Surface Lithic Scatters as an Archaeological Resource in South and Central Scotland.

Christopher Scott Barrowman

Department of Archaeology

University of Glasgow

October 2000

Submitted for the degree of Doctor of Philosophy

Acknowledgements

I would like to thank all those who contributed to the work undertaken as part of the Scottish Lithic Scatters Project, including all the local archaeologists, museum staff, specialists, researchers and academics across Scotland. The list is endless as it includes everyone I have ever met throughout my research; ultimately all of their thoughts and comments are reflected in my writing.

Thanks to Colin Richards who came up with the project and gave me the opportunity to undertake the work in the first place. Thanks to Eland Stuart who helped with ideas for the report and thesis, and to Michael Donnelly for much help and assistance with the cataloguing and analysis of the lithic assemblages.

Thanks to Gordon Barclay at Historic Scotland for guiding Eland Stuart and I through the Lithic Scatters Project, and to others in the archaeology department at Glasgow who gave advise and assistance when needed (especially the secretaries who were an *invaluable* help).

Special thanks to all the landowners and local people who allowed me to walk, dig and think over their land, especially to John and Sheila Brett at the Garvald Community in South Lanarkshire. My time spent there was extremely educational and I value it dearly.

Finally, to my wife, and Martha, who have been more patient than me over the past few years. Rachel spent much time and energy editing the text for me. I am very grateful to her, for being a fantastic ear, mother and 'PhD widow'.

Contents

Contents	*Page*
Acknowledgements	1
Contents	2
Figures	3
Summary	8
Introduction A short history of interpretation	12
Chapter One The Scottish Lithic Scatters Project	29
Chapter Two The creation of the surface lithic scatters resource	64
Chapter Three Furnishing the furrows	120
Chapter Four The known facts you could count on your fingers	148
Chapter Five Walking through space	167
Chapter Six Dryburgh Mains	196
Section Two The Southern Pentlands area	234
Chapter Seven A rock in the rain	237
Chapter Eight Garbh Allt (rough, tumbling stream)	278
Chapter Nine A year in the Southern Pentlands	320
Chapter Ten Conclusion	376
Appendix One Map sheets showing distribution of scatters	390
Appendix Two Sources of the database information	417
Appendix Three Phosphate sampling the spot-test field method	426
Bibliography	428

Figures

Figure number and title	*Page*
1.1 Proportion of scatter sites by region	34
1.2 Dates when scatters were found or recorded	37
1.3 Number of scatters recorded from each source	39
1.4 Number of scatters by period	41
1.5 Size of scatters for Mesolithic, Neolithic and Bronze Age finds	42
1.6 Number of scatters by size	45
1.7 Integrity of scatters	49
1.8 Integrity by size of scatter	50
1.9 Integrity by scale of collection	50
1.10 Number of scatters by scale of collection	52
1.11 Survival of scatters	53
1.12 Associated sites for scatters	55
1.13 Number of scatters by additional archaeological investigation	56
1.14 Number of scatters by environmental work	59
1.15 Number of scatters by land use	60
2.1 Areas of various land capability for Scotland	68
2.2 Number of scatter sites found or recorded on arable land since 18th century (annotated with historical information)	88
2.3 Areas of woodland and forestry in Scotland	90
2.4 Number of scatter sites found or recorded since 18th century from forestry plantations	95

2.5 Major beach complexes in Scotland 100

2.6 Number of scatter sites recovered or recorded since 19th century from coastal areas 103

2.7 Number of scatter sites recovered or recorded in developed areas since the early 19th century 108

2.8 Location plan of Blackshouse Burn fieldwalking project 113

2.9 Plan of field M at Carmichael Estate, showing lithics surveyed 116

2.10 Showing pro forma sheets with details of the process of fieldwalking 117

3.1 Fieldwalkers on Mull 125

3.2 Number of scatters by period for Dumfries and Galloway 136

3.3 Number of scatters by scale of collection for the Borders 138

4.1 Empty fields 150

4.2 The facts of the database 157

4.3 Populated fields 165

5.1 Letter from the relation of a local collector 181

5.2 Sense of ownership 182

5.3 Letter 183

5.4 Mud, discovery 195

6.1 Fieldwalkers at Dryburgh 199

6.2 Pointing to the Eildon Hills 207

6.3 Fisherman in the River Tweed 208

6.4 Plan of field one 217

6.5 Andy and Hannah 220

6.6 Notched flakes from field one 225

6.7 Plan of field two 227

6.8 325 rough end scraper, 515 thumbnail scraper 226

7.1 Location map of area 239

7.2 Index to scatters and map sheets 240

7.3 Location of Weston 242

7.4 Land use in southern Pentlands area 250

7.5 Number of scatters by integrity 252

7.6 Integrity for large scatters 253

7.7 Integrity by period 254

7.8 Number of scatters by size 254

7.9 Size of scatters by period 255

7.10 Size of scatter by date of collection or record 256

7.11 Size of scatter by height 257

7.12 Size of scatter by land use 259

7.13 Number of scatters by scale of collection 259

7.14 Number of scatters recorded by collectors during the 1950s and 1960s 260

7.15 Scale of collection by period for scatters 262

7.16 Number of scatters with related material artefacts 263

7.17 Relationship of stone axes to scatters 264

7.18 Material association by period of scatters 265

7.19 Material association by function of scatters 266

7.20 Number of scatters by function 268

7.21 Function by period 269

7.22 Number of scatters for survival 271

7.23 Land use by survival 272

7.24 Source of information 273

7.25 Curators of the information from museums 273

7.26 Number of scatters by land use 275

7.27 Number of scatters with additional archaeological investigation 276

8.1 Reproduction of map with field-notes 280

8.2 Location plan of Garvald Burn 284

8.3 Scatter distribution at Garvald 285

8.4 'There is a ritual to potato sowing' 286

8.5 Gradiometer survey 287

8.6 Magnetic susceptibility survey 287

8.7 Page from notebook showing first results of geophysics 289

8.8 Garlic bulbs 290

8.9a phosphate analysis results 292

8.9b phosphate analysis results 293

8.9c phosphate analysis results 294

8.10 Dirty scrawls 295

8.11 Distribution of test-pits over scatter 297

8.12 Vegetable plot 297

8.13 The perfect test-pit 299

8.14 The beast 302

8.15 Plan of test-pit J^{north} (2 x 1 m 306

8.16 Plate of test-pit J^{north} (2 x 1 m) 306

8.17 Contents of soil samples 307

8.18 Field note-book entries 308

8.19 Distribution of finds in test pit A 309

8.20 'Clearing a path' 312

8.21 Material residues 313

8.22 Assemblage variability 314

9.1 Working at Melbourne 322

9.2 These tracks are intimately known 324

9.3 Chert clusters at Weston 328

9.4 Chert blades with retouch 330

9.5 Firespot 334

9.6 Knapping debris 335

9.7 Solid and drift geology for South Medwin valley 337

9.8 Probable sites of late glacial lakes 338

9.9 Reconstruction of possible post-glacial lake in South Medwin valley 340

9.10 Plan of Weston henge 343

9.11 Northern bank of Weston henge 344

9.12 Raw material and lithic types from Weston 1988 346

9.13 Retouched categories 347

9.14 Pitchstone and pottery from Weston 1998 351

9.15 Arrowheads, pottery and stone axes from Weston 1998 352

9.16 Finds from Trench 1 353

9.17 Lithic distribution on Corse Law (a) flint (b) chert 356

(reproduced from Clark 1989, 52)

9.18 Assemblage variables from Corse Law 357

9.19 Retouched types by material 358

9.20 Plan of long cairn on Greens Moor 362

9.21 Chert outcrop in the Southern Uplands 365

10.1 Cine projector and knapping debris 381

10.2 Tractor ploughing 381

Summary

This thesis, as the title describes, concerns lithic scatters as an *archaeological resource* in south and central Scotland. Surface lithic scatters are essentially seen by most contemporary archaeologists as representing destroyed archaeology; that which lies under the ground has been removed by the plough and cast to the surface of the field. The material is removed from its original context, and so little can be said regarding past activities. Most work undertaken on scatters has therefore concentrated on trying to retrieve as much information as possible from the preserved remains underneath the scatter. This thesis takes a different perspective, and accepts that the material on the surface and throughout the topsoil is worthy of investigation as an entity in itself.

By studying the lithic scatters resource in all its entirety (from the creation of the surface scatters by the plough, to the recording of the lithics by various fieldwalkers over time), information regarding the way we practice archaeology today, reveals certain flaws in the way we construct data. By looking at the contemporary processes which create the lithic scatter resource, it is also possible to understand relationships between contemporary activity and those throughout prehistory.

This work starts with a brief history of interpretation, bringing the reader up to date with how lithic studies have been conducted over the past three centuries. The disparate knowledge concerning scatters in Scotland led to the creation of the Scottish Lithic Scatters Project, which is outlined in chapter one. Of specific concern is the Lithic Scatters Database, and its analysis. Descriptions of each field give an intriguing insight into the extent of bias which is incorporated into the final data. It is also made clear that much information concerning the

lithic scatters resource which can be related to a social landscape is gained through the *creation* of the database, rather than any final analysis of the data

Chapter two turns to the processes whereby lithic scatters are created in south and central Scotland, as it is through a study of these that an understanding of the information contained within the database can be gained. The creation of the lithic scatters resource is intimately bound to the practices and routines of individuals, as well as to the natural occurrences across the country *today*. These range from the farmer ploughing his field, to the movement of sand dunes in storms. Ultimately, it is the fieldwalker him/herself who creates the recorded scatter.

The fieldwalkers who have created the scatter resource, are described in chapter three, and the extent of the resource across south and central Scotland is given. The people mentioned in the previous chapter are described more intimately, and it is possible to gain a glimpse of the faces responsible for the scatter resource. The discussion also centres on the fact that the information within the database is not necessarily representative of prehistoric activity; rather the activity of collection and recording in recent history. By looking at the database alone, and ignoring the background information given in this chapter, only an apparently polished set of data would be seen.

The way data is often accepted in archaeology today can be seen as a major problem. Chapter four considers this problem in more detail and shows that personal experience must be documented to place the data within a social, historical and cultural context. Recent thinking in theoretical archaeology has led to similar strands of thought, especially where the recording of the process of fieldwork is considered.

The relationships constructed with not only the scatter, but the place delineated by the scatter, allow us to understand more fully the familiarisation of place, and our understanding of that place. Through fieldwalking, a production of locality is formed, and it is possible to see parallels between how archaeologists understand their landscape, and how it may have been understood in prehistory. Lithic scatters delineate places in the landscape, which become appropriated through fieldwalking. Chapter five outlines the value of fieldwalking in this respect, and additionally shows how local archaeologists may be much better qualified than visiting archaeologists to understand and interpret place and landscape. From their inclusion into contemporary research, a multivocal and pluralistic archaeology is achieved.

Chapter six supports the theory discussed in the previous chapter, and supports it by describing the experience of a specific fieldwork excursion conducted as part of the Lithic Scatters Project. A study of the experience of walking a field from a personal perspective increases greatly the knowledge gained from traditional enquiry of the 'facts'. It is shown how preconceived ideas concerning the scatter before entering the field can be proved wrong afterwards. The experience of fieldwork is of as much value as the information collected from the fieldwork itself.

Section two examines the previous discussions by looking at the lithic scatter evidence for a specific locale in south and central Scotland. Evidence is taken from the database, and the information then set into a social, cultural and historical context (chapter seven). Chapter eight analyses a specific scatter in more detail within the same locale, outlining the *process* of fieldwork and the experience of being in the field. Different perspectives of the same locale are considered, through describing the activities of a group of farmers who live on the land.

Stories about prehistory can be created from the information described in these two chapters. Chapter nine describes specific locations and how they may have been experienced through prehistory. These interpretations are bred from the analysis of the scatters, the relationship between them and other archaeological evidence, and the architecture of the landscape. An understanding of the locale is formed from the authors own experiences within this landscape, as outlined in chapter eight, and throughout chapter nine.

The lithic scatters resource across south and central Scotland is in part defined by the information contained within the database, but ultimately, this must be linked to a whole array of practices and experiences which create the information in the first place. Only then can archaeological interpretations be made.

Introduction

A brief history of interpretation

> The terms Elf-bolt, Elf-shot, or Elfin-arrow, are invariably applied to the flint arrowhead throughout the Scottish Lowlands...This variation in the popular mode of giving expression to the idea of a supernatural origin for those primitive weapons, among the inhabitants of the mainland and the northern isle of Scotland, is worthy of passing note, from the definitive evidence it affords of a period when stone weapons were fully as much relics of a remote past, and objects of popular wonder, as now.
>
> Wilson 1863, 178.

Surface lithic scatters have been collected and catalogued since the early 18th century. Generations of collectors have stridden across ploughed fields and stumbled over misshapen sand dunes, in the hope of recovering material residues from long gone lives. Since the Enlightenment, stone tools were recognized as being anthropogenic rather than natural or supernatural, as the above quote describes. The philosophies practised at this time influenced antiquarian interpretations, and evolutionary theory created the idea of a progression from 'primitive' cultures (supported by proof from contemporary ethnographic accounts) to more civilized ones (Trigger 1995).

The birth of the Three-Age system in Scandinavia, placed within a strong scientific antiquarian movement, emphasised the importance of the study of material objects (ibid. 61). The Royal Society of London published antiquarian accounts and descriptions of archaeological finds;

these enthusiastic narratives were the preliminaries for descriptive analyses of stone tools which are accepted as the norm even today.

A Scottish prehistory was first recognized by Wilson, who reorganized the vast accumulation of artefacts belonging to the Society of Antiquaries of Scotland, along the same lines as proposed by Worsaae from his study of middens in Sjaelland, Scandinavia (ibid. 82). Wilson gave a strong evolutionary perspective to the study of prehistoric artefacts:

> The essential characteristics of the stone period, though illustrated by every trace of its arts, customs, and social condition, are embodied and epitomized in its weapons and implements. They mark alike in their material and workmanship, that primitive stage of man, which reappears wherever he is found in the same condition in relation to external appliances and underdeveloped mechanical skill. Alike in the mechanician of the primitive stone period, and in the modern worker in stone, shell and bone, of the Pacific coral islands or the American forests: man is seen employing his inventive ingenuity on the most imperfect materials, with results which, however made, are recognized as embodying the tentative use of experience and reason which distinguishes him from the most ingenious of Nature's instinctive artificers.
>
> Wilson 1863, 173.

The late 19th century saw a more culture-historical approach being taken to the vast collection of stone tools which were being accumulated by an eager antiquarianism. These studies were undertaken against a backdrop of growing nationalism and concerns with ethnicity in Europe (Trigger 1995, 149).

'Low-level theories' such as these have been described by Trigger (ibid. 21) as empirical research with generalizations, and include most typological classifications of artefacts and the identification of specific archaeological cultures. These theories never really refer to human behaviour, and stop at the artefacts themselves. The first attempt at putting faces to artefacts was by Childe in the 1920s, although on a purely functional basis

> The primary aim of archaeologists who adopted this approach was no longer to interpret the archaeological record as evidence of stages of cultural development. Instead, they sought to identify often nameless prehistoric peoples by means of archaeological cultures and to trace their origin, movements and interaction. The Neolithic period was no longer seen primarily as a stage of cultural development but rather a mosaic of sharply delineated cultural groups. The questions being addressed were of a particularist, historical variety. *There was also a general interest in learning how specific peoples had lived in prehistoric times.*
>
> Trigger 1995, 172 [my emphasis].

However, these studies still assumed that people lacked any form of agency, being constrained by limits set by the natural environment. Artefacts still appeared more real and alive than the people who made them. Historical traditions and unpredictable human choices were overlooked. It was only from the influence of Marxist theory that the reproduction of human life was considered, leading to a change in the way stone tools were studied. Technological approaches to material culture were not seen as important as social approaches (ibid. 222).

The development of the study of lithics exploded with the advancement of processual archaeological research. Graham Clark advocated these approaches, as he believed that

> The aim of archaeologists should be to determine how human beings had lived in prehistoric times by reconstructing as far as possible their economies, social and political organisations, and systems of beliefs and values and trying to understand how these different aspects of culture related to each other as parts of functioning systems.
>
> Trigger 1995, 265.

Binford's work heavily influenced the study of lithics, especially in America during the 1970s. He believed that artefact assemblages and their contexts could directly translate to the activities that had produced them, and that by studying modern day native cultures, analogies could be made with prehistoric activities

> Binford argued that ... archaeologists must be trained as ethnologists. Only by studying living situations in which behaviour and ideas can be observed in conjunction with material culture was it possible to establish correlations that could be used to infer social behaviour and ideology reliably from the archaeological record.
>
> Trigger 1995, 300.

These positivist approaches created a vast accumulation of data from lithic studies. The attempt at scientific objectivism highlighted many problems with the methodologies which had been carried out in the past from excavations and artefact analysis, and much work was carried out concerning the various strategies of lithic analyses, such as the formation process of scatters and how they relate to sub-surface archaeology. They attempted to create the flawless 'data-set', so looked at methodology in order to achieve this. These studies form a vast collection of literature encompassing many aspects of lithic scatters, and so will be discussed in more detail below.

Off-site approaches and formation processes

The previous discussion described lithic analysis through recent history. The advent of processual archaeology, as described above, gave way to much work on *lithic scatters* themselves. The majority of the work undertaken on lithic scatters has tried to define them in terms of how they relate to sub-surface archaeology.

Such work has been considered by Foley, who coined the phrase 'off-site' archaeology, and advocated a landscape scale approach to the study of archaeological remains, rather than concentrating solely on 'sites' (Foley 1981). He realized that scatters represented archaeological residues across a whole landscape.

