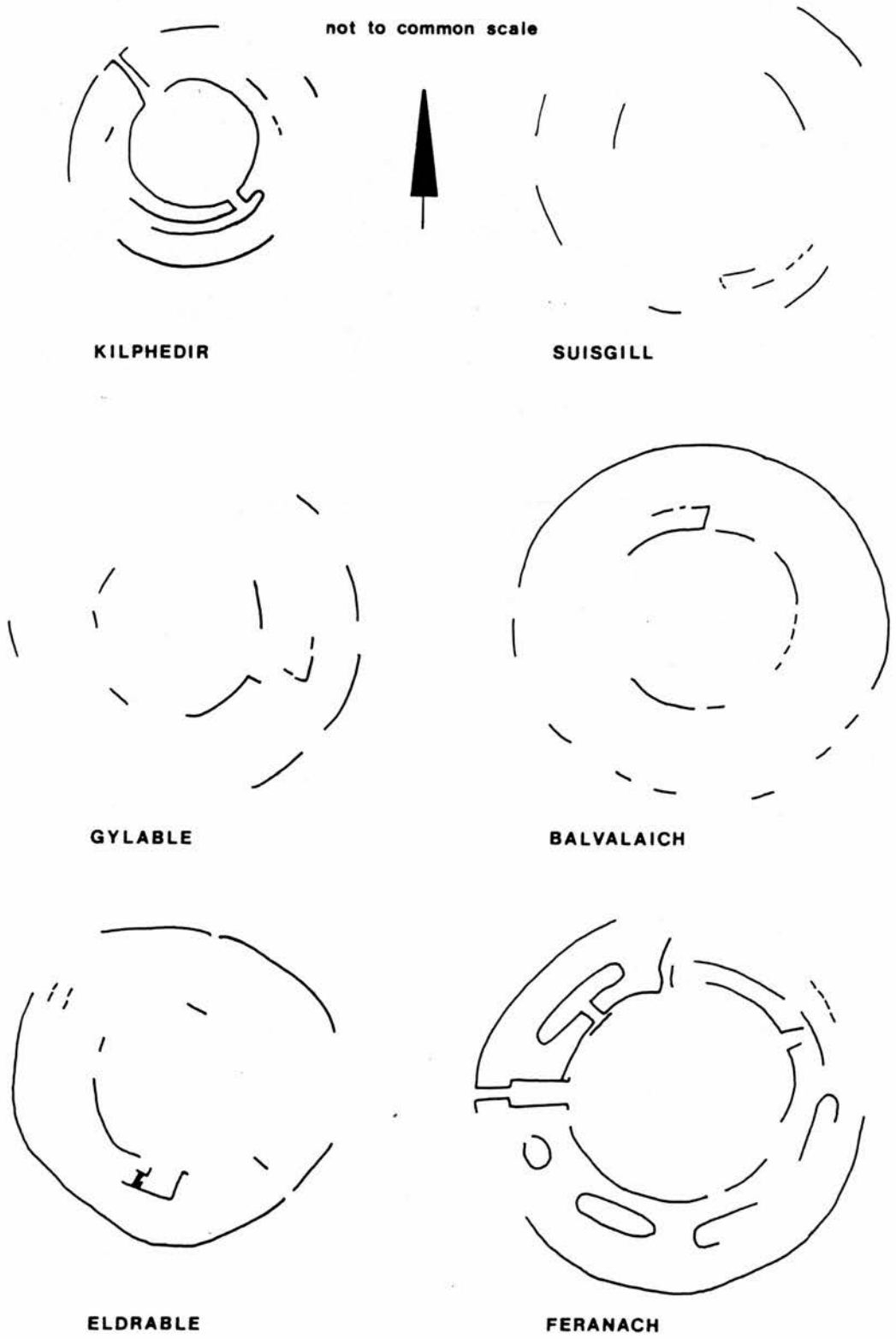
THE BORG

TRANTLEMORE

not to common scale

Figure 85

Figure 86



STRATH OF KILDONAN: STRUCTURES CAPABLE OF IDENTIFICATION AS BROCHS

Strath of Kildonan

In the Strath of Kildonan and its tributary Strath na Frithe there are only six structures, which are certainly identifiable as brochs on the basis of the traditionally expected architectural features of such structures. These are:

Kilphedir (SK 4)
Eldrable (SK 5)
Gylable (SK 7)
Balvalaich (SK 8)
Suisgill (SK 13)
Feranach (SK 16)

(Figure 86).

Kilphedir and Feranach are the best preserved. Kilphedir has a consistent wall width of about 4.3m with a slight batter on its outer face visible on the N and S arcs. The internal diameter of the structure is 9.6m N/S. Within the wall width a gallery can be traced around the W arc of the wall, entered at ground level directly opposite the broch entrance. Both the RCAHMS (1911a, 104-5, no 307) and Young (1961-2, 186) identified this gallery as containing a stair, but no steps are visible. There are no other features visible in the wall width and there is no scarcement, although the wall is preserved over 2m high in the interior.