Foley suggested that the 'archaeological record' is not a fixed entity but a product of our own perception (Foley 1981b, 157). He looked at the formation of the archaeological record by firstly considering "...rates and nature of settlement increment and site formation" (ibid. 158) and the accumulation of deposits at specific "spatial foci", with "concentrations grading out to a dispersed artefact scatter". A build up of material was considered and examples drawn from ethnographic case studies. From these he postulated that artefact accumulation is considerable given "numerous and repetitive small – scale events" (ibid. 162).

He concludes that "...the archaeological record of mobile peoples should be viewed not as a system of structured sites, but as a pattern of continuous artefact distribution and density" (ibid. 163), and that studies concerned with the total population of artefacts rather than discrete clusters should be termed "off-site archaeology" (ibid. 166).

He also considered the post-depositional factors which alter the material record, describing the various stages experienced by the artefact: artefact discard; burial; exposure; exchange and oscillation; movement, destruction. He believed that these were important criteria in need of careful separation to allow "prehistoric synthesis" (ibid. 178). This posed problems for interpretation, as Spikins explains

> ...the evidence artefact distributions across the landscape represent in the *present* is in fact a hierarchy of uncertainties, from the actual activities in the past to deposition, differential preservation, redeposition, differential visibility and collection, which all need to be untangled if we are to approach an understanding of past activities.
>
> Spikins 1995, 95.

Although having a concise and clear understanding of the nature of artefact scatters and the processes they have undergone, Foley is working within the 'geographical resolution of the 1960s' as he accepts himself (ibid. 180). Other studies have a similar nature, although concentrating on the physical processes experienced by individual scatters on a more local scale (Rossignol & Wandsnider 1992; Wandsnider & Camilli 1992).

The *physical* notion of a scatter in terms of its morphological development through time, has been examined in detail by Boismier (1997). He examines actualistic studies of lithic scatters and the formation of them, through computer modelling. He attempts to solve various problems surrounding lithic scatters through this work, problems which he includes as

> ... how far and in what directions have artefacts been displaced from their original positions? Are artefact distributions irretrievably smeared by tillage or do they retain some spatial integrity? What is the relationship between artefacts on the surface and those in the ploughzone? And finally, can tillage-induced patterning be distinguished from behavioural patterning?
>
> 1997, 1

Boismier gives a brief history of the ways in which archaeologists have investigated scatters through an analysis of their physical formation by undertaking observational research (ibid. 2). Such analyses have been primarily concerned with the destruction of contexts by the plough (Lambrick 1980; Hinchcliffe & Schadla-Hall 1980; Taylor 1974). Other research has concentrated on the relationships between the morphology of the surface scatter to any sub-surface archaeology (Binford et al 1970; Crowther & Prior 1985); the movement of artefacts within the ploughsoil (Boismier 1997; Odell & Cowan 1987); with the preservation of assemblages also having been examined (Hinchcliffe 1979; Mallouf 1982; Brown & Edmonds 1987) (see Boismier 1997, 2 for more references).

Boismier describes this research as mostly descriptive of process, and inferential in character, and is criticised by him as being of little use concerning the "...dynamics of tillage-induced pattern formation and the resultant artefact distributions visible on the surface of the ploughzone", of which he is primarily concerned (ibid. 2).

Actualistic studies

The above work is mostly concerned with actualistic studies of lithic scatters. The primary aim of this form of analyses is to collect empirical information concerning the movement of artefacts by tillage implements and the processes responsible for their occurrence on the surface of ploughed areas. These studies create under experimental conditions an artificial assemblage which is ploughed and monitored. The number of lithics and their positions are noted before and after each ploughing episode. As Boismier states

> These experiments have been highly variable in both their design and duration, and have employed a wide range of artefactual materials, pattern configuration and equipment type to investigate tillage effects.
>
> ibid. 2.

In some cases, where recurring regularities in artefact surface occurrence and morphology exist, there has been an acceptance that these indicate a stability within the scatter through time, and therefore that 'behavioural information' may be interpreted (Dunnell 1980). Others have challenged the empiricism of such studies and questioned the conclusions (Cowan & Odell 1990).

These studies all attempt to gain an insight into the past by analysing the archaeological record, and seeing it as a "...static contemporary phenomenon in which it is not possible to observe the past directly, but only indirectly by means of inferential structures based upon uniformitarianist assumptions" (Boismier 1997, 4).

Middle-range theories such as these consider site formation processes, and the formation of the archaeological record. As Barrett explains, these studies advocate an approach in which the archaeologist observes material residues of past dynamics, under the assumption that these past dynamics operate in our contemporary world with the same material effects as they did in the past (Barrett 1990, 33). An absolute meaning to the evidence is then achieved, by assuming that the experimentally validated relationships between dynamics and static residues also operated in the past. The collected data set can then be used to test theories about the operation of past systems, which are revealed by a given set of material residues. This approach:

> ...can only involve the investigation of the past in terms of general and ahistorical processes.
>
> ibid. 23.

Therefore, this approach is purely empirical in that it looks at data which corresponds only to natural processes and 'non-cultural specific organisational principles of human behaviour' (ibid. 23).

In relation to lithic scatters, Edmonds comments on this 'scientific' notion within archaeology (Edmonds 1990), stressing that these studies are closely linked with achieving rigid methodologies for gaining the maximum information from a scatter, in order to analyse the spatial patterning and hence achieve some form of prehistoric interpretation (Rossignol & Wandsnider 1992). He explains the popularity of these forms of interpretation in the same paper:

> I would not dispute for one moment that such studies are vital to a discipline whose object is past material culture. Yet I think that research of this nature has been elevated in the discipline *precisely because* it conforms to the model of scientific procedure which has prevailed for the last two to three decades. The processes under study can be quantified, replicated and verified. Their effects can be determined in something approximating an absolute sense. The problem arises when such work is seen as providing an almost sufficient basis for wider reference.
>
> Edmonds 1990, 26.

Lithic scatters have been preyed upon by empirical minds since the 1970s due to their very nature. If the need arises, scatters can supply endless lists of empirical information, which ultimately may aid certain forms of interpretation when set within different frameworks (see below).

Within contemporary archaeology, it is accepted by many that the data of the past is observed and has meaning within a present social, historical and cultural context, and these themes must be addressed before any interpretations are drawn from the material evidence. The way we consider material culture has moved on. As Edmonds states:

> From the inception of the Three Age system through to more recent studies, [the study of stone tool technology] has often been cast in a major role: as a marker of cultures, as a system that determines the character of society and stimulates change. Admittedly, we are now more reluctant to equate particular artefact types or assemblages with specific 'cultures', or with stages in grand evolutionary schemes. Moreover, we now acknowledge that while technologies and social relations are often inter-twined, there is little merit in the view that productive forces shape society in a strict and deterministic sense.
>
> Edmonds 1995, 13.

He goes on to criticise some current research, and blames this on a deep-rooted tradition of enquiry, as we have seen above.

> In keeping with this tradition, the technological system is generally seen as an arena which is somehow *divorced from history and from lived experience*. It is a realm where decisions are taken on the basis of an explicit and utilitarian logic and in which responses are made to largely external stimuli...All that we appear to require for a satisfactory interpretation is detailed description and 'common sense'.
>
> ibid. 13

Although he agrees that function and productive efficiency is important and plays a part in interpretations, they are in themselves of no use in understanding the roles that artefacts would have played within past societies (ibid. 14). He argues that material objects and the way they are categorised contribute to the shaping of personal identities and relationships on many levels.

> Smoothed with service and patinated with history, they may hold stories about the self and society which are understood or made familiar through social practice.
>
> Edmonds 1995, 15.

A social archaeology

Edmonds advocates, as others have done in recent years (see below), a social archaeology whereby the focus of analysis is directed away from the artefacts themselves, and placed upon the relationships between the artefacts and their contexts (ibid. 19).

> We cannot assume that the simple documentation of 'things' will lead us in some straightforward manner to the human pattern of the past. On the contrary, a concern with the ways in which objects contributed to the creation of people as social beings inevitably draws us into the realm of interpretation.
>
> Edmonds 1995, 19.

Since Barrett suggested that archaeological evidence should be treated not as a *record* of past events and processes, but as *evidence for* particular social practices (1987; 1990), much archaeological interpretation has been concerned with the history of knowledgeable human agency. More adventurous works, incorporating scatter evidence into wider *social landscapes,* have been undertaken since the early 1990s (Barrett et al 1991; Bradley 1993; Edmonds 1995, 1999; Edmonds et al 1999; Gosden 1994; Thomas 1991; Tilley 1994a; 1994b; Whittle 1997).

Barrett *et al* define *social archaeology*:

> Social archaeology confronts several historical problems. It considers how people reproduce (1) their material conditions through their actions upon the environment; (2) the social system by maintaining the demands, and meeting the obligations, of social discourse; and (3) their knowledge and understanding of how to proceed in such practices. The emphasis here is upon *reproduction* in the sense of the routine maintenance of social practices, rather than upon discovering descriptive terminologies for entire social systems, such as band, tribe, chiefdom, state etc. These routines are daily and traditional practices, and historical analysis should reveal the means by which such practices were maintained or transformed. Archaeological evidence is not simply a material record of social processes: it is part of the material resources employed in past social practices.
>
> Barret et al 1991, 6.

These studies begin to make sense when situated within a phenomenological framework. This approach uses ideas from a variety of sources, describing how people understand and put meaning on their world. For instance, Bourdieu's *habitus* concerns the routine social practices through which people experience and understand the world, often in ways that are completely inarticulate (Bourdieu 1977). *Habitus* is knowledge learned through being in the world and by having attentive involvement within that world (Bender 1998, 35).

Gidden's 'structuration' theory engages with peoples active involvement in the world. Agents create the structures within their worlds which in turn constrains and enables agency (Giddens 1984). Additionally, Ingold forms his 'taskscapes', whereby 'human technical practices' are embedded in the 'current of sociality' (Ingold 1993, 158).

> It is the entire ensemble of tasks, in their mutual interlocking, that I refer by the concept of *taskscape*.

ibid. 158.

Within a time-space perspective, ('...the routine movement of people through landscapes, constituted by the locales in which they came into contact.' Barret et al 1991, 7-8), lithic scatters can be seen as places which structure and influence peoples' understandings of the world.

Thomas sees the benefits of the study of lithics in that:

> ...while the structural traces of prehistoric settlement might be minimal and fragile, stone tools are relatively indestructible, and remain locked in the topsoil, moving relatively little from their point of discard.
>
> Thomas 1991, 14.

He explains that typochronology allows a separation to be made between the 'earlier' and 'later' Neolithic assemblages, in terms of both tool types and the characteristics of waste flakes and blades. As will be discussed in chapter one, Pitts and Jacobi (1979) devised this chronological indicator in their analysis of lithics from Southern British assemblages. Subsequently Ford (1987) used a scheme of fitting surface lithics into specific chronologies (see below).

Thomas (1991; 14-19) draws on lithic scatter evidence to demonstrate the expansion of later Neolithic settlement "...from an initially fairly restricted area" in the Thames Valley (after Holgate 1988a, 135). "The evidence of the lithic distribution...is that the nucleated scatters of the earlier Neolithic gave way to more extensive and diffuse spreads (and may be interpreted as representing a changed system of landuse)" (ibid. 27). However, this is the only way the scatters within the study area are demonstrably useful. Relationships between scatter evidence and other remains are only briefly mentioned later in the same publication (Thomas 1991, 145; 171).

In a separate study, Tilley (1994a) takes these interpretations slightly further, and considers the scatter locale

> A monument or place encountered in the course of a walk between places is an altogether different matter. Approaching it slowly, from different directions, and anticipating arriving, it is possible to observe in a much more subtle manner the way in which it is related to its physical surroundings, the lie of the land. *Even a site which you cannot see*, such as a Mesolithic flint scatter, acquires in this way a greater significance and interest.
>
> Tilley 1994a, 74 [my emphasis].

These arguments stem from a study of monumental archaeology, and the placement of monuments within the landscape, Tilley being the exception to some degree, by incorporating any scatter evidence which is available within his case studies into a socially defined landscape. Similar observations are made by Bradley (1989, 1994) although again on a long-term time scale, creating significance of the scatters from a primarily monumental perspective (Bradley 1991).

In the above instances it is the specific aim of the texts to understand the creation and manipulation of social space by the building of monuments within these landscapes throughout the earlier Neolithic and on to later prehistory. Scatters are only *starting* to be appreciated as a part of these studies.

A monumental bias

As we have seen, the majority of the recent social theory has had a heavy bias to monuments. Schofield also mentions this fact in regard to setlement evidence:

> Such studies are monument-based; in general, settlement evidence plays little more than a bit-part in such studies..." (1995b, 106).

He sees the problem lying within the nature of the settlement data, within the scatter resource itself, denouncing scatters as not representing "good data" (1994, 90), and as '...an archaeological occurrence subsequently destroyed' (ibid. 90).

Scatters are as diverse in size, date and archaeological activity as the whole of the archaeological record itself. Scatters may represent a single knapping episode which took a few minutes to create; or they may represent the mixed attributes from long-term occupation within which multiple activities took place. Artefacts may have been ploughed up from a living floor, or from the contents of a pit cut into the ground. Ultimately, it is difficult to interpret what scatters actually represent, as Schofield argues.

He feels that "...the data should be presented in a way that can be useful to and useable by other researchers" (ibid. 106), so that comparable surveys can be created. He goes on to define parameters allowing this process to operate. He attempts to define the resource, or reach a point from which separate parts of the resource can be identified and defined, by the creation of a database containing information on all the lithic scatters in England (see below).

One conclusion he reaches is that an integrative approach should be used when creating an interpretation from scatters, examples cited are primarily with palaeoenvironmental evidence, to build up a picture of prehistory through time (Schofield 1995c). The creation of long-term time-scales of prehistoric communities, *la longue durée* (after Braudel) is possible using lithic scatter evidence according to Schofield (see Bradley 1991). The relationship between the time-scales of human practice and the time resolution of the archaeological record can be explored by using surface lithic scatters. He also argues that future lithic scatters studies should integrate all material remains within the landscape, or 'taskscape' as Ingold describes; that landscape should be viewed as "social expression, by ensuring that material evidence is made to speak to social questions" (ibid. 108).
These themes are expressed by Gosden:

> There is no such thing as an isolated act. Every action we perform is contained within a network of actions stretching across time and space. For instance, the act of flint

> knapping has implicit within it the purposes for which the finished tools will be used. These purposes exist in the future and may involve activities which will be carried out in another location...Consequently, every act contains within it implicit links to other acts separated in time and space...It is the mass of habitual actions and the referential structure they form which carries the main burden of our lives, giving them shape and direction.
>
> 1994, 15-16.

Mark Edmonds recently examined the traditions of lithic working as part of and indeed stemming from *people* and social structures (1999). He considers the 'reproduction' of the social world

> 'Reproduction' here means both the maintenance and reworking of the social categories and relations that are bound up in particular ways of living. That interest stems from the fact that the ideas and institutions that people recognise do not exist simply in the abstract: they are part of the fabric of practical life and it is through the reworking of practice that they are often changed.
>
> Edmonds 1999, *x*.

Small-scale events that make up people's everyday lives cannot necessarily be seen by looking at monuments. Lithic scatters however, are material residues from the very practices which encapsulate every day life. Variations in practice and technique can be postulated and suggested through the metrical study of stone tools. Stone tools and waste can '...provide a chronologically sensitive indicator of the inhabitation or use of particular areas' (Thomas 1991, 14). From the small-scale events, to ones extending over longer time periods and building up as palimpsests, landscape itineraries can be created (Edmonds et al 1995, 71). Ultimately, further work such as geophysics, test-pitting and excavation will allow a more specific interpretation of the activities at selected locales and sites (chapter 8).

Recent studies have started to address lithic scatters as an archaeological resource worthy of individual study and consideration albeit in an ad hoc fashion. Confusion over this resource still reigns due to the nature of the information existing, which at best has been disjointed and of an unknown quantity, *especially in Scotland.*

A lithic scatters database

In 1992 the English Ancient Monuments Advisory Committee endorsed a recommendation that current knowledge of surplus lithic scatter sites was in urgent need of consolidation. Consequently a pilot study was initiated in Buckinghamshire, Cornwall, Oxfordshire and West Yorkshire (Schofield 1994), to evaluate all known records concerning lithic scatters.

The Monuments Protection Programme (MPP) was set up by English Heritage to develop an understanding of the archaeological resource. Schofield (1991) discusses the value of lithic scatters as part of this resource, but accepts that little is known about scatters on a national scale, due to poorly recorded data (1991, 92).

> As with all other MPP initiatives, it was felt that without this broader understanding, research priorities could not be defined objectively, at least not on a period - or regional-basis...until we *understand* the resource, we cannot begin to establish where the gaps in our knowledge lie...

The suggestion by Schofield to collate all the information on lithic scatters was undertaken in the belief that a systematic ordering of the scatters in database form was a necessary research tool (1994) as discussed above. Schofield advocated a full analysis of the resource so that its extent could be clarified. He formed the idea of creating a database, which would define the size and state of the lithic scatter resource. He saw a use for lithic scatter material in contributing towards "...high quality and well-researched social histories within what are becoming gradually more refined theoretical and temporal frames of reference" (1995c, 111).

Schofield believed that one advantage of creating a database would be that comparisons could be made between scatters, and that a standardised set of information would be achieved (1994, 106). Unfortunately, he failed to realise that the information accumulated is never 'objective' as he intimated: "...a truly objective examination of material remains must be accompanied by some notion of what the archaeological correlates of a nomadic taskscape will be. Set in that context and within the temporal context of long-term processes...lithic scatters might start to mean something more in a general, human behavioural sense" (ibid. 110).

Although his suggestions for the use of lithic scatters within future research agendas are impressive, he fails to realise that the creation of categories through compiling a database on lithic scatters does not lead to an 'objective truth'. To believe that an 'objective examination' of the data is possible harks back to the scientism mentioned above. Schofield fails to comprehend that categories themselves create the data (as will be discussed in chapter 4). Although he sees the problem within the nature of the resource, as it is 'an archaeological resource subsequently destroyed', he fails to question the 'data' itself, taking it as self-evident. There are problems with this approach. By breaking information on lithic scatters into individual components, it is not acceptable to assume that more information is immediately drawn. Although compiling a database as such is an invaluable tool where such information was lacking before, an understanding of the processes at work behind the creation of the lithic scatters must be included and appreciated.

This criticism can be addressed to the other authors working with data which they take to be self-evident. Not enough thought is directed at the processes involved in the creation of the data, before interpretation of this data is attempted. These issues shall be addressed in chapter 4, after first examining the dataset which is described as the Scottish Lithic Scatters Database. The creation of this entity must be looked at before the problems inherent within it can be described. The following chapter will outline the database and its contents.

Chapter one

The Scottish Lithic Scatters Project

lithic /ˈlɪθɪk/ *adj.* of, like, or made of stone. [Gk *lithikos* f. *lithos* stone]

scatter /ˈskætə(r)/ *n.*the extent of distribution of...[ME, prob. var. of SHATTER].

The Oxford English Reference Dictionary 1996, 837 & 1293.

The Scottish Lithic Scatters Project

The Scottish Lithic Scatters project was conceived in 1995 as a response to the appalling state of information concerning lithic scatters in Scotland. It is recognised that the Scottish situation is different from that existing further south. Projects employing systematic fieldwalking are relatively new in Scotland (Downes and Richards 1993; Bradley et al forthcoming), whereas in England fieldwalking projects, employing different systems of collection, have been undertaken on a large scale over the last two decades (Richards 1988). The main aims and objectives of the project are set out below (after Richards 1995):

Aims

- to record on database all surface lithic scatters (where located) in Scotland
- in collaboration with RCAHMS (NMR), to provide detailed distribution maps of surface lithic scatters for Scotland
- to evaluate surface lithic scatters in terms of integrity and function
- to determine regional differences

Objectives

- to provide Historic Scotland with detailed information necessary for the evaluation of lithic surface scatter and to impose presentation/ protection policies
- to increase archaeological knowledge of lithic surface scatters and provide criteria for their assessment
- to produce a general methodology for the practice of systematic fieldwalking in Scotland
- to update the NMR thereby developing an accessible database of substantial research potential
- to make available to local authorities and museums the results of this project

Through the compilation of the Scottish lithic scatters database it was seen that the information confined by the field categories was changed to suit the needs and interpretations of the authors, and the questions asked of the data. More information was gained concerning the forms of the scatter resource through the process of compiling the database than by analysing it as a finished product (chapter 4).

Through interpreting source material, it was possible to understand how the information was manipulated subjectively to suit the needs of the database. This process also highlighted the problems of interpreting prehistoric activity from the information, at best the information described how and when the scatters were formed and recorded over the past three centuries rather than during prehistory. This is obvious throughout the discussions of the database fields below.

However, given its limitations, the database and the information therein is still an invaluable research tool, as it has brought together a vast amount of information which was previously unknown. The problems inherent with any such construct must be appreciated and accepted, before further interpretation of the information is possible (chapter 5).

The database design.

Colin Richards' proposal of 1995 defined a series of discriminatory criteria by which lithic scatters might be categorised. They followed the English Heritage guidelines laid out in Schofield's 1991 paper and formed the basis of the database design. As the element of bias inherent within the construction of the database was realised, some fields were altered. Certain types of information which had been recorded by various fieldworkers gave an extra dimension to the resource, and so was incorporated. The fields which make up the database are described below, with relevant totals and characteristics of the information contained within them given for South and Central Scotland where appropriate.

Map number/ Eastings (NGRE)/ Northings (NGRN)

The initial three fields are self-explanatory and will be the main link with the GIS system which the database may be merged with. Grid references are given in six figures wherever possible.

Site name

The name of the site. In cases where lithics have been collected from one site by different collectors over a long period, the name given to the site may vary, according to each collector's description.

Parish

This information is not always included, and may not actually be necessary. However, due to its use by various sources, such as 'Discovery and Excavation in Scotland', it has been left for now.

District

Again, this field is included as a guide to provenancing the data.

Region

These regional divisions concur with the administrative areas which took effect in April 1996. The areas *emphasised* make up South and Central Scotland, analysed within this thesis.

Aberdeenshire	*East Ayrshire*	*North Lanarkshire*
Angus	*East Dunbartonshire*	Orkney Islands
Argyll and Bute	*East Lothian*	Perth and Kinross

Borders	*East Renfrewshire*	*Renfrewshire*
City of Aberdeen	*Falkirk*	Shetland Islands
City of Dundee	*Fife*	*South Ayrshire*
City of Edinburgh	Highland	*South Lanarkshire*
City of Glasgow	*Inverclyde*	*Stirling*
Clackmannanshire	*Midlothian*	Western Isles
Dumbarton & Clydebank	Morayshire	*West Lothian*
Dumfries and Galloway	*North Ayrshire*	Unknown Sites

There are 22 regions in South and Central Scotland, with lithic surface scatters being present in all. Figure 1.1 shows a bar chart with the proportion of sites containing scatters from each region recorded within the database.

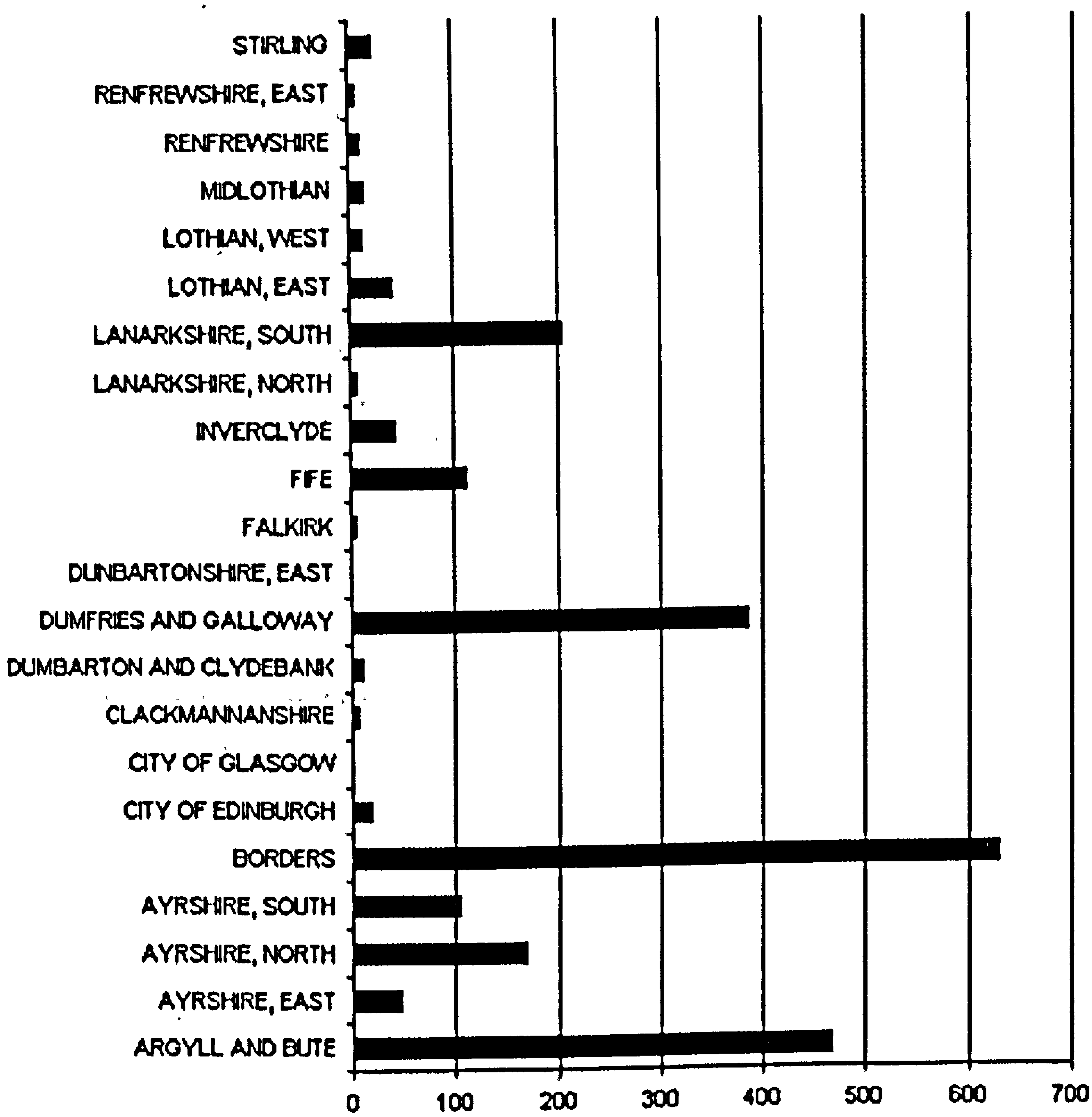


Figure 1.1 Proportion of scatter sites by region

The Borders has the largest proportion of sites with over 600, Argyll and Bute, and Dumfries and Galloway, lie on either side of the 400 mark. These figures are not surprising considering that these three regions are the largest in terms of total agricultural land, and the majority of scatters are recovered through walking ploughed areas. This theory is supported by the fact that the largest region in Scotland according to actual surface area is the Highland region, which has a relatively low number of scatter sites, due the majority of it being peat covered and therefore having a low amount of agricultural land.

The same patterns exist throughout the smaller agricultural areas: North and South Ayrshire, Fife, and South Lanarkshire all have over 100 scatter sites each. Inverclyde, East Lothian and East Ayrshire cluster around the 50 mark, which is also self explanatory when considering the size and agricultural regime of these areas, although it is surprising that only 42 sites are recognised from East Lothian, and most of these are clustered around the north-eastern coast. This may be a reflection on the lack of recent fieldwalking which has been carried out within the area.

The regions which have the smallest numbers of sites all have a large proportion of urban development, save Stirling, which may be explained in terms of insignificant fieldwalking coverage. Carse clays within the main agricultural part of the region may also contribute to a low level of finds. Higher ground dominates the north of Stirling, and is seen as a contrast to the Lowlands in terms of land which is subject to intensive agricultural there.

Class

Class refers to the contents of the scatter. This field has been added to the original database as it supplies added information about the contents of each collection, what type of artefact is present and therefore gives an indication of the type of site which may be represented by the lithic assemblage. This field is used by the National Monuments Record database, and the information received from them has been transferred straight into the Lithic Scatters database.

There is a large quantity of information held within this field. Interpretative decisions made about the possible functions of sites are in part made according to the numbers of different tool types represented in a scatter. This interpretation based partly from ethnographic analogy was used to inform the lithic scatters element of Holgate's volume of 1988b and also a criterion of Julian Thomas' study discussed in the opening chapter of Rethinking the Neolithic (1991).The components of this field are used to interpret *function* (see below).

Curator

Where the scatter is currently archived. If the assemblage is kept by the finder, then their name is stated, otherwise the museum is noted. This information is obviously important in cases where material needs to be retrieved and studied in future.

Finder/ Donor

This field describes either who found the scatter, who reported, or who donated it to a museum. This last instance is usually the case if the information has been received from a museum (see *Source* below).

Date

This refers to either when the scatter was found, when it was reported, or when it was donated to a museum. The dates of when each scatter was either found or recorded by the curator are presented in figure 1.2. These range from 1794 to 1999, and show a variety of interesting peaks and troughs reflecting social changes in the activity of fieldwalkers and collectors over this period.

The lowest number of scatters were recorded from the beginning of the 18th century to the mid 19th, with a sudden rise in finds at around 1860. This is no doubt due to the popularity in antiquities with the rise of the subject as an academic discipline from the middle of the last century to the end. There are a number of rises and falls throughout the latter half of the century, with clusters around the 1890 mark. The material recorded from these dates within

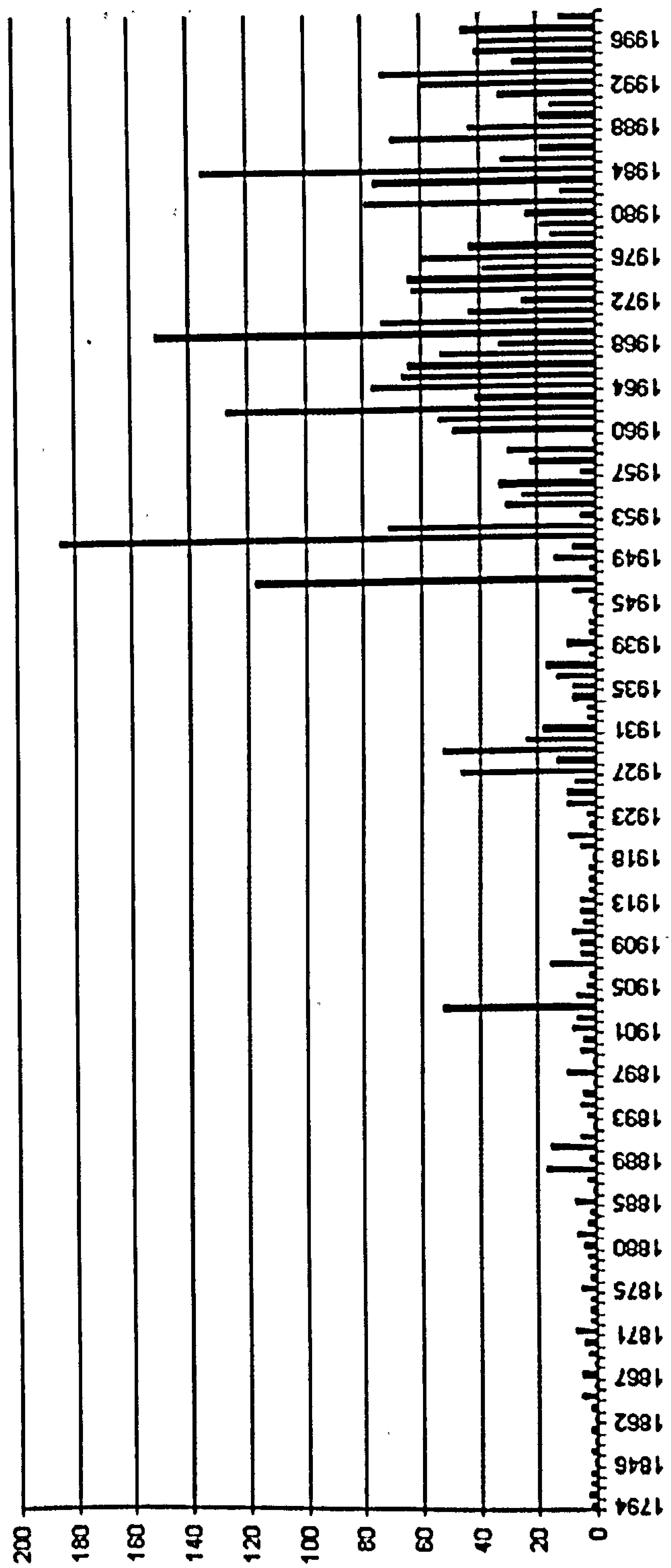


Figure 1.2 Dates when scatters were found or recorded

the database show a majority of single finds, especially arrowheads, the collection of which dominated the discipline at this time. This trend continues into the 20th century but the graph is severely clipped around the time of the two world wars, with a high proportion between the two. Although the amount of ploughing during this period was prolific (see chapter 2), it is obvious that little fieldwalking was undertaken. An explosion of scatters are recorded from the 1950s, when the mechanisation of farming took place in Scotland. Many of the sites corresponding to the peaks in the early 1950s are situated in the Borders, and this area was one of the first to experience the mechanical revolution

This intense collection slackens by the end of the decade, but increased collection starts at the beginning of the 1960s and continues throughout the second half of this century, with somewhat erratic tendencies.

Although the method of interpretation used here is very general, it can be seen that a collection of data such as this gives interesting insights into the socio-economic factors throughout the centuries since collection of lithics began. It must be noted however that concentrations of recorded scatters may well indicate other social factors besides fieldwalking alone. In some cases museum catalogues have been updated within the space of one or two years, resulting in an exaggerated number of scatters recorded to this period. The activities of one fieldworker alone can also obviously push up the number of entries for certain years, collectors such as Helen Mulholland in the early 1970s, or research projects such as Steve Mithen's in the 1990s are clearly obvious as longer needles pushing out from amongst the data.

Given this invaluable record of the creation of lithic scatters throughout the past three centuries, chapter two investigates the processes at work behind the creation of these scatters through mechanical manipulation of sub-surface archaeology.

Source

Where the data has been taken from. There are a limited number of variables for this field, these being: N (National Monuments Record); M (museums); P (private source/ collector); and J (journals). A more detailed discussion of these can be found in appendix 2.

Out of the five source categories, the one from which most information on scatters comes is the National Monuments Record at 38% (see figure 1.3), just ahead of museums at 37%. It is interesting to note how many records have come from museums which are apparently not held within the NMR. Journals and private collectors hold 15% and 9% of the scatter information respectively, and a small number of scatters are held by the regional Sites and Monuments Records.