The wall of the broch of Feranach is preserved about 3.5m high in the interior, although its lower part is cloaked in rubble. The wall width at the visible base is about 4.6m, but there are distortions at points in the wall, caused by outward pressure. The interior diameter of this largely circular structure is about 11m above scarcement level, the diameter below this being unmeasurable because of debris. There are numerous intramural features visible, including the remains of five cells, and a gallery on the NE arc. There are in fact traces of two superimposed galleries on this arc, the upper one offset from the lower one by about half a metre towards the broch interior. There is evidence of a scarcement at a couple of points in the wall, located at the level of the lintels over the basal entries into the intramural features. Feranach with its architectural sophistication and absence of external features typifies the antiquarian image of a broch.

The other four structures are less well preserved, but maintain sufficient features to be fairly readily recognisable as brochs.

Balvalaich is an almost perfectly circular structure, with a wall width varying from 4 to 4.4m and an internal area 8.7m in diameter N/S. There are traces of an intramural gallery in the N arc of the wall. Eldrable is a much less regular structure, possibly because of its location on top of a rock outcrop. The wall varies in width from 3.2 to 4m and the enclosed area is 7.7m NE/SW. There is a stair gallery in the SW arc of the structure, and further traces of a ground level gallery in the NW arc. Gylable is a badly ruined structure, of which only intermittent traces of the inner and outer faces of the wall remain. The wall width varies from 4.4 to 4.7m and the internal diameter is 7.8m E/W by 8.3m. There are traces of an intramural cell or gallery to the S of the entrance passage which is in the E arc of the wall. Suisgill is a very badly ruined structure, severely robbed of stone. Sections of the inner and outer faces of the wall can be traced and it has been about 5m thick. The internal diameter of the structure cannot be properly estimated, but there is a trace of an intramural gallery in the SE arc of the wall. There seems little doubt that these four structures exhibit a combination of features sufficient to identify them as brochs.

The remaining structures in the strath exhibit far fewer architectural features and are less easily identified. Allt a'Choire Mhoire (SK 10) is badly ruined, but appears to be the remains of a roughly circular structure. The size and shape of the mound of debris, an apparent wall width of 4.8m at the only measurable point, and tenuous traces of an intramural gallery and cell, all point to the possibility that the structure is a broch, but no further details can be made out. Kilournan (SK 9) and Allt an Duin (SK 17) would seem to be brochs on the basis of geographical location and position in the distribution within their respective straths, but both structures are too badly ruined to reveal any distinguishing features. Allt an Duin also has a similar rampart and ditch defensive system to those noted around the brochs of Kilphedir and Suisgill.

The site of Upper Suisgill (SK 13; Figure 60a) has also been identified as a possible broch in the Strath of Kildonan on the basis of its geographical location. There are unfortunately no visible structural features at this site, and its identification must remain

dubious.

13.2 Comparisons and Contrasts

In the three Sutherland study areas 43 locations were examined altogether, but only twenty of these can be fairly certainly identified as brochs on the basis of structural criteria, that is, eleven in Strath Naver, possibly three in Strath Halladale, and six in the Strath of Kildonan. It is interesting that Strath Naver has such a high proportion of readily identifiable structures, when compared with the other two study areas. This may be no more than a reflection of the degree of destruction which has taken place in each of the straths. The structures in the lower part of Strath Naver, as has already been noted in Chapter 12, are located to take advantage of strong natural defence, far more than is available in the other two straths. The kame terraces on the sides of Strath Naver are high with precipitous drops down to the strath floor, and the broch structures are mainly located on the edge of these terraces on either side of the strath. The locations are difficult of access from the strath floor, and this may have served to protect the structures from the extensive robbing which has taken place elsewhere.

All of the broch structures, with the exception of the three in Strath Halladale, exhibit some of the range of architectural features traditionally associated with the word broch. The walls generally contain intramural galleries, apparently founded at ground level, but in the case of Dun Creagach (SN 17) in Strath Naver, Grummore (SN 16) also in Strath Naver, and Feranach (SK 16) in Strath na Frithe, rising in superimposed tiers within the wall, with three tiers visible at Dun Creagach and two at the others. These three brochs seem to meet Mackie's definition of a true broch, which must have a high, hollow wall containing superimposed galleries (1983, 118). There is no means of estimating whether the other identified brochs may also have had high walls with superimposed galleries, but it is possible that some may have done so.