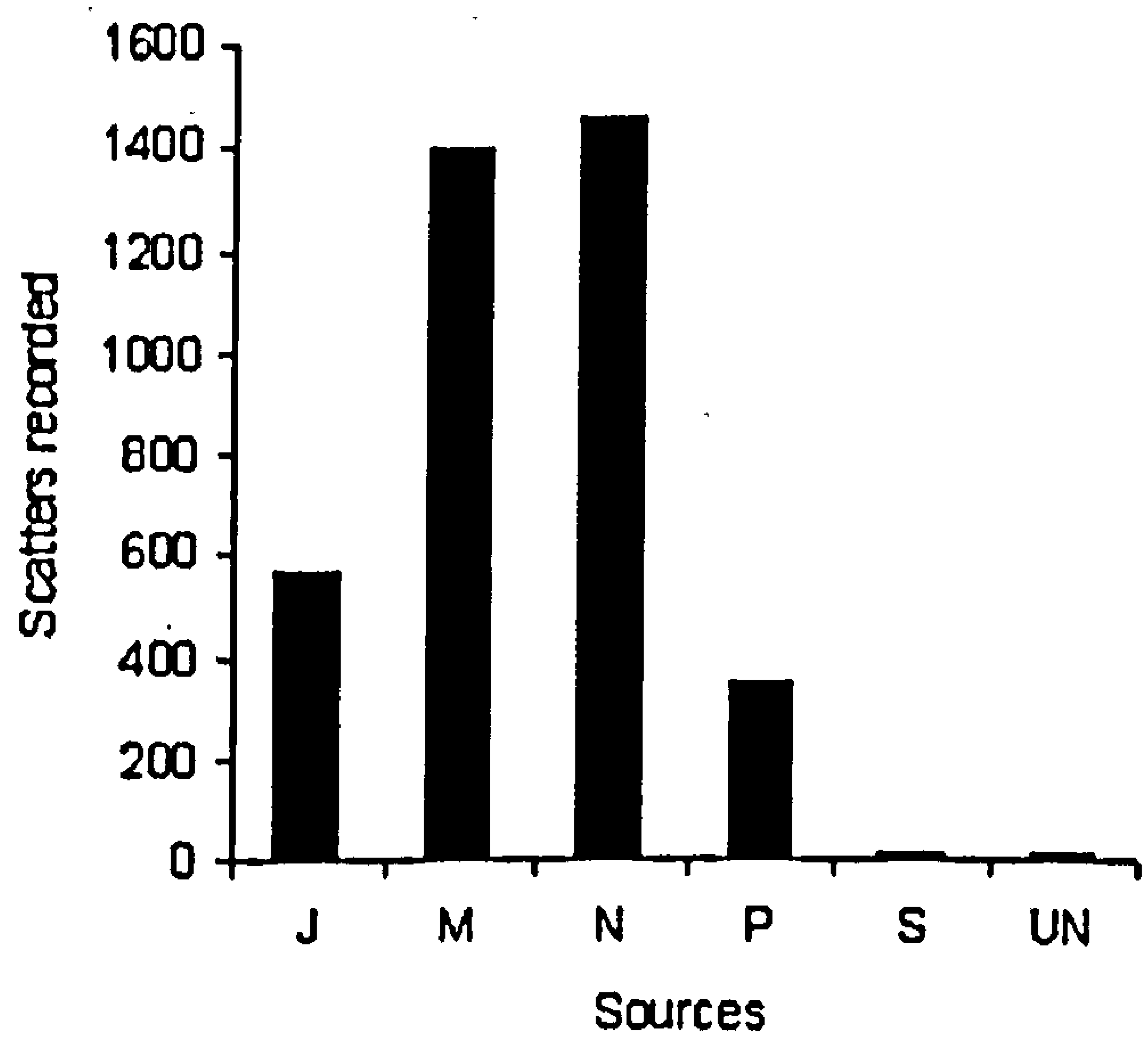


Figure 1.3 Number of scatter recorded from each source

Period

Referring to the period of the scatter, which in many cases is unknown (UN). Unless a typological indication is given within the *Class* field, or from the source of the information, it is difficult to interpret the period of the scatter. In some cases, where either a multi-period collection exists, or where the lithics may be from one of two periods, multiple entries have been inserted. The variables are: PA (Palaeolithic); ME (Mesolithic); NE (Neolithic); BA (Bronze Age); IA (Iron Age); RO (Roman); MED (Medieval). Where possible or desirable a prefix noting early (E) mid (M) or late (L) is added.

Where a number of periods are represented within one scatter, the periods have been separated (duplicated or multiplied x 3 depending on the number of periods represented) and prefixed with MX. Therefore, a scatter which contains microliths, leaf shaped arrowheads and barbed and tanged arrowheads has been divided into three, with all the entries staying the same apart from the period field, which has been divided into MX/ME, MX/NE and MX/EBA. The overall number of scatters increases rapidly, as there are many instances where diagnostic tool types from different periods occur together. One mixed scatter occurs as a number of scatters, each broken into their individual periods.

Figure 1.4 gives a range of periods which have been entered for the scatters. The majority of these are mixed assemblages, and due to the difficulty in classifying lithic surface scatters by period, over 1000 are unknown.

The highest proportion after UN is mixed Neolithic, with well over 800 scatters being described as such. Mixed Bronze Age, Mesolithic and mixed Mesolithic all fall around the 500 mark. Neolithic scatters count in at over 250, while Bronze Age scatters – unmixed – fall below 200. These two categories represent diagnostic scatters, many of which will be single finds. This can be validated by examining figure1.5. The number of single finds increases from under 100

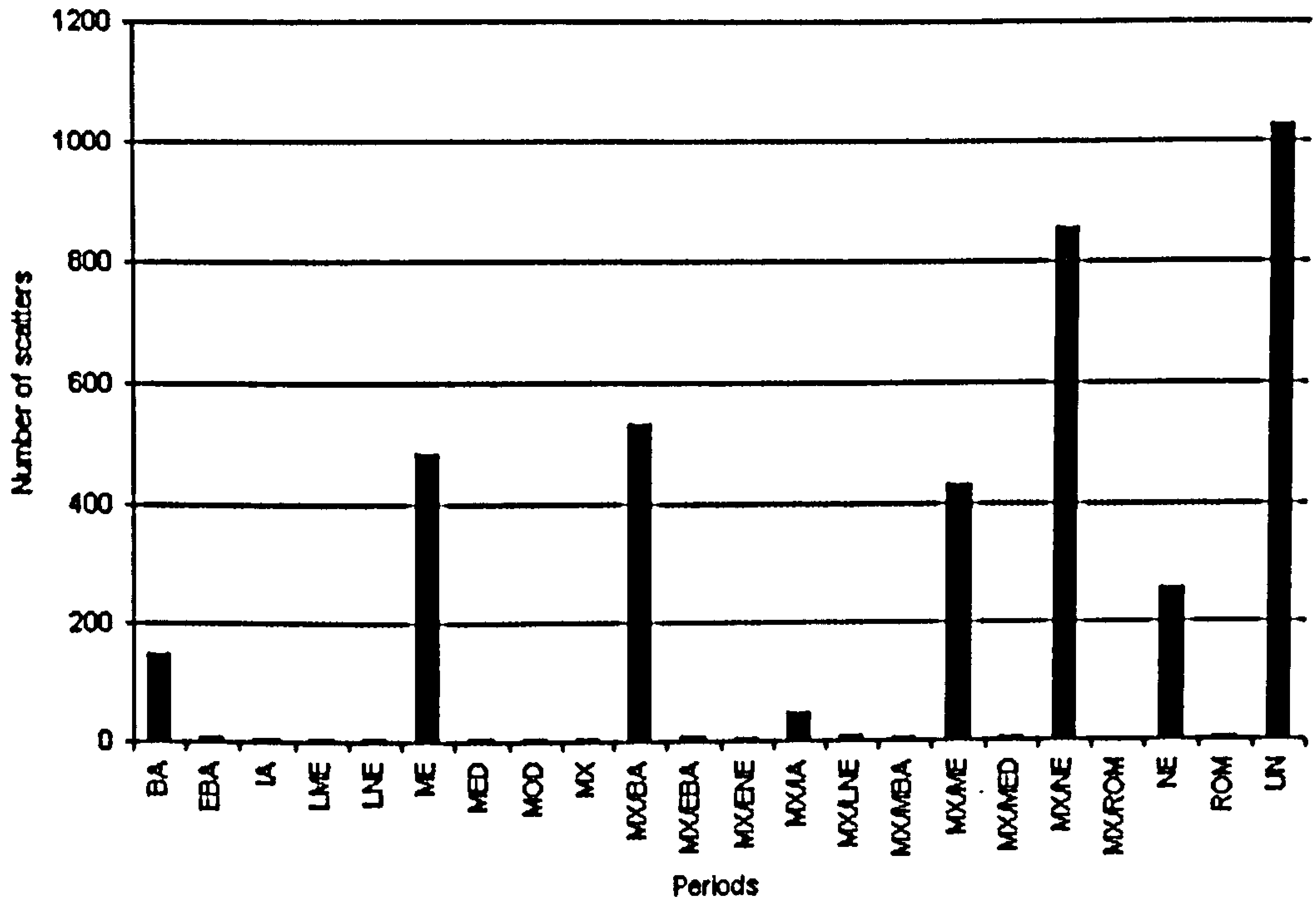


Figure 1.4 Number of scatters by period

in the Mesolithic assemblages, to under 300 for Neolithic scatters, and over 250 in Bronze Age ones.

Mesolithic scatters (usually given this label with the presence of microliths and the appearance of blade production (Myers 1987), have increased in number through recent work on many of the islands off the West coast and throughout Dumfries and Galloway. The high occurrence of Neolithic and mixed Neolithic/ Bronze Age scatters can be attributed to the specific diagnostic properties which are present within these periods i.e. scrapers, leaf shaped, and barb and tanged arrowheads.

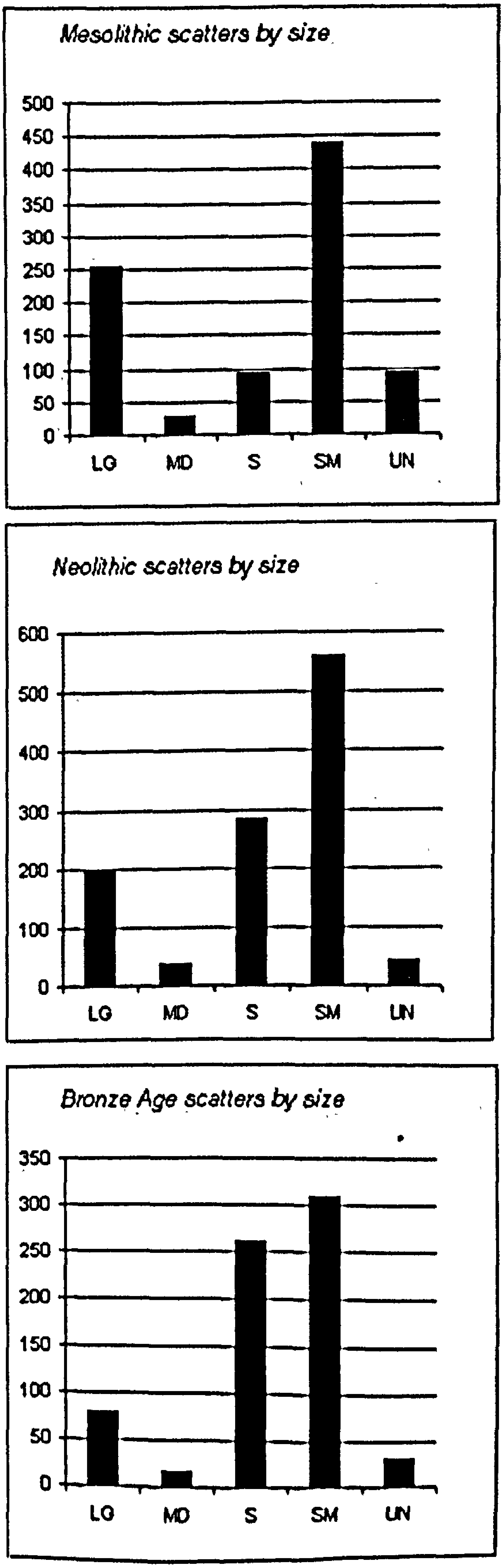


Figure 1.5 Size of scatters for Mesolithic, Neolithic and Bronze Age finds

The appropriation of periods to specific lithics has been discussed by Ford (1987). He uses a scheme of fitting surface lithics into specific chronologies 'independent of dating by association' (1987, 67). The use of length: breadth ratios of intact retouched flakes as a chronological indicator was established by Pitts and Jacobi (1979). This approach distinguishes between Earlier and Later Neolithic material as flakes in Southern British assemblages tend to grow broader through time. Subsequent work (Ford et al 1984), has shown that the trend towards broader flakes continues throughout the Bronze Age. This work refers to lithic material from Southern England, and it outlines general patterns across long periods of time. It has a very deterministic element to it, and disregards many nuances which may have occurred throughout lithic working in prehistory. It is also difficult to compare the patterns directly to Scottish traditions. It is also worth noting, as Ford does, that not all scatters are homogenous and will represent a mixture of material, in this sense metrical analysis is not so suitable. "The criteria...have to be applied cautiously to surface scatters and with a greater degree of ambiguity than is desirable." (1987, 78).

The degree of examination and research described above amounts to a large volume of work in associating sizes of lithics to each other, such a task would be great in the case of the lithic scatters resource, as it would be necessary to re-classify thousands of collections. The periods marked within the database have been taken directly from sources, or given to diagnostic features within assemblages.

There are a whole variety of mixed assemblages present within the dataset, reflecting the variety of content within many surface collections. In many cases the mixed scatters will be classified as such due to the presence of one or two diagnostic artefacts from two or more periods (Schofield 1993; Young 1989), i.e. a microlith, and barb and tanged arrowhead amongst many other undiagnostic lithics. This scatter would then be described as two: mixed Mesolithic; and Mixed Bronze Age. Where mixed assemblages are concerned, there will be two or more scatters present at the same site:

> The range of artefact types remains as the only 'solid' (cf. Entwhistle and Richards chapter 3) means by which we can attempt to analyse variations in the sorts of activities carried out in particular areas of the landscape.
>
> Gardiner 1987, 57.

Gardiner also discusses the classification of surface assemblages within museum collections, in lieu that "It is at the regional scale that most useful information is gained...and it is the assessment of the general characteristics of whole groups of surface assemblages that best allows for comparative studies to be made" (ibid. 58). She uses an approach which looks for presence and absence of groups of implements rather than of counting individual tool types, to fit assemblages into a Mesolithic - post - Mesolithic divide.

Assemblage Size

The categories within this field are: S (single find); SM (2-49 finds); MD (50-99 finds); and LG (100+ finds). *Single finds* was added after several months of data input - it seemed a logical step as large numbers of single finds have been collected from the same areas over several consecutive years, therefore scatters are apparent but only after combining this information. Scatters represent a spread of material remains across the landscape, so to ignore single finds would go against the projects aims and objectives.

Figure 1.6 shows the relative values within the dataset according to the size of the scatter. Again there are a few which have no information attached (UN). The highest incidence is that of small scatters, those made up of between 2 and 50 lithics. This seems a fair number, as many of the scatters which have been recorded may actually be larger in content, but only the number of pieces collected over the course of one fieldwalking incident will be counted, hence, a small number is given. Over 1000 single finds are recorded within the dataset. Many other isolated finds will be present within scatters as unrecognisable mixed assemblages. Indeed, many single finds may actually represent scatters themselves, the isolated lithic being recognised through its obvious diagnostic morphology, and waste or less interesting pieces may have either been disregarded by the fieldwalker, or completely missed.

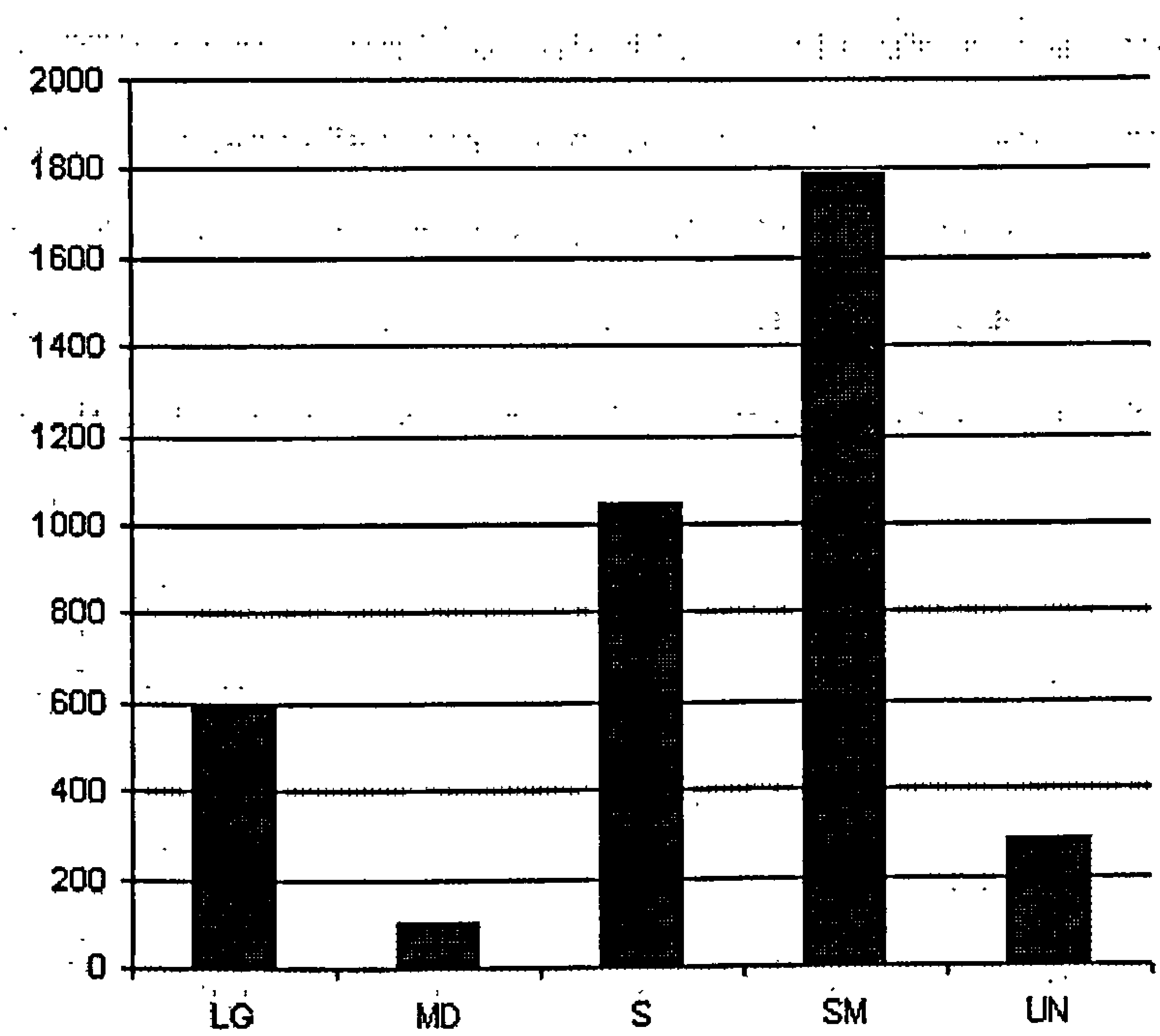


Figure 1.6 Number of scatters by size

Surface scatters with between 51 and 100 lithics (medium) are the least represented within the dataset. This may be a reflection of methodological frameworks commonly used when fieldwalking. Either a field is *extensively* walked, which may recover a small number of lithics, or it is *intensively* walked where a scatter exists, and so a large number of lithics will be collected. The middle ground is covered less. Hence, the proportion of large scatters is much higher, standing at around 600.

Steve Ford discusses the types of settlement patterning one may expect through various scatter sizes from his work at North Stoke and East Berkshire, where he found that during the Mesolithic, larger scatters were located on low-lying ground with smaller sites (having more specialised functions - see below) being situated on higher ground (Ford 1987, 67). It has been suggested elsewhere that the larger base-camps may represent accumulated material from recurrent activity (Rowley-Conwy 1983) Ford also found a riverine focus for Mesolithic activity (Ford 1987, 129).

Earlier Neolithic scatter evidence from Ford's study area tended to be more ephemeral in nature, which he interpreted as small and short-lived, although he did accept that their detection may have been camouflaged by larger Later Neolithic sites, and were therefore not detected through fieldwalking. The classification used within the database certainly favours a simple Neolithic, and in most cases it has been difficult to distinguish on a more definitive scale. Later Neolithic settlements are thought to show an expansion in size (Ford 1987; Bradley 1978).

It is difficult to see immediate patterns between size and period for the information within the database, without moving to a more localised setting. Chapter 8 considers the scatters as categorised within the database for a specific area in South Lanarkshire, and goes further in interpreting the information.

Material Association

This refers to any material culture associated with the lithic scatter. It has been taken that each scatter contains flint, and therefore other lithic material (chert, agate, quartz etc.) which may be present, is also described. The first three letters of any variable are taken: CER (ceramics); MET (metal); CHE (chert); PIT (pitchstone); BEA (bead). If flint is not present in the assemblage, this is usually noted in the *Class* field.

The highest proportion of material types associated with surface lithics can be seen to be stone, that is other forms of coarse stone and types of other than flaked lithics. Significant amounts of ceramics are noted, with metals, fauna and other materials (such as slag and glass) being present, but in small numbers. This information is important where contextual analysis may help define the type of scatter and what it represents.

Function

As an interpretation of the function of the site, this field is one of the hardest ones to complete. As Richards states in the 'Project Outline' (March 1995), the interpretation of sites is one of the prime aims of the entire project.

The categories of this field have been entered in the majority of cases by descriptions given by scatter finders and from the various sources of information. In some instances, the site function has been given by summing up the constituent parts of the scatter as described in the *class* field, although in most cases this is impossible as not enough information is given. Certainly where a large number of struck flakes, waste and core material make up the scatter, it would be a good assumption to say that knapping i.e. industrial activity (IND) took place. If the scatter is situated in close proximity to a funerary monument, it has been taken that the site has a ceremonial association (CER). Other categories which make up this field are as follows: DOM (domestic site - habitation or settlement); IND (industrial - flint knapping or exploitation site; CER (ceremonial - with a funerary context); SPE (task specific site - butchery); UN (unknown).

Usually a combination of functions has been given, especially for scatters which have a combination of industrial debris, large accumulations of pottery and other domestic material. In this instance DOM/ IND has been entered.

Function has been ascribed to scatters using various standards in the past, with microwear and ethnographic studies creating interpretations. There are many standardised entries for this field due to the presence of multiple options and mixed assemblage types. Around 2500 scatters have been entered as unknown - highlighting the difficulty in assessing these functional criteria to the material record, especially in the case of surface scatters, where no contextual information or related diagnostic material is present. Unless clear indications of a core reduction sequence (Schofield 1993) and its various stages are present, assigning a function will also be difficult.

The remaining scatters that have been distinguished cover a large number of functions. The majority of these are domestic, domestic and industrial, and industrial sites. These reflect the number of scatters which contain lithics such as scrapers and cutting implements (suggesting a domestic activity) and those which contain waste flakes and knapping debris (suggesting industrial working). Ford suggests that by considering assemblage composition, which he admits is a coarse measure, only three types of site are distinguishable

> 1. Quarrying as dominant function, represented by high proportions of 'waste' material.
> 2. Special function sites, represented by a high proportion of cutting flakes (NB actual functions unknown)
> 3. All other sites with a high proportion of ordinary domestic activity
>
> (1987, 68)

It can be seen that without contextual or associated information, it is difficult to assign functions to surface material. As Conolly states, "...there are severe limits to what can be done with surface derived artefacts." (Conolly 1996, 174). It is also a simplistic strategy to fit certain tool types into specific functional criteria. It is now accepted that the interpretation of material is dependent on the social, historical and cultural contexts of the artefact, and that these change through a whole array of circumstances (chapter four discusses this in more detail).

Integrity

This field refers to the definition of the site, where a clear archaeological boundary is present, the scatter is termed discrete (D), where it is divided by modern boundaries, and the edges of the assemblage cannot be made out, it is termed non-discrete (ND). Single finds have all been described as discrete, it is impossible to tell for other scatters unless specifically stated in the source reference. Unfortunately details such as this are seldom included in reports, which is interesting to note. This information is important in many respects, primarily as an indication to the concentration of the scatter and subsequently whether the spread of artefacts is growing through natural or agricultural damage. A discrete scatter may also indicate the position of sub-surface archaeology, depending on the nature of the site.

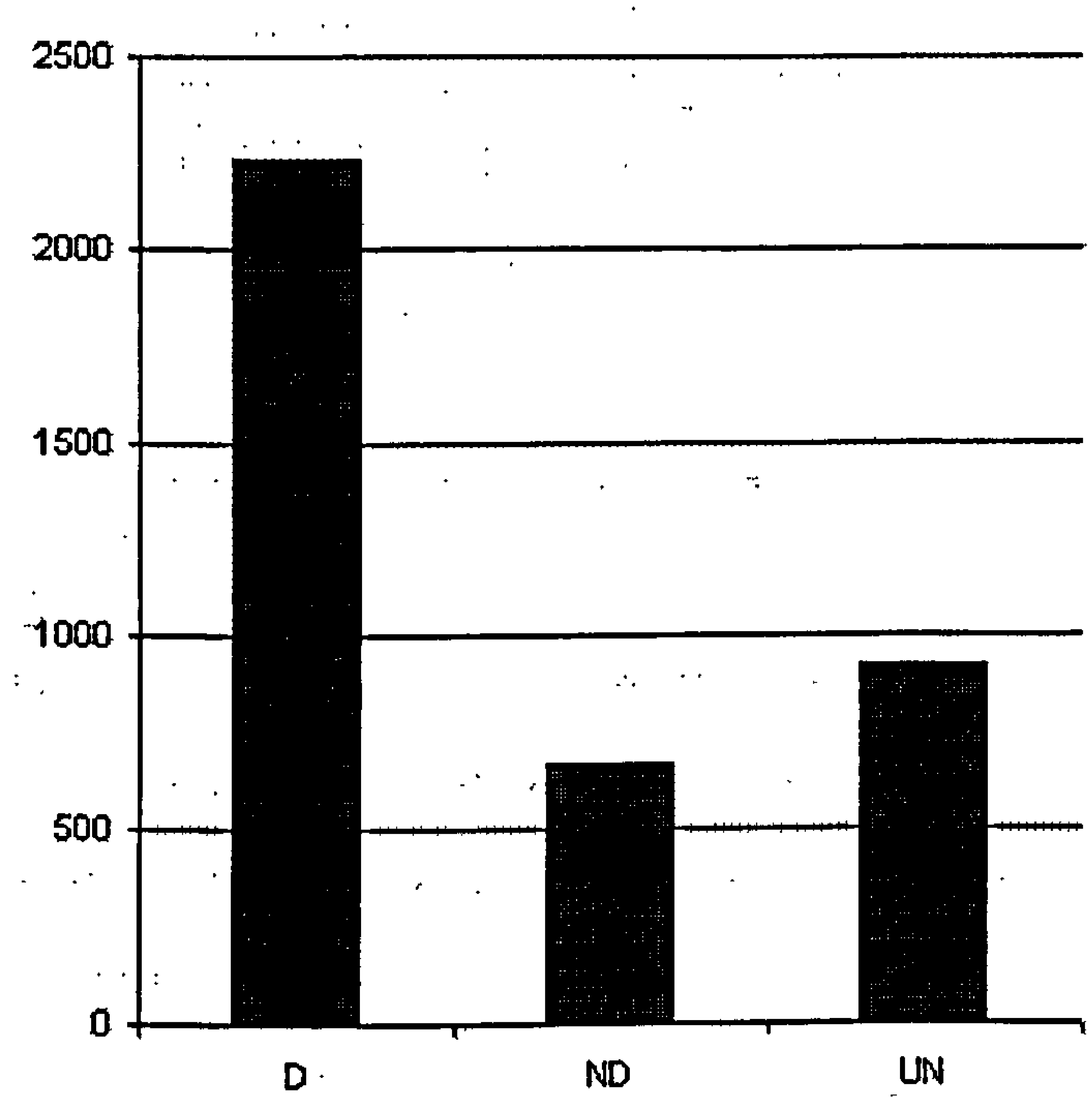


Figure 1.7 Integrity of scatters

According to figure 1.7, well over 2000 scatters are discrete, the largest proportion of which are represented by single finds (figure 1.8). This figure may be misleading however, as many scatters will have been recorded as 'discrete' when this may not necessarily be the case –

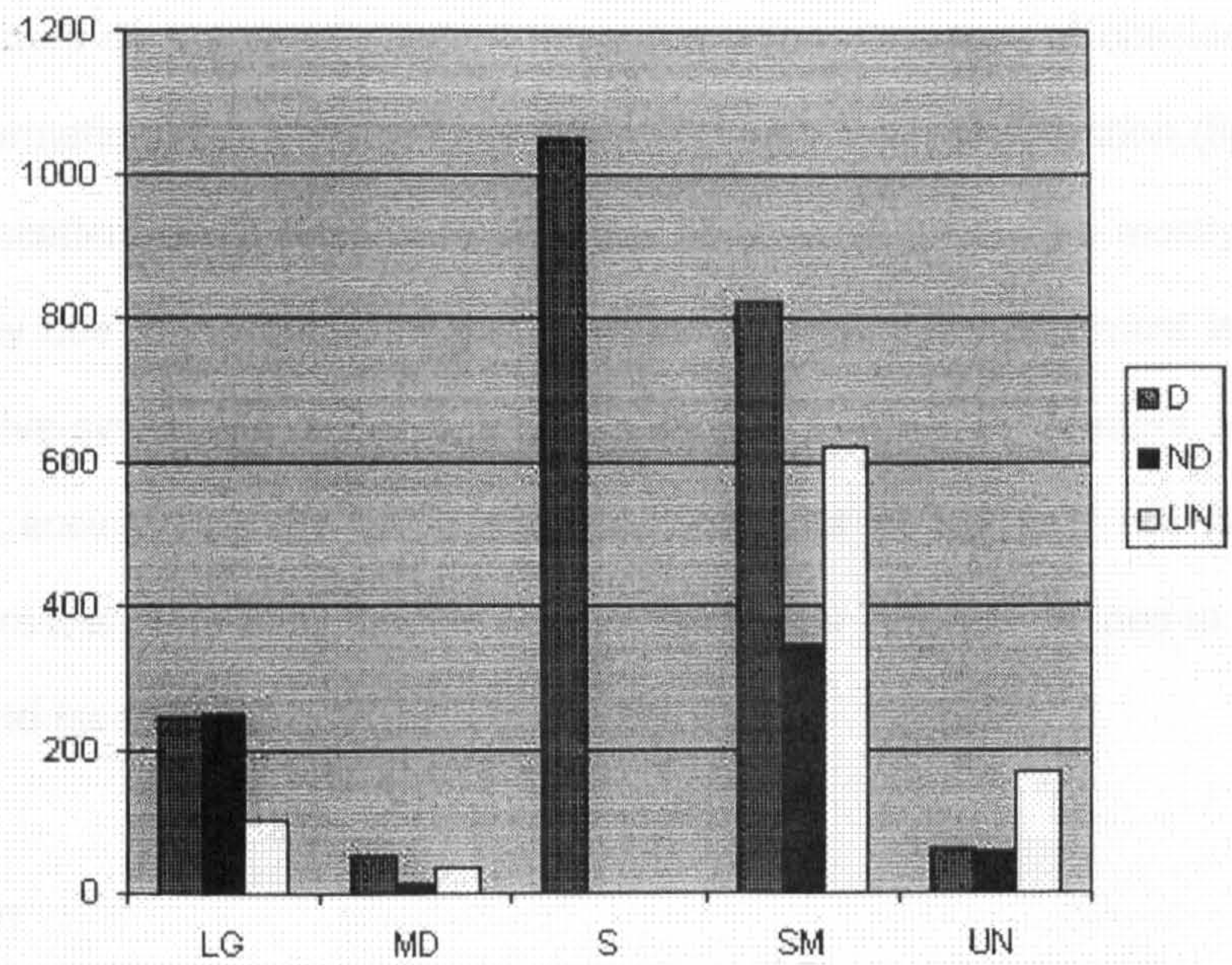


Figure 1.8 Integrity by size of scatter

many fields will be walked in isolation depending on the availability of ploughed fields in one area, and so a scatter may be recorded as discrete when in fact it extends outwith the boundaries of the field. Similarly, only part of a non-discrete scatter may have been isolated and described as discrete.

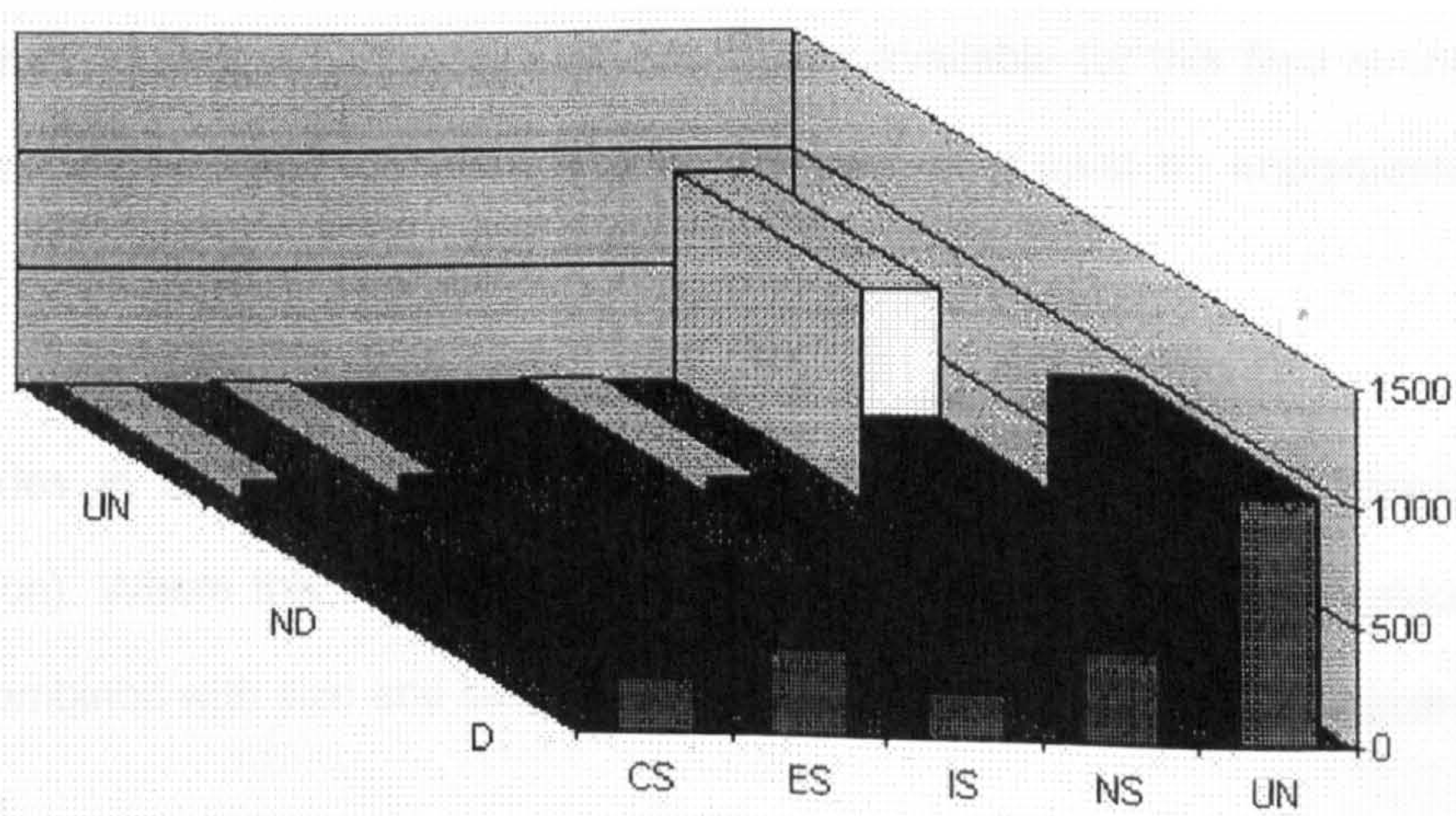


Figure 1.9 Integrity by scale of collection

Over 600 non-discrete scatters are represented in the dataset, with a very high proportion of unknowns - collectors do not usually record this information. One way of checking for the quality of this information is to cross reference this field with *scale of collection* (figure 1.9). As can be seen, scatters which have been collected non-systematically are mostly discrete, although obviously due to the nature of the collection strategy this assignment is not very accurate. Extensive-systematic surveys have a similar number of scatters which are discrete, a more accurate picture as a larger surface area of the field will have been surveyed, therefore it is more likely that the edge of the scatter could be defined to within the confines of the field (see below).