It is interesting that the apparently most sophisticated and complex broch structures, with the largest range of architectural features,

are located furthest inland. Dun Creagach and Grummore are on the shores of Loch Naver, at the upper end of Strath Naver (see Figure 69, p235), whereas Feranach is located in Strath na Frithe, an inland tributary of the Strath of Kildonan, and is almost the furthest inland broch in the area, with only the totally ruined Allt an Duin (SK 17) lying to its west (see Figure 71, p241). This distribution pattern may be no more than a product of the poor condition of the structures lying in the lower parts of the straths, where more intensive settlement may have given rise to more robbing of sites. However it is noticeable that the relatively well preserved Sandy Dun (SN 1) and Allt a'Chasteil (SN 3) in Strath Naver (Figure 83), and Kilphedir (SK 4) in the Strath of Kildonan (Figure 86), do not exhibit the same complexity of structure as Dun Creagach, Grummore and Feranach, with fewer or no intramural features visible.

The broch structures vary greatly in the details of their intramural features, their wall widths, and their internal diameters, with no obvious pattern confined to individual straths. The area enclosed within the broch wall varies from as little as 6.8m up to about 10m in diameter. The variation in size of internal area may well be significant, as a smaller area would be easier to roof, but would be more restricted in terms of functioning floor space.

The presence of scarcements in a number of the structures points to the likelihood that a scarcement may have been a common feature in broch structures in the straths. It is difficult to estimate the height of the scarcements above the original floor levels in the interiors, because none of the brochs have been cleared of debris, but they obviously cannot be located very high, as none of the structures survives to any great height. The wall at Dun Creagach is about 3m high on the exterior, but no scarcement is visible in the interior of the structure. It is thought to be hidden under the depth of debris choking the interior. The wall at Feranach is estimated to be about 3.5m high in the interior, with the scarcement positioned at the level of the lintels over the entrance passage and the entries into the intramural features. At Grummore the scarcement is similarly positioned at the level of the lintels over the entry into the cell in the S arc of the wall, and also about the position of the lintels over

the basal gallery, below the visible upper gallery.

It seems reasonable to view scarcements in these low positions, with galleried walls rising above them, as supporting floors rather than roofs. At Feranach there is evidence of upper level entries or voids giving access above scarcement (first floor) level to the gallery and cells, in addition to ground level accesses to the intramural features. Headroom below scarcement level would appear to have been very restricted, but it is impossible to be certain in the current debris filled state of the structures. It clearly would have been very dark in the basement level with a floor, or even a part floor, in place. It is possible that the scarcements could have supported pitched roofs, but it is difficult to envisage how such roofs would have been drained, with galleried walls rising outside them. It must be presumed that timber was used to create floors, roofs and possibly internal furnishings, although there is no direct evidence of this in the absence of excavation. It was pointed out in Chapter 11 that there should have been contemporary local supplies of timber in Sutherland for such constructional purposes.

The three broch structures in Strath Halladale present a slight problem when viewed against the structures in the other two straths. Trantlemore (SH 6) and Carn Liath (SH 7) are too badly reduced to offer any means of comparison with structures elsewhere, and The Borg (SH 8) is unlike any other broch structure identified in the three study areas. The Borg is irregular in shape, with a rough masonry wall composed of very large rounded granite blocks. It may have had more than one entrance to the interior, and there is little evidence of intramural cells, beyond a possible guard cell leading off the E entrance. The structure has been modified to some extent inside, as there is evidence of a secondary lining wall, which would have altered the shape of the interior. It seems clear however that much of the structure survives as it was originally built, and that it was not constructed in the form of a fairly regular, circular broch, such as those evident in both Strath Naver and the Strath of Kildonan. It may be that the reasons for the irregularity of The Borg lie in the need to accommodate the structure to the rocky knoll on which it sits. Other broch structures in the study areas tend to be in locations

where there is sufficient flat ground to build a regular structure. The Borg is reminiscent of structures on the west coast of Scotland, which often fit around the topographical irregularities of selected sites. The Borg, in its egg- or pear-shape, could be compared with Dun Borodale on Raasay or Dun Cromore on Lewis, both of which are identified as brochs (RCAHMS 1928, 181, no 575, and 11-2, no 38). At the same time it is different from both of these in having no apparent intramural gallery, and possibly two entrances.

13.3 Evidence for Function

In the absence of a pool of excavation evidence it is difficult to draw many conclusions about the function or functions of the broch structures in the Sutherland straths. Evidence for function has to be gathered from the little that can be determined about the nature of the sites by field survey (Chapters 12 and 13), and the assessment of the sites in their contemporary landscape setting (Chapter 11). The only excavation evidence which exists is from the antiquarian excavation of the broch of Craig Carril in Strath Brora (Joass 1890). This broch was not planned by Joass, but was drawn by the RCAHMS many years after its excavation (1911a, 9-11, no 27; Figure 87).

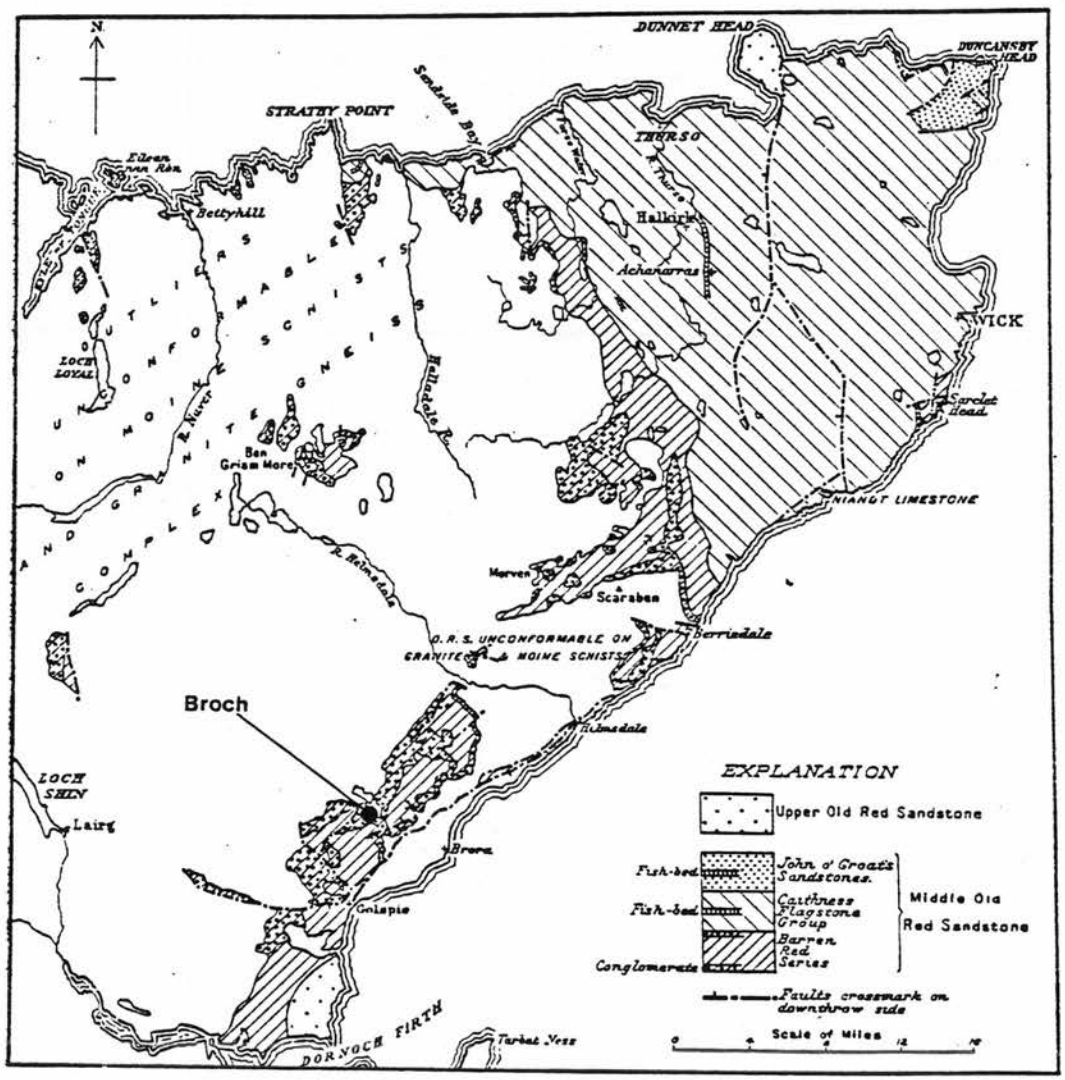
Craig Carril was described as being 30ft (9.1m) in interior diameter, with a wall averaging 15ft (4.6m) high and 17ft (5.2m) thick at the floor. It had an entrance facing E, checked for two doors, with a guard cell between them on the N side. A stairwell and stairfoot chamber were present in the S half of the wall. The RCAHMS noted a scarcement on the inner face of the wall some 9ft (2.7m) above floor level. It is not clear that this height above floor level should be taken as typical of brochs in the Sutherland straths. Other scarcements observed in the course of field survey are at the height of the lintels over the passages into intramural features (see above), and would appear to be generally little more than about 1.5m above floor level, although this is difficult to prove in the debris covered state of the sites. The plan of Craig Carril drawn by the RCAHMS does not illustrate the scarcement or its relationship to intramural entries (Figure 87). It was noted by both Joass (1890, 107) and the RCAHMS (1911a, 9) that the entry to the stairwell was not founded at

Broch of Craig Carril (or Carrol) Figure 87

Source: RCAHMS 1911a, 10

Broch of Craig Carril in Relation to Old Red Sandstone Series

Figure 88



The Old Red Sandstone of Caithness and Sutherland.