Scale of Collection

This is one of the most informative fields, but unfortunately the least information is available for it, as records seldom give an account of *how* the scatter was uncovered and recorded. Paradoxically, it is also one of the most important indications of site quality. If a site has been walked using a complete systematic survey (CS-with a complete collection of surface artefacts), then the assemblage information is bound to be substantial and a more accurate representation for interpretation of the archaeology, in comparison to a scatter which has been recorded in a less intensive fashion i.e. an extensive systematic survey (ES-collection units are greater than 15 m apart). The lack of information available for this field strongly suggests that a set of guidelines for future walking and recording must be implemented, which is one of the prime goals of the project.

The other categories in this field are NS (non-systematic collection) and IS (intensive systematic collection). Where this information is lacking, UN (unknown) has been entered. This information combined with size and integrity of the scatter gives a reasonable indication of its concentration.

Again there are a large number of unknowns within this set of data (approximately 2500). Many scatters have been assumed to be recovered through non-systematic walking and this can be seen in figure 1.10. The remaining three categories follow from the largest proportion - extensive systematic, complete systematic, and intensive systematic. It is difficult to explain why there are a low number of scatters walked intensively, while many scatters are completely surveyed apart from assigning these scatters to a specific research project which completely surveys all scatters. The relatively high number of extensively walked collections is easier to comprehend, assuming that most fields within a fieldwalking project will be given a consolatory survey.

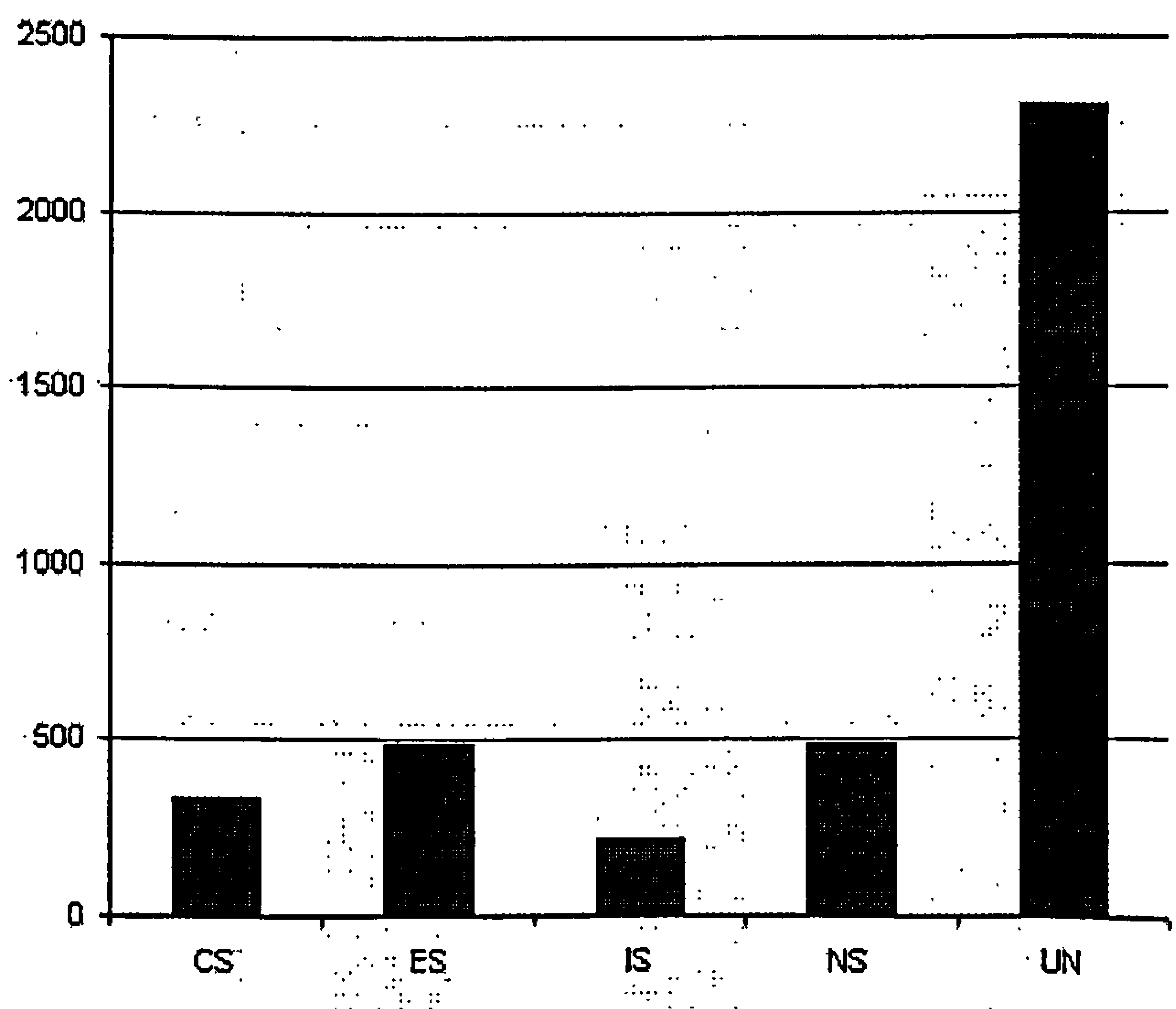


Figure 1.10 Number of scatters by scale of collection

This information is absolutely necessary when recording a scatter in the field, as it gives a good impression of the quality of the record, and the interpretive processes undertaken throughout the fieldwalking process. In this way the researcher in the future may be able to understand more fully the interpretations undertaken when creating the record of the scatter, and rather than having a single indistinguishable face behind each scatter, it may be possible to see several representing the whole fieldwalking team. This will be discussed in chapter 5.

Survival

A description of whether the scatter has been destroyed (D) through development or excavation, or whether it survives (S) (Figure 1.11). This information is not usually given in source literature, unless the survey was done in advance of development such as forestry planting. Otherwise 'unknown' (UN) has been entered. In some cases, it is possible to see where a scatter has been destroyed through modern development by referring to recent OS maps. This field is of obvious importance as an indication to whether future investigation of the archaeology is worthwhile, and as an indication of the previous existence of scatter locations.

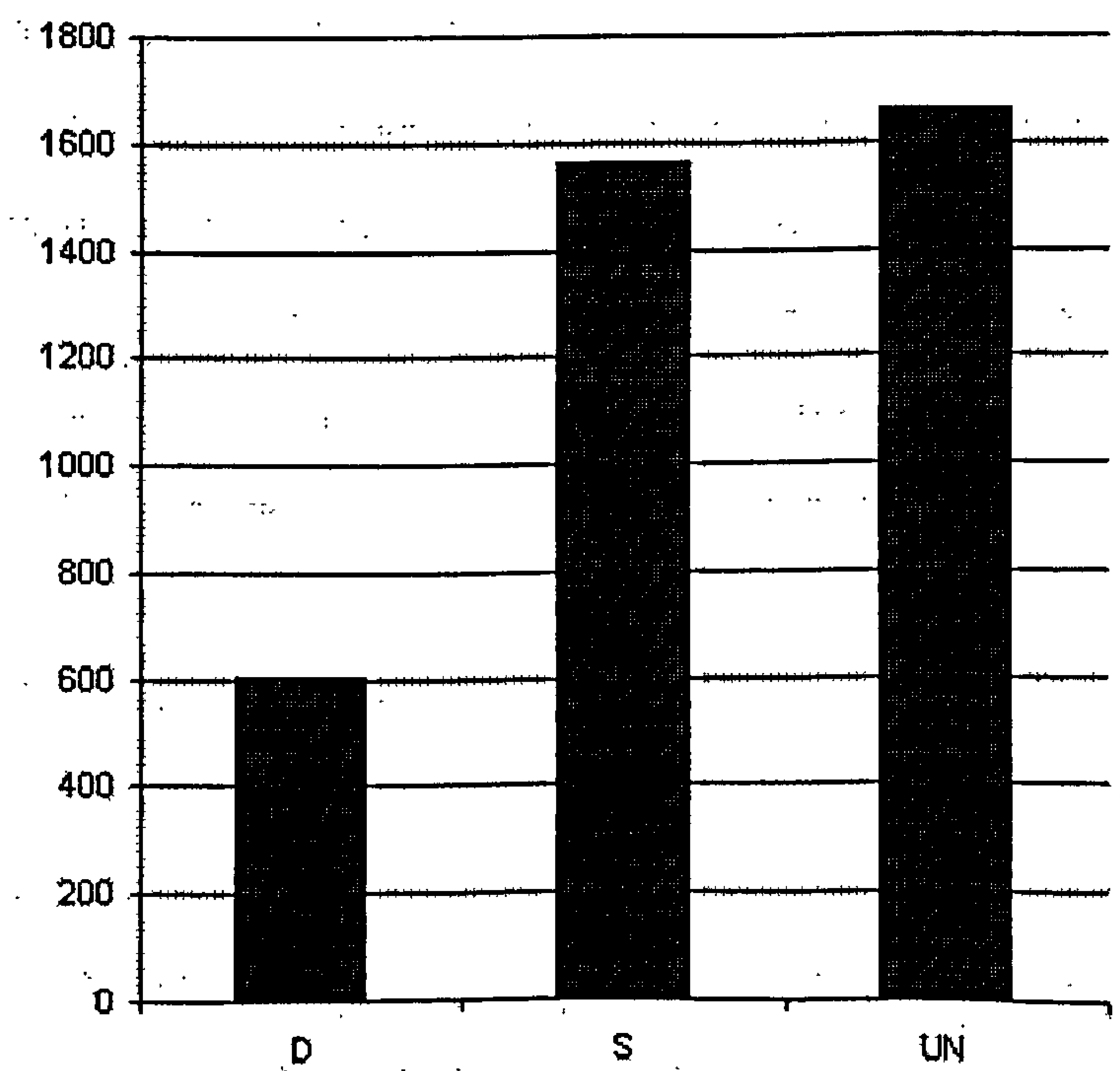


Figure 1.11 Survival of scatters

Unfortunately there is a large occurrence of unknown entries for this criteria. It is difficult to know whether any remaining lithics are present at the location of the recorded surface collection, especially in the case of scatters, which were collected and recorded many years ago.

Out of the remainder however, there are over twice as many occurrences of scatters that survive than which are destroyed. This presumably reflects the small amount of arable land which has been developed recently, although the information contained in this field was compiled by reference to recent Ordnance Survey maps, and therefore may not be fully comprehensive in terms of locating new development.

Associated Sites

This is included to discern those scatters which may be related to nearby contemporary sites, therefore increasing the size of the archaeological resource. The categories are: NS (no contemporary monuments or excavated sites known to exist within 5 km; OC (one contemporary monument and/ or excavated site known to exist within 500 m; SC (more than one contemporary monument and/ or excavated site known to exist within 500 m; OD (one contemporary monument and/ or excavated site known to exist within 8 km; and SD (more than one contemporary monument and/ or excavated site known to exist within 8 km).

This information has been added by referring to OS maps (1:50 000 scale), which have *major* upstanding archaeological monuments marked, but lack excavated sites and minor monuments. It will be necessary to refer to more detailed information on all the archaeological sites and monuments to gain a more accurate record for this field. This may be possible in the future when the database is combined with a combination of GIS software and the National Monuments Record.

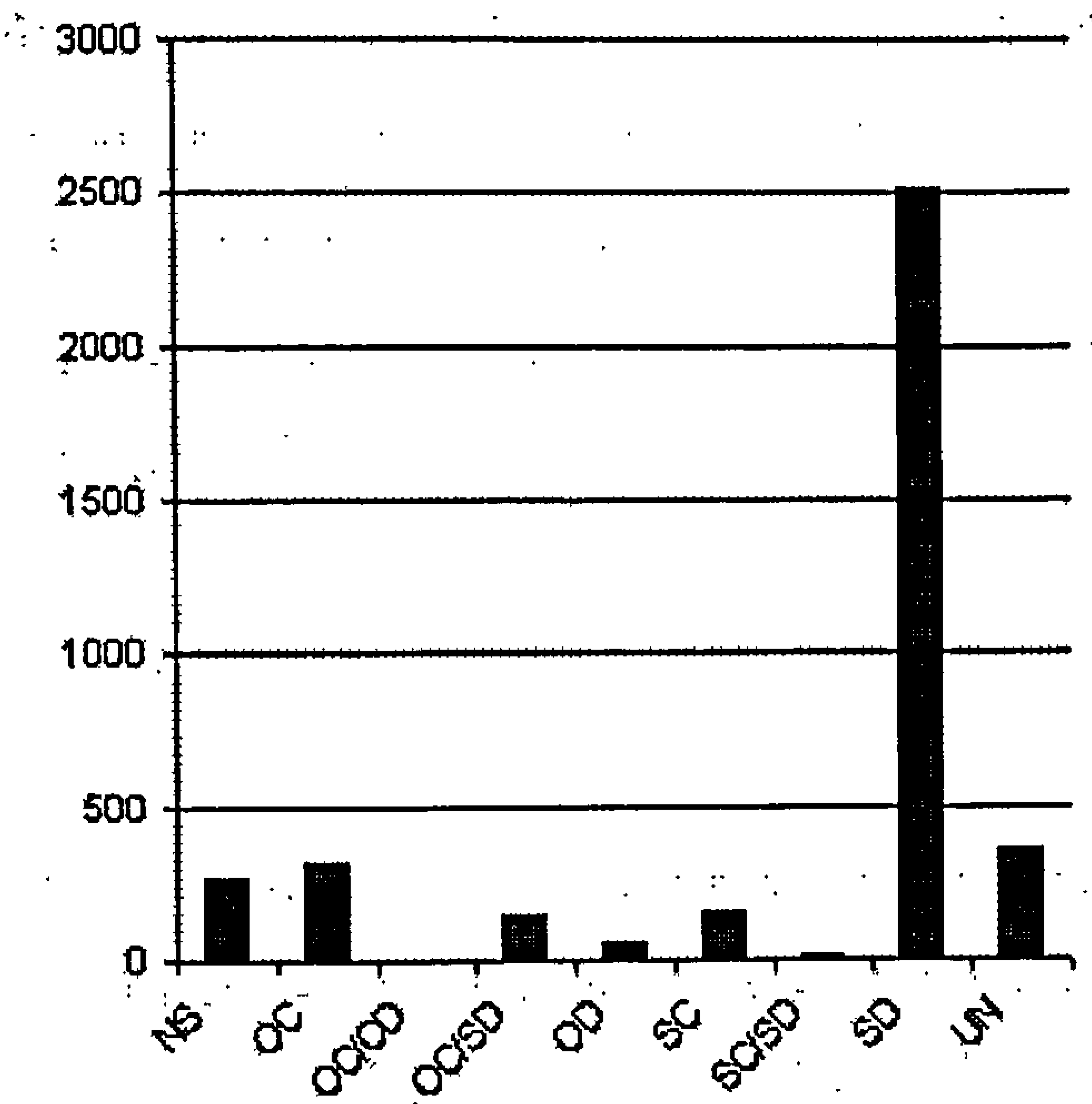


Figure 1.12 Associated sites for scatters

In some cases it is difficult to interpret the period of the scatter, and therefore tricky to gauge whether any nearby monuments are contemporary or not. If there are any archaeological features which appear to relate to the scatter, then these have been taken to be contemporary. In South and Central Scotland, there are many areas which have a high density of sites and monuments. Scatters found within these areas are therefore almost always marked with SD (several distant) for this field (figure 1.12).

The highest percentage of scatters have more than one contemporary monument and/ or excavated site known to exist within 8 km. This leads to the conclusion that there are a large number of upstanding monuments and/ or excavated sites spread throughout Scotland at a similar density to the scatters. In many cases these may not be contemporary monuments however.