Source: Phemister 1936, 69

ground level, but was 3ft 6in to 4ft (1.1-1.2m) above floor level. The level of the scarcement at Craig Carril could therefore reasonably be expected to be correspondingly higher, to allow head room at the access to the stairwell.

Joass made little reference to internal furnishings within the broch at Craig Carril, but noted:

"Inside the court, and close to the wall on the left, is a space 7 feet long and 3 wide, enclosed by flags on end varying from 3 to 4 1/2 feet high. In the floor between this and the centre is a small cavity lined with flags like the mouth of a drain. It contained black earth and bits of deer's horn." (Joass 1890, 107).

A number of finds from the broch interior were also recorded, including bones of deer, ox, sheep and pig; shells of pearl mussel, periwinkle and limpet; fragments of quern; a steatite cup with a handle; a copper finger ring; a broken bead of amber or vitreous paste; and many fragments of pottery (Joass 1890, 108-9). It was also recorded that the floor was covered to a depth of 3ft (0.9m) with unctuous earth and ashes, above which was stony debris. Joass thought there were few traces of secondary occupancy (1890, 108).

The little that is recorded from the interior of Craig Carril is not out of keeping with finds within brochs elsewhere in the northern mainland. There are indications of internal furnishing arrangements using upright flagstones, perhaps not dissimilar to those occurring within brochs in the Caithness Plain. In this respect Craig Carril is almost certainly unusual in term of the brochs in the Sutherland straths, in that it is located in a geological area which is part of the Old Red Sandstone Series and which consequently provides flagstones (Phemister 1936, 69; Figure 88). Other brochs in Strath Brora, also lying within the Old Red Sandstone Series, may perhaps reasonably be expected to reveal on excavation similar internal furnishings made of flagstone. Most of the rocks in Central Sutherland are not of the Old Red Sandstone Series however, but are rather Moine schists and granites, which do not readily lend themselves to use for internal furnishings. If interior furnishings of the kind at Craig Carril were required for brochs in the straths in the Moine schist and granite areas, then timber would seem to be the only suitable material available. The possible significance of internal flagstone furnishings

at Craig Carril, replicating the apparent tradition in the Caithness Plain and also in Orkney, is discussed below.

The general nature of the finds within Craig Carril point to the broch being some kind of habitation unit, similar to the brochs in the Caithness Plain and the eastern lowlands of Sutherland. Occupation of the interior would seem to have been fairly lengthy, if Joass's report of 3ft of stratigraphy is correct. It may be reasonable to extrapolate from Craig Carril and suggest that broch structures elsewhere in the Sutherland straths were also habitation units of some kind, functioning within the settlement and land use pattern of their time.

The available internal floor area within the broch structures, unlike those in the Caithness Plain, would seem to have been increased by a raised wooden floor supported on a scarcement, giving two levels of floor space. Scarcements were noted at several broch structures during field survey, and may perhaps be taken as a fairly consistent feature in a broch in a Sutherland strath. The presence of scarcements is further evidence of the use of a supply of local timber, in sharp contrast to the neighbouring Caithness Plain where there is little structural evidence of integral scarcements, accompanied by strong environmental evidence of a shortage of local constructional timber.

The stone built broch structure would appear to be an innovation in the straths, where the traditional habitation form for a number of centuries seems to have been timber built houses. There is some evidence that the traditional form may have continued in use contemporary with brochs (see Chapter 11). There is little evidence for local evolution of the stone built broch structure, although it has been suggested that some hut circles in the straths with thickened walls at the entrance passages, may represent a vague foreshadowing of some of the characteristic features of brochs (Fairhurst and Taylor 1970-1, 93). By way of contrast it is interesting that the broch at Carn Liath seems to have directly superseded an earlier timber built structure (Love in Disc Exc Scot 1986, 18), indicating that the developed broch form was an innovation at least at the site of Carn Liath. There is also little evidence in the broch structures of experimentation in perfecting the form, beyond the fact that the more sophisticated structures seem to lie further inland. Most of the

certainly identified brochs in the study areas display a range of the characteristic features of the broch type.

In the absence of comprehensive excavation evidence only tentative hypotheses on the nature and functions of brochs in the Sutherland straths can be offered. One such hypothesis may be to speculate that the broch structures in the straths represent colonisation of an already settled landscape where timber houses were the normal habitation units, by people from elsewhere who were used to building in stone to a particular design. The difference in the structural sophistication of broch structures along the lengths of the straths could perhaps be indicative of time lag in the colonisation, with the design of the structures becoming more complex over time for reasons which are unknown.

There are a number of pieces of evidence which may support such a hypothesis.

(1) The heavily defensive nature of the broch structures in the north-eastern straths. It is very noticeable that strong external defences of the rampart and ditch type only occur in straths close to the Caithness Plain, that is, mainly Strath Naver and the Strath of Kildonan (see Table 19, p272, and Figure 72, p250). This geographical bias must have some particular significance, and it could be speculated that it is indicative of socio-political pressure from a source to the east in Caithness, or to the north in Orkney.

(2) The intrusive or innovative nature of the stone built broch structures. It cannot be stressed too highly that timber buildings seem to have been the usual habitation form in the Sutherland straths, possibly for as much as two millennia, and that the stone built broch structures are unusual. It could be speculated that this is indicative of an incursion of people with no knowledge whatsoever of building in timber, whose normal habitation units were built in stone. In further support of this is the occurrence of upright flagstones forming interior furnishings at Craig Carril. It seems most unlikely that the idea of using flagstone in this way developed in isolation in Strath Brora, where there should have been a sufficient supply of timber for interior furnishings as in the other straths, if the

palaeo-environmental evidence discussed in Chapter 11 is correct. It seems much more likely that the idea may have been imported from elsewhere, and advantage taken of the recognisable supply of suitable stone.

(3) Evidence of pressure for expansion within the Caithness Plain. It was pointed out in Chapter 5 that the distribution of brochs within the Caithness Plain may point to some pressure on available arable land, arising presumably from population growth. The distribution of brochs in some areas of the Plain is particularly dense with notable clusters. The existence of a broch such as Brabstermire (EC 2), in an apparent colonising location within the peat in the north-east of the District, is a possible further indicator of land pressure. If such pressure on arable land did exist, and could not be satisfied within the Caithness Plain, the most obvious route for expansion would be into the Sutherland straths, probably via the north coast route into the very fertile Strath Naver. It is interesting that the Strath Naver brochs are the most heavily defended brochs in Sutherland. If Strath Naver was an area of initial colonisation of an already settled landscape, heavy external defences could be thought to be a very necessary requirement of site design.

In the absence of excavation evidence there can be few certainities about the majority of Sutherland brochs. In summary all that can be said is as follows.

(1) They appear to have been habitation units linked to available cultivable land, partitioning that land fairly comprehensively amongst them.

(2) Many were sited to take advantage of strong natural defence, with several having additional artificial defences.

(3) The majority do not appear to have had surrounding buildings, unless these were built in timber.

(4) They represent a marked contrast in building style to the previously common timber built houses, some of which may have continued to be built.

(5) The brochs in the straths represent a contrast to the brochs of

the Caithness Plain and also to the brochs of the eastern lowlands of Sutherland in the apparent evidence both for the overall size of the archaeological unit and the possible duration of site occupation. (This impression may be totally misleading, as the size of the units may have been extended by timber constructions which have left no trace, and the stone built brochs may have been preceded over a lengthy period by timber buildings.)

(6) There is evidence of three types of brochs in Sutherland which may, or may not, indicate functional, chronological or socio-political differences: broch complexes in the eastern lowlands; heavily defended broch structures in the north-eastern straths; and open, undefended broch structures throughout the straths.

CHAPTER 14 CONCLUDING CONSIDERATIONS

The aim of Part Three of this thesis has been to assess as far as possible the true nature of the archaeological sites called brochs in Sutherland. A number of conclusions about that nature have been drawn in the preceding four chapters. This final chapter of Part Three brings together and summarises the various conclusions (section 14.1 below); assesses the major implications raised by the conclusions for approaches to the study and further understanding of brochs (section 14.2); and proposes a strategy for further research on brochs in Sutherland (section 14.3).

14.1 Summary Conclusions

(1) Brochs in Sutherland have not figured highly in the history of broch studies. Only five broch excavations have taken place in the District, all of them in the antiquarian period, with some recent investigation only at the previously excavated broch of Carn Liath. The excavation record is consequently very poor. There is also bias in the scant excavation record, in that all of the excavated brochs for which there is information lie in the eastern part of the District. Sutherland, like Caithness, has suffered a surprising neglect in terms of broch studies, not particularly in keeping with its share of the estimated population of brochs. In the absence of excavation evidence reliance has to be placed on information which can be gained from field survey in attempting to understand brochs in Sutherland.

(2) The number of brochs occurring within the District has been estimated by previous authorities to be about 78. Most of these have been recognised as brochs for a long time, identified by structural features visible in the stony rubble at the sites, in sharp contrast to the heavily obscured and turf covered brochs in Caithness. Not all of the possible broch sites in Sutherland have necessarily been identified, as evidenced by recent discoveries by the OS in the course of map preparation and by reasonably authentic references by the antiquaries which have not subsequently been noted.

(3) There are a number of archaeological sites in the Sutherland

straths which are possibly contemporary with brochs, in contrast to neighbouring Caithness where the existence of contemporary sites of other types has not been established. The identification by previous authorities of some sites in the three study areas as duns or forts would appear to be largely misleading. These labels suggest possible contemporary sites of a fairly similar nature to brochs, but evidence from the study areas indicates that the labelling is incorrect. Most of the sites bearing the label dun would be better described as homesteads or hut circles.