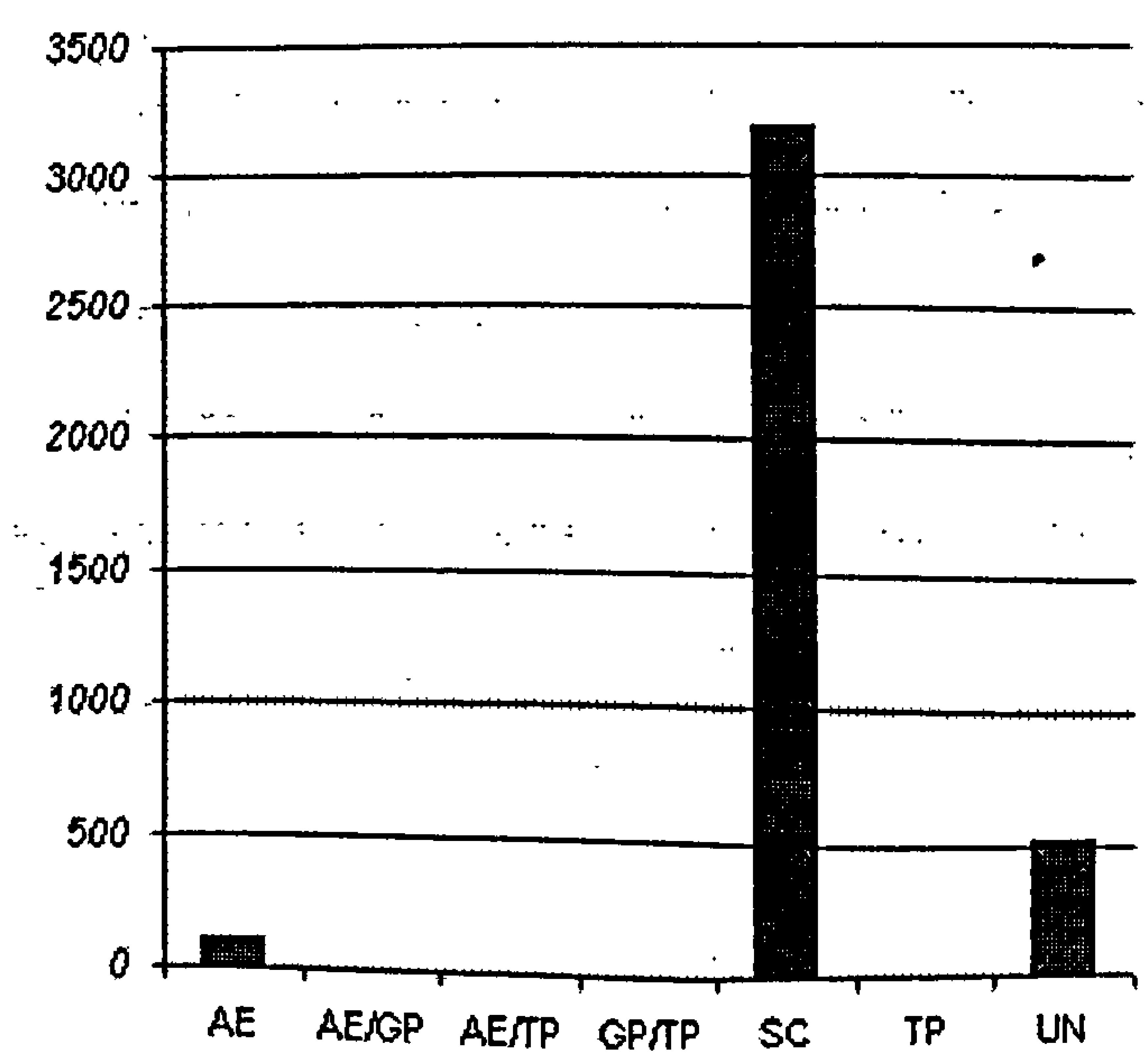
Several scatters (over 300) are situated close to a contemporary monument and/ or excavated site, which is interesting to note as this may suggest areas which are rich in archaeological remains - regional analysis (below) will discuss these areas in more detail. The next highest proportion of scatters falls into the category of SC, which is 'more than one contemporary monument and/ or excavated site known to exist within 500 m', of which approximately 150 scatters are positioned. Again this corresponds to the above statements. It must also be noted that over 250 sites fall outwith 5 km of any upstanding monuments or excavated sites (NS).

Additional Archaeological Investigation

This refers to the amount of additional archaeological work which has been carried out on the scatter site, again increasing the breadth of information related to this. The variables are: SC (no additional work beyond surface collection); GP (geophysical or geochemical survey of the scatter); TP (test pit investigation); and AE (area excavation).

In most cases there has not been any further work carried out on the scatter, although this is not necessarily obvious unless a more in depth study of the NMR and other reference material is undertaken. Again, this information will be more apparent when the database is subsumed within the NMR. It has been assumed that no other work has been undertaken

Figure 1.13
Number of scatters by additional archaeological investigation



unless specified in the source material.

The majority of surface scatters are not investigated any further beyond their discovery through fieldwalking. The most common outcome of scatter discovery is excavation. Only recently has work been undertaken over scatter sites across south and central Scotland (figure 1.13), and this is an indication of the previous unknown quantity and pessimistic response to scatters. In some cases scatters lie over sub-surface archaeology and excavation has been successful, in others nothing is revealed.

Clustering

This field makes the quantity of lithic scatters data in any small area immediate. This takes into account areas which have been walked as part of a 'landscape survey' or an area covered by local collectors and/ or amateur groups. It also accounts for series of unrelated discoveries through time. The area defined by the survey region has a radius of 8 km from the scatter. As above, there are areas in South and Central Scotland which have a high density of scatters, and so OS (other sites found by fieldwalking within the area) is the most common entry. NS (no other sites found by fieldwalking within the area) is the other category for this field.

Almost all the scatters for which this information was available have other surface collections or isolated finds within 8 km. In arable areas this encompasses a reasonably wide tract of land, and there is much clustering of sites across the whole of the country, especially within the larger agricultural regions. The only areas where scatters are likely to be isolated are in areas of moorland or upland areas where not much work has been undertaken and finds are discovered through serendipity.

Height

Height of the scatter, taken in most cases to the nearest 10 m, unless an exact height is indicated from the information source. As the height is seldom given in fieldwalking reports, this field had been completed by referring to contour lines marked on OS maps (1:50 000 scale). This information may also be gained by GIS.

The height of the scatter can give immediate information concerning its elevated location and therefore aid any interpretations about the function and use of the specific site, especially in a localised setting when upland and lowland distributions can be compared. This field has been analysed in detail to more effect in the local case study described in chapters 8 and 9.

Aspect

The topographical aspect of the scatter, again completed by referring to maps of the region. This information, when combined with the *Height* field, will give a good indication to the scatters position in the landscape, whether it be a lowland or highland site, its proximity to water, or on a coastal, riverine or moorland locality. This helps to characterise the site in future research.

Environmental Association

Representing the level of knowledge of the contemporary landscape, including pollen analysis, molluscan analysis and soils analysis, this information is seldom given in fieldwalking reports due to a lack of previous work in this field. It is usually obvious where environmental sampling has been carried out as these strategies are recorded in the fieldwalking reports, but this intensity of survey usually only happens as part of a larger project. All the sites which are included in the Environmental Archaeology Bibliography (Hall

1996) were consulted and subsumed. It must be noted that there is a gap in this resource, one which is hopefully being filled by present environmental research.

The categories are: NE (no environmental evidence within 500 m); and EE (environmental evidence within 500m).

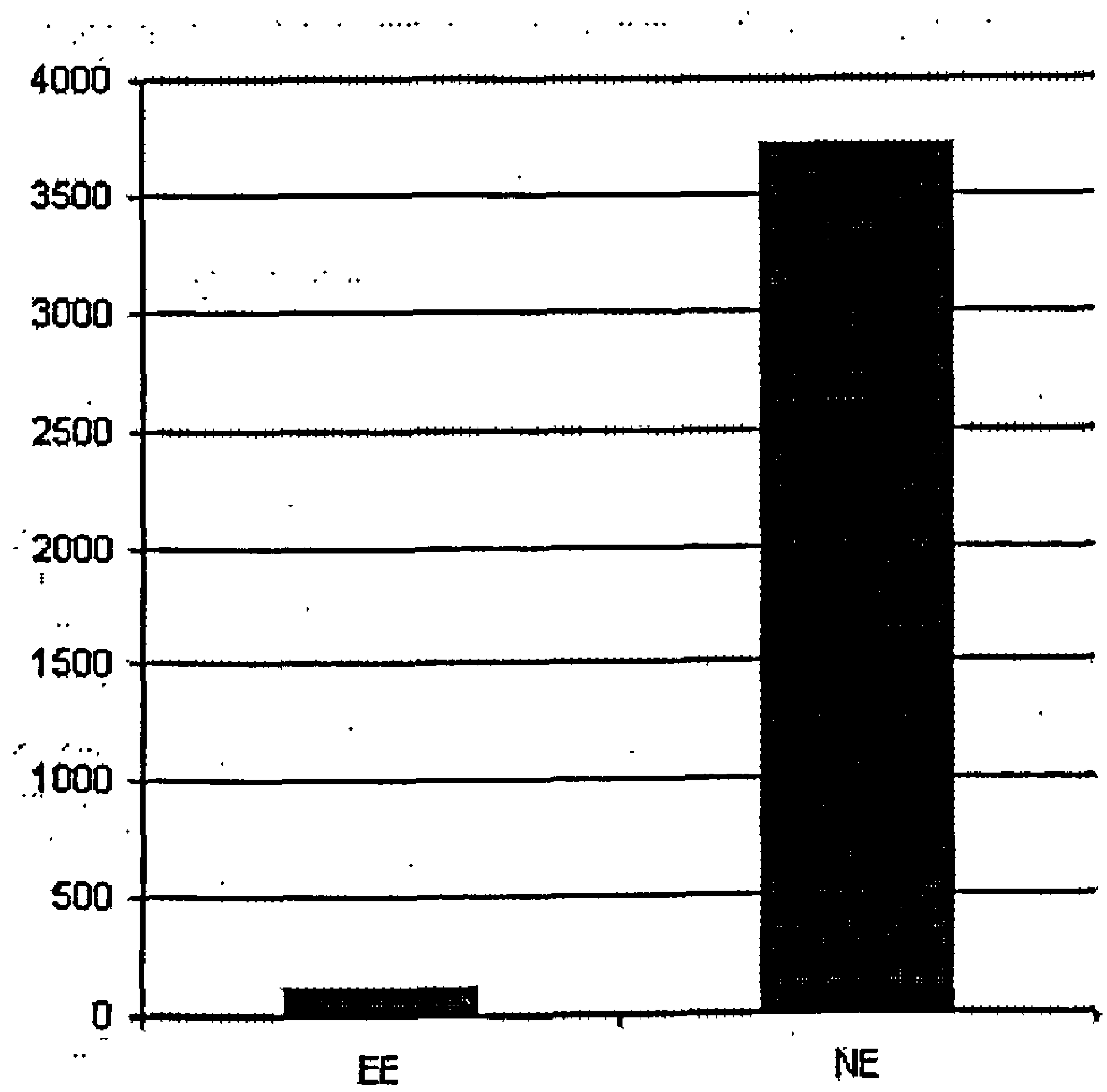


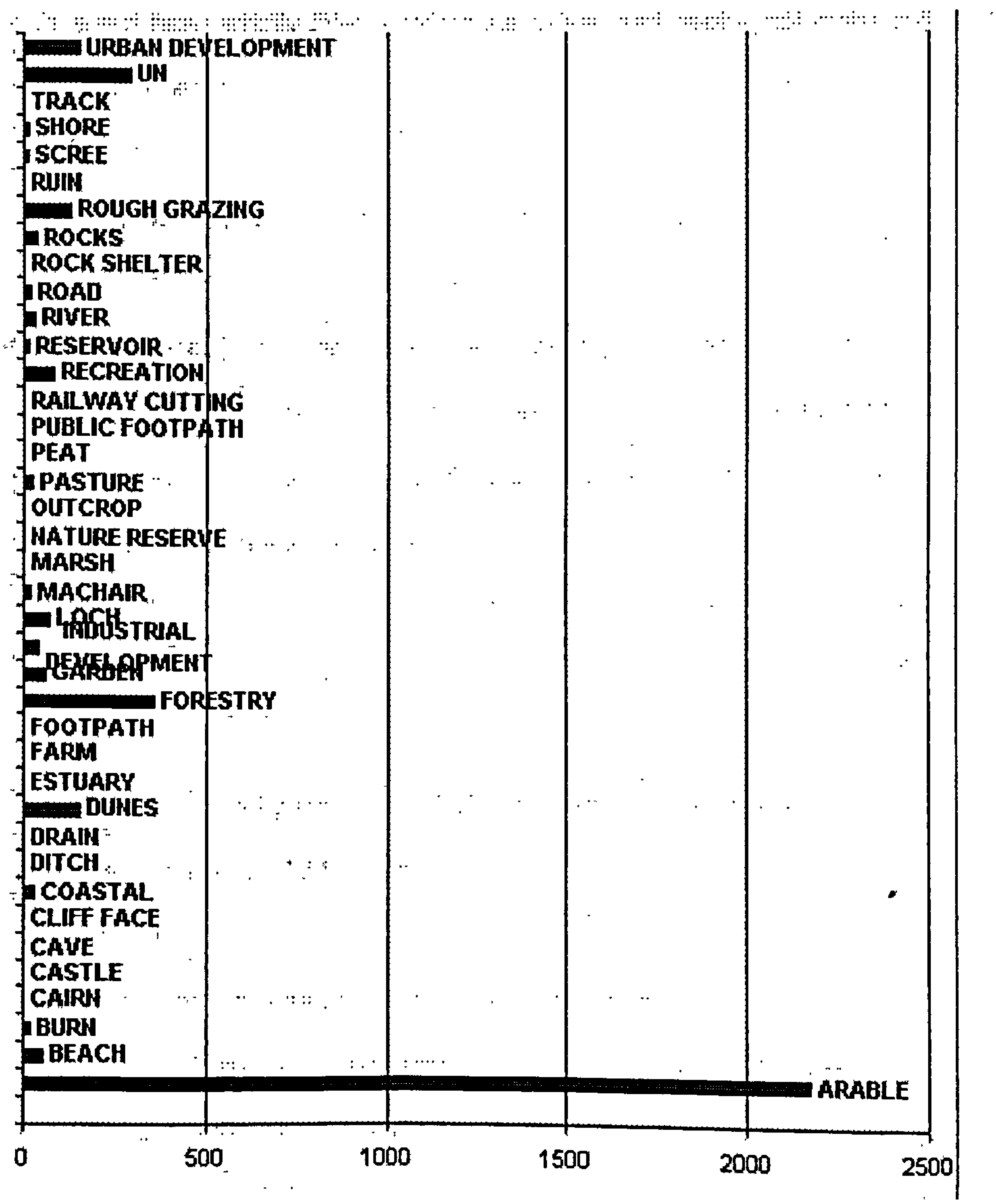
Figure 1.14 Number of scatters by environmental work

The chart in figure 1.14 tells an immediate story - that there is little environmental work which has been done in relation to surface scatters. This data has been taken from the Archaeobotanical Computer Database (York University) and is not completely up to date, so there may be more work from recent large scale fieldwalking and landscape surveys, which is not yet entered.

Modern Land use

This information has also been taken primarily from OS maps, and suggests the state of the scatter at present (figure 1.15). Arable is by far the highest category, as most scatters are recovered from ploughed fields. It is surprising that development is higher than forestry, as there are vast tracts of upland Scotland planted with commercial forestry. This can be explained however when the lack of recording over these upland areas is realised, especially during the 1970s when the majority of the present day forest cover was planted. Chapter two will intimate these various land-uses and the effects they have on lithic scatters.

Figure 1.15 Number of scatters by land use



Soil Type/ Underlying Geology

These fields have been added on the basis of information received from work done in Islay by Mithen, where these specific values have been collected by the Southern Hebrides Mesolithic Project. The relationship of lithic scatters to variations in soil type and geological formation can be gained from this information, especially where erosion and modern agricultural practices are affecting the archaeological resource.

These fields have not been wholly filled - reference to soil and geological maps will 'fill the gaps', if this proves necessary.

Notes

This is purely an extrapolation of the *Source* field, giving information on where reference material is available for the scatter. This field was added after several months of data entry and so is not completed in its fullest form. It also contains information which cannot be included into any other fields, basic miscellany.

Report

This field has been taken directly from the NMR database, and has been included for extra information, relating purely to the NMR entries.

All fields described contain information manipulated to some degree by the authors. The database is not, nor ever will be, a complete and closed dataset. The only way such a construct will work is if it remains open to criticism, change and adaptation. As scatters are destroyed, added to and adapted, new information must be subsumed, and old data manipulated. This thesis is based on accounts from the database as it stands now. In ten years it will (hopefully) be out-of-date, as new scatters are found and recorded.

Conclusion

The compilation of the Scottish lithic scatters database was a necessary procedure as the situation concerning an invaluable archaeological resource was previously unknown. Lithic scatters were hardly ever part of a research agenda in Scotland, primarily due to this lack of knowledge concerning the magnitude of the resource. Little fieldwalking had been undertaken in Scotland compared to England, and where practiced, little was made of the collected information, save a cursory catalogue and a box full of flints deposited either in a local museum, or on top of someone's wardrobe. The pulling together of as much information as possible from all the museums, local societies and collectors was an immediate concern.

Through the process of creating the database and filling the fields with 'data', it became obvious that the information was being unavoidably manipulated to suit the criteria of the research project. No objective truth would be possible from such a tool, only accounts of subjective experience and reasoning. However, with the final production, it was also seen that much information had been gained concerning the sources and records of all the lithic scatters, and that analysis of this could go far in reflecting modern day patterns of collection. To those undertaking the project, faces were evident behind the scatters, albeit not necessarily prehistoric ones. Through an analysis of the creation of these scatters in more recent times (chapters 2 and 3), the processes at work behind the formation of the data can be charted and understood.