(4) Sutherland has been a land of mountain, wasteland and water since the last glaciation, with settlement and cultivation only possible in limited areas with a favourable micro-environment. The District has not experienced the major agricultural improvements which have occurred in Caithness, and consequently much of the sequence of past settlement and land use has remained intact.

(5) Pollen diagrams for the Strath of Kildonan indicate that today's prevailing conditions of open heathland without naturally growing trees is a phenomenon of relatively recent times. The straths would appear to have been wooded during the Bronze Age and throughout the period when brochs can reasonably be expected to have been occupied, with a consequent supply of timber for building purposes.

(6) Evidence from Upper Suisgill in the Strath of Kildonan points to strath floors having had a favourable micro-environment for settlement and land use at most periods in the past, with cultivation probably taking place on the alluvial flats during the period of broch occupation. Dating evidence from hut circles at Kilearnan, also in the Strath of Kildonan, points to upper slopes above about 120m OD having long since been abandoned for cultivation by the time of broch occupation.

(7) It is no longer possible to dismiss hut circles as all being earlier than the period of broch occupation. Dates for hut circles at Kilphedir and Kilearnan in the Strath of Kildonan indicate that some hut circles may have been contemporary with brochs, and that hut circles may have continued in use after the period when brochs were occupied.

(8) Brochs in Sutherland are to be found in the areas of favourable micro-environment, which have supported settlement and cultivation for millennia. The most typical location is within a river valley or strath. Within the three straths selected as study areas the distribution of brochs appears to be related to the presence of alluvial flats in the strath floors, possibly the best opportunities for cultivation within the whole District. All of the brochs however are located above the level of the strath floors, usually on a kame terrace on the strath side which has a steep drop to the valley bottom. It seems clear that brochs in Sutherland had a function(s) connected with gaining a living from the land.

(9) Just over 40% of brochs in Sutherland have extant external defences. Many have a simple enclosing wall, but a number have a rampart and ditch defensive system. The distribution of such defensive systems is distinctly biased, occurring almost exclusively in the major straths of Strath Naver and the Strath of Kildonan, two of the study areas. Other types of archaeological sites in the straths, namely homesteads, also have rampart and ditch defensive systems. It is possible that brochs with such systems may be founded on top of earlier sites, and that the broch structures are not contemporary with the outer defences. Within the three study areas this can only be fairly readily demonstrated by field survey at the broch of Kilphedir.

(10) Buildings around broch structures in Sutherland can only with certainty be said to occur at three sites in the eastern lowlands of the District. The buildings at these sites are stone built. It is possible that brochs in the straths may have had timber built surrounding buildings which have left no trace.

(11) In Sutherland there appears to be evidence of three types of broch: broch complexes in the eastern lowlands akin to those of the Caithness Plain; heavily defended broch structures with a defined external area; and completely open structures without external defences and with no apparent defined external area.

(12) All of the structures in the three study areas which can be certainly identified as brochs display some of the range of architectural features traditionally associated with the word broch.

The most sophisticated and complex structures appear to occur furthest inland. Scarcements seem to have been a common feature, indicating the use of timber within the structure to create a raised floor or to support a roof.

(13) The available evidence points to broch structures in the Sutherland straths having been habitation units linked to cultivable land, partitioning that land fairly comprehensively among them. The stone built habitation unit of the broch appears to have been an innovation in an area where timber had been the traditional material of construction for many centuries. It is possible to view brochs in the Sutherland straths as being an intrusive element in an already settled environment, but the available evidence from excavation is so poor, that there can be few certainties about the nature of the sites.

14.2 Implications

The most significant conclusion drawn in the preceding four chapters for approaches to the study and further understanding of brochs is perhaps (11) above, which notes that there appear to be three types of broch in Sutherland District. It is perhaps no surprise that in the part of Sutherland most like the Caithness Plain in terms of environment largely as a result of underlying geology, there are broch complexes, the dominant broch form in the neighbouring District. These however represent a very small proportion of the total population of Sutherland brochs. As soon as the straths are entered, brochs appear in a different form. They are single stone structures with, or without, outer defences, displaying no evidence that they were ever surrounded by the multiplicity of buildings so obvious in Caithness, and also at Carn Liath and Kintradwell in Sutherland. Perception of these single stone structures in Sutherland is complicated by the possibility that stone and timber were being used in a complimentary fashion in the construction of the total archaeological site and that there may have been timber surrounding buildings, but hypotheses can only be formed within the context of the available evidence.

The evidence suggests that the brochs in the Sutherland straths were different entities from those in the eastern lowlands of the District

and the Caithness Plain. The reasons for the difference are not clear, but the markedly different environments of the two areas may have been a factor of some significance. For example, the very good quality arable land of the Caithness Plain could reasonably be expected to have supported at any period in the past a much higher population level than the Sutherland straths, with consequent differences in socio-political and settlement systems in the two areas. During the period of broch occupation village type communities in the Caithness Plain may have been the optimal response to the interaction of many factors, such as environment, contemporary technology, population levels, and social development. In Sutherland that optimal response may have been single homesteads.

In terms of implications for broch studies, the evidence from Sutherland seems to be suggesting that the term "broch" should be recognised as a generic label only. Within the label there appears to be more than one type, with the possibility of three types being distinguishable in Sutherland alone. One of these types, open undefended broch structures such as Feranach in Strath na Frithe, most replicates the traditional image of a broch, but it appears not to be the common form of a broch in the northern mainland, being far outnumbered by the broch complexes of the more fertile land areas of the Caithness Plain and the eastern lowlands of Sutherland.

Differences in type do not necessarily have to imply differences in function. A broch, whether in the Caithness Plain or in a Sutherland strath, seems from the range of available evidence to be fundamentally a place of habitation, a part of its contemporary local settlement and land use system. The differences would seem rather to lie in the multiplicity of contexts within which the habitation units called brochs functioned - settlement and land use contexts, economic contexts, and socio-political contexts. By this reasoning the full nature of a broch structure would have depended very much on where it existed. In terms of broch studies therefore the building of general theories on brochs for application across Atlantic Scotland becomes of little relevance. Theory has to be constructed rather on a sub-regional basis, involving a consideration of multiple local contexts. This does not deny that more general contexts existed,

influencing the nature of a broch, such as, trade, contact, and wider political links, but these may perhaps become easier to understand once the individual broch, wherever it is, can be more closely understood.

Typicality, a term which has been in fairly constant use in many past studies of brochs, would appear to have no locus in referring to the general population. Research in Caithness and Sutherland seems to be demonstrating that typicality does exist in the population of brochs, but it is only to be found in sub-regional areas, giving rise to more than one type of broch.

14.3 Further Research

Understanding brochs in Sutherland is seriously hampered by the lack of excavation data. There has been recent excavation of other sites in the Sutherland straths (Fairhurst and Taylor 1970-1; Barclay 1985; Haggerty forthcoming), providing the beginning of a chronological and palaeo-environmental background for timber built settlements against which brochs can be assessed. There is however no comparable information for brochs. Particularly lacking is information on the chronological span of broch occupation in Sutherland. Was it similar to that which seems to be emerging in Orkney and Caithness? Did hut circle building really overlap with broch building? As Sutherland seems to have a range of archaeological sites which could possibly have been contemporary with brochs in contrast to Caithness, detailed chronological information from Sutherland could perhaps be more valuable in seeking to understand brochs even than similar information from Caithness.

In terms of further research Sutherland is quite different from Caithness, where it is suggested that a sufficient body of evidence already exists to allow a strategy to be designed which is selective, achievable, and not likely to be too costly (see Chapter 9). In Sutherland there is so little basic information and such a variety in broch type and in environment, that to achieve a minimum amount of useful data would require a great deal of work. It is recognised that the palaeo-environmental and excavation tasks listed below are major

undertakings. It does not seem likely that the intensive and extensive research of the kind required will be undertaken, other than incrementally as part of rescue excavation work, as was the case at Suisgill (roadbuilding) and Kilearnan Hill (forestry). It may be many years before a substantial data base for brochs in Sutherland can be built. Only the field survey tasks could be completed fairly quickly and inexpensively, but even if these alone were carried out, they would contribute much needed information in an area largely neglected in broch studies.

A general strategy for further research on brochs in Sutherland might be as follows.

Field Survey

(1) Completion of the detailed field analysis of broch sites begun in the three study areas, particularly with regard to identifying the existence, or former existence, of outer defences or enclosing walls and their potential chronological relationships with the broch structure.

(2) A search for missing brochs, using the remarkably consistent locational criteria identified in the three study areas. Not all suitable straths seem to have broch sites, and within other straths there are gaps in distribution which are at present inexplicable.

Palaeo-Environmental Analysis

(3) Further detailed analysis in other straths of the kind carried out at Suisgill and Kilearnan in the Strath of Kildonan in conjunction with excavation.

(4) Detailed research into the range of past micro-environments in individual straths by reference to pollen analysis and geomorphological analysis.

Excavation

(5) Excavation of a number of broch sites, selected according to location and site morphology as identified in the detailed field analysis. Excavation needs to take place inside and outside the broch structure to establish chronology, nature of internal furnishings,

existence of timber or stone surrounding buildings, relationship to extant outworks, existence of timber outworks etc.

(6) Further excavation of a number of selected hut circles and homesteads in selected straths to test the hypothesis generated at Kilearnan Hill that hut circles span a long period with the earliest placed highest on the strath sides, and the latest lowest, overlapping with the period of broch occupation. (This also depends on being able to obtain dates for brochs in the Sutherland straths.)