It has been shown that a large amount of valuable information is contained within the database, opening up many possibilities to start tackling the aims and objectives of the project as described above. It is also possible to see the potential of this information as a tool from which interpretation of past prehistoric activity can be drawn, as long as it is understood properly. To do this, we must look at the information much closer.

The scatters recorded within the database have been influenced by a variety of factors, where practices such as agriculture and forestry have an impact on the landscape and expose specific areas. Collection of lithics throughout history is also an important part of the formation of the scatter *record*. These histories must be considered before any further analysis of the database is given, to provide the reader an opportunity to understand the processes at work behind lithic scatter creation, and consequently how the information contained within the database can be utilised to understand a social history of flint working throughout prehistory.

The following chapter will describe the physical processes at work behind the creation of lithic scatters across south and central Scotland. From these processes, it is possible to see that there are people behind the scatters, working on, living in and understanding a landscape covered in material residues of the past. Their actions shape the resource, influencing the way we perceive prehistoric activity from these remains.

Chapter two

The creation of the surface lithic scatters resource

Soil

A field with tall hedges and a young
Moon in the branches and one star
Declining westward set the scene
Where he works slowly astride the rows
Of red mangolds and green swedes
Plying mechanically his cold blade.

This is his world, the hedge defines
The mind's limits; only the sky
Is boundless, and he never looks up;
His gaze is deep in the dark soil, As are his feet. The soil is all;
His hands fondle it, and his bones
Are formed out of it with the swedes.
And if sometimes the knife errs,
Burying itself in his shocked flesh,
Then out of the wound the blood seeps home
To the warm soil from which it came.

Thomas b.1913.

Introduction

The creation of scatters through mechanical manipulation of subsurface archaeological deposits is an important process, as it is through considering these processes that we may understand more fully the formation of the scatter record and the situation of the resource across south and central Scotland. Interpretations of past activities cannot be considered without first examining the processes which produced the evidence in the first place. It has been made clear from describing the contents of the database, that the formation of the scatters has heavily influenced the form the scatters take within the database.

The study of the formation processes allows a unique insight into the diverse influences governing the shape of the scatter resource. From the farmer ploughing his field, to the urban development of the Central Belt, the lives and understandings that people have of their locale has a direct affect on the pattern of the archaeological remains surviving there. This understanding goes all the way back into prehistory, as scatters would have become exposed as surface material through time. These relationships are distinctly relevant to the processes occurring throughout prehistory.

Ploughing has an adverse effect on sub-surface archaeology in certain circumstances, and it is shown that lithic evidence fits in with the areas of most intensive agriculture. A brief history of arable ploughing is outlined to show how socio-economic factors throughout history have influenced the way agriculture has shaped the landscape, and consequently the lithic evidence; scatters are an indication of land-use as well as prehistoric activity.

Lithic scatter records are less common from forested areas, and so it is harder to see the influence upland ploughing has had on forming lithic scatters. However, the threat of forestry ploughing and the bias created in the records due to lack of adequate recording is discussed as a major issue needing clarification. An analogy is given to the power and significance of forests throughout prehistory, ironically reiterated through the forestation of our landscape today which has little concern for archaeology.

The creation of scatters through erosion is also discussed and is seen as a major priority due to its unpredictability. Although lithics have been recorded and are continually found from a wider selection of eroded areas, specifically river banks and footpaths, the instances in which this occurs are fewer than by coastal erosion, which is discussed. Finally, industrial and urban development are considered as part of lithic scatter creation, although in the majority of cases, scatters are completely destroyed.

It is the practice of manipulating the earth, either by ploughing, development or erosion, which is inextricably linked to lithic scatter formation. The existence and frequency of lithic scatters across south and central Scotland is not necessarily a result of prehistoric activity, but of the processes which make these visible.

Ultimately, the process of collection and recording by fieldwalking is related to the formation of the lithic scatters resource. We shall also see that the methodologies prescribed to, and the experience of the fieldwalkers' themselves, influences final records created.

Creation of scatters

There are many ways in which scatters are 'mechanically' created. Figure 1.15 in the previous chapter gave a breakdown of the most common situations where scatters have been recorded for south and central Scotland. These land-use types change frequently, as pasture is ploughed, or forests are planted. Development transforms arable land, especially around the edges of urban areas. The graph indicates the situation of the land at the time of the scatters discovery and recording. It is from this information that the following discussion derives.

It is important to understand that the surface scatters existing across south and central Scotland in recent times have been created with more aggressive machinery than was available earlier this century, and throughout prehistory and history. The result of modern agriculture and mechanisation is the most *recent* adaptation of the scatters, previous forms are erased with each subsequent ploughing. A history of these processes is therefore part of the life of the scatter cycle. The scatter record, which is catalogued within the database, shows when and how scatters were created at certain points in time, the collection of them being as important as the mechanical creation.

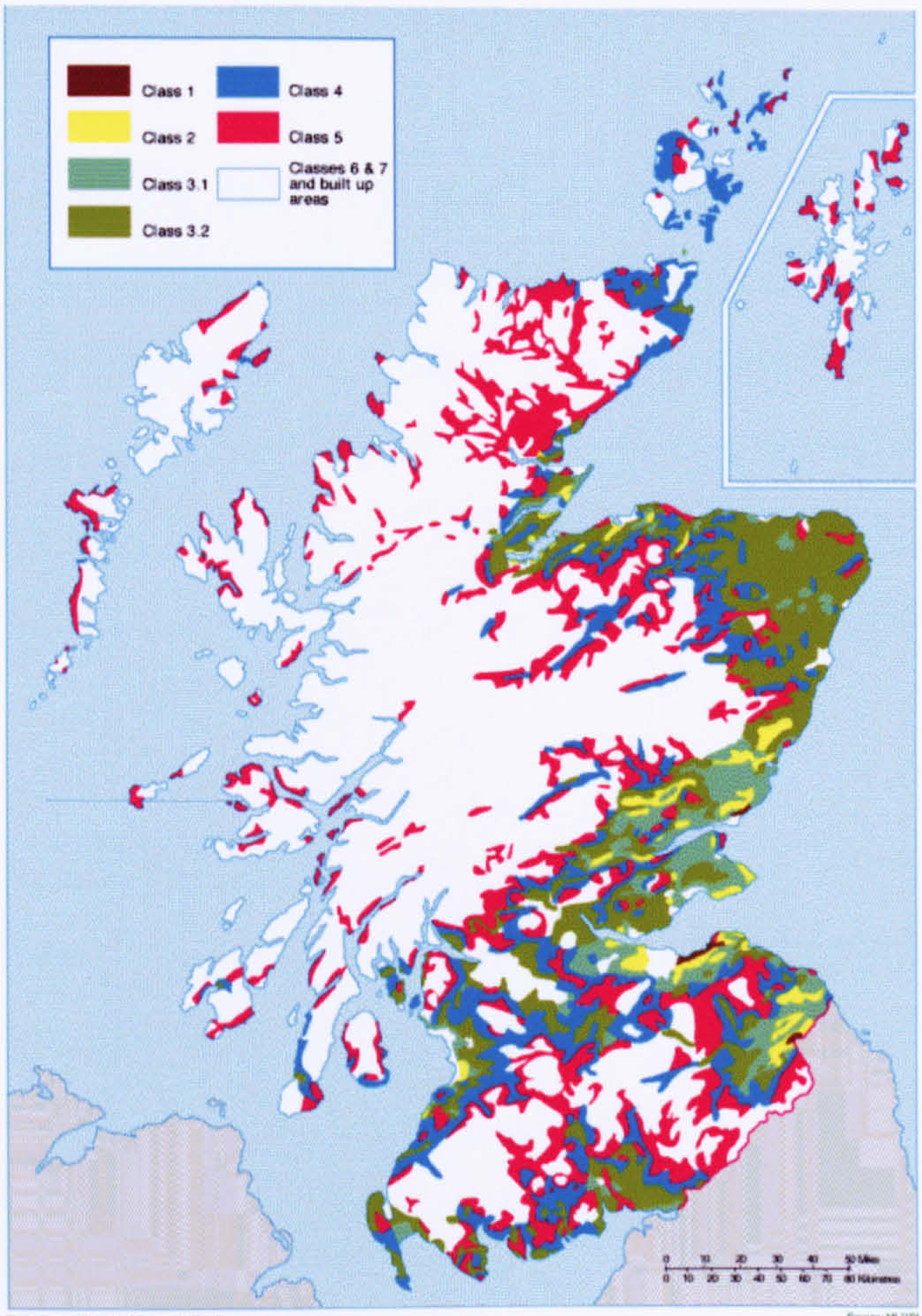
Any activity which has involved digging into the ground and turning the earth, exposing previously hidden layers, will possibly result in a surface scatter. This is just as likely to have occurred throughout prehistory as it has in the recent past and today.

Whether the lithic material was recognised or not may have determined the subsequent actions imposed on it and the space which it defined - the exposure of unrecognisable lithics may have had a very powerful effect on the agent(s) doing the ploughing, particularly in prehistory. Although the form of working visible on the exposed lithics may have been long forgotten, lithic working may still have been an active routine within the daily life of the discoverer. In this sense, unrecognisable styles may have imbued significance to various locales of tasks. Newly exposed scatters may have formed significant places within the landscape. The continual exposure of scatters on a seasonal basis through ploughing or reworking specific areas such as ditches within enclosures (see Edmonds 1999) will have reinforced and perpetuated the significance of that locale to the people working the land. They may even have become appropriated and marked by more monumental structures as a result of this scatter creation (discussed in chapter 9).

Likewise, areas of coastline which are affected by erosion would have revealed buried artefacts to contemporary inhabitants. Much significance may have been given to areas where new scattered material appeared, especially if after stormy weather and rough seas.
By looking at more recent exposures of scatter material, and the discovery and collection of this material, we not only understand the contents of the lithic scatters database more fully, we also gain an understanding of the processes at work throughout prehistory.

The practice of agriculture

Figure 2.1 Areas of various land capability for Scotland (reproduced from Scottish Office 1998).



The largest proportion of scatters reside in the most fertile areas of Scotland (classes 1-3.2; figure 2.1 of these areas). Areas where subsoil is manipulated by various means are obviously the most threat to sub-surface archaeological deposits (Barclay 1998a, 21; Barclay 1998b, 129; Hinchcliffe & Schadla-Hall 1980), and contain the highest percentage of scatter sites. Where soils are thinner, in many cases due to the erosion of hill slopes (Allen 1991), scatters will be created through *normal* ploughing rather than deep ploughing.

A recent study by Boismier describes the effects modern agricultural equipment has on surface scatters (1997). He undertakes a review of the agricultural engineering literature to provide a characterisation of the operation of tillage processes (1997, 10). Tillage is one of provide a characterisation of the operation of tillage processes (1997, 10). Tillage is one of the fundamental practices in the management of arable crop production systems. Farmers balance a number of variables throughout the system, and they tend to "adapt their regimes according to local environmental conditions, personal experience and external economic factors such as market prices and government policies" (ibid. 10).

Desired seedbed conditions are achieved through two phases of tillage, primary and secondary operations. Primary operations entail the initial ploughing of a field, to reduce soil strength and bury previous crops and weeds. 'Chisel plough' cultivation, mouldboard ploughs, disc ploughs and sub-soilers are usually used (ibid. 11). Secondary operations, create a 'refined seedbed' in preparation for sowing and weed control. Harrows, rollers and inter-row hoes are used in seedbed preparation. Ploughing occurs twice a year, as Boismier succinctly describes

> Seedbed preparation for winter crop varieties generally needs to be completed by late autumn, leaving little flexibility in the timing of tillage operations between the harvesting of one crop and the sowing of the next. In contrast, seedbed preparation for spring-sown crop varieties need not be completed until early spring, with much more flexibility in the timing of tillage operations. Primary tillage, for example, is often undertaken during the preceding autumn to leave the soil open to weathering throughout the winter with secondary tillage carried out in the early spring as soon as the moisture content of the soil falls below its seasonal saturation point.
>
> Boismier 1997, 11.

Boismier is concerned with the effects various forms of tillage have on the overall distribution of surface artefacts; he examines in detail the physical manipulation that various forms of tillage implements have on the soil, and consequently on surface artefacts (ibid. 12-19). Patterns of soil manipulation produced by tillage tools are complex in operation, and "include both load-bearing and loosening processes such as cutting, disintegration, rearrangement, and inversion" (ibid. 12).

Objects are moved horizontally and vertically as a direct result of these processes. Boismier summarised the work of several agricultural engineering studies, which examined patterns of object movement (ibid. 17 for references). He saw the limitations for showing long-term spatial change of archaeological deposits inherent in these studies, as they concentrated on short-term object displacement.

Amongst his conclusions, he produced a plan of scatter formation over time:

> It is possible to distinguish three general states or transformations in the integrity of surface pattern characteristics which have the potential to be recognised in archaeological ploughzone occurrences: initial, intermediate, and terminal. Each state is defined on the basis of a set of criteria reflecting the relative changes occurring in surface assemblage composition and spatial configuration over time. No single element of these criteria is wholly diagnostic of any particular state due to the dynamic character of tillage-induced pattern formation. Rather it is the varying combinations of the different variables used as criteria which allow for an assessment of the potential degree of tillage-induced disturbance represented in the arrangements of surface artefacts.
>
> ibid. 239.

He classifies the stages as such: the *initial stage* of scatter formation has a high to moderate surface density with discrete boundaries and no topographic association or orientation; the *intermediate stage* has a circular or subcircular shape with moderate to low surface density, fuzzy boundaries and partial association with topographic features and increased orientation in slope direction; finally, the *terminal stage* is circular or oval in shape, with diffuse boundaries and complete or nearly complete orientation and topographic associations (ibid. 241).

Although these are very generalised categories, they are useful if used with caution, for understanding the changing surface morphology of scatters through time. Problems can be encountered however, when interpreting scatter morphologies using these distinct variables. For instance, what looks like a *large terminal scatter*, circular or oval in shape, with diffuse boundaries and oriented to a slope or linear feature (i.e. field boundary), may indeed be a number of smaller scatters which, over time, have merged.

This theory was tested during the Lithic Scatters Project, and the results are discussed for two scatters in chapters 6 and 8. In the latter, a scatter of terminal state is walked, the conclusions drawn show that sub-surface archaeological remains probably don't exist, although this was not tested through excavation. Chapter 8 however, describes further work undertaken over a scatter which had more discrete concentrations. The resulting test-pitting revealed intact sub-surface remains.

Awareness of the damage incurred to archaeology through ploughing is not new. Hinchliffe states "...cultivation represents in quantitative terms at least, the greatest threat to archaeological sites" (1980, 11). In the same paper, three stages of destruction are considered as a result of deep ploughing

> Stage (i) Survival of levels contemporary with the occupation .....floor, rubbish accumulations, etc.
>
> Stage (ii) Survival of structural evidence only....post-holes, sill-beams, wall foundations, etc.
>
> Stage (iii) Survival only of deep features associated with the occupation ....pits, ditches, etc.

In this case a rural occupation site is considered (Hinchcliffe 1980,13). These three stages of site destruction càn be linked to Boismier's three stages of scatter formation. As a site is ploughed more and to a greater depth, the sub surface archaeology is slowly destroyed, while the scatter created becomes disparate and less discrete.

The character and extent of the threat to the archaeological resource is outlined by Lambrick:

> In order of diminishing severity the level of threat may be classified as follows:
>
> 1 The cultivation of previously unploughed sites.
>
> 2 The deeper cultivation of sites on existing arable.
>
> 3 The effective deepening of cultivation as a result of erosion.
>
> 4 Damage to artefacts within the plough soil.
>
> 1980, 18-21.

Soil erosion and displacement may lead to areas of deeper topsoil, so hiding certain parts of a scatter and giving false concentrations of material. Erosion of agricultural land and the thinning of the topsoil is a realistic factor concerning the environment, especially in areas of arable land where intensive farming techniques, combined with chemical fertilisers, are used. Foley considers these processes (Foley 1981) and describes how information given by the prehistoric material record "flows through" many variables, some of which are created by post-depositional processes (1981, 166).

The depth of the topsoil can effect the amount of surface lithics due to ratios of surface area to sediment volume (Foley 1981, 178; Wandsnider & Camilli 1992): a landscape with high surface area to sediment volume will have a low archaeological visibility; while one with a low surface area to sediment volume ration will have a higher archaeological visibility. Allen reiterates this theory, and stresses that " the number of artefacts on the surface at any one time is dependent upon artefact density and not total number of artefacts" (Allen 1991, 45).

Types of agricultural equipment will also distort the amount of information available. A deep plough which has brought the subsoil to the surface, especially over thin topsoil, will affect the information available on the surface. De-stoning machines, used in parts of Scotland where root crops are planted, tend to sort the stones within the ploughsoil while ploughing, extracting the stones from the soil and either dumping them in lines along the furrows, or removing them altogether from the field (Ruth Brown pers comm.). This produces a stone-free soil which avoids potatoes or carrots being bruised when cropping, but has disastrous effects on surface lithics.

Areas most affected

Land use maps of Scotland indicate areas of high agricultural potential (figure 2.1), and the density of scatters fit in well with these areas. Three-quarters of the land in Scotland is classed as agricultural land (Atkins et al 1995). This breaks down into arable production (11 %), improved grassland (19%) and rough grazing (69%). Obviously the latter has limited evidence for lithic scatters, and it is the former two types of farming which reveal scatters through the plough (Atkins et al 1995, 35).

Improved grassland is used for intensively managed lowland livestock and dairy farms which occur mainly in Ayrshire, Dumfries and Galloway, the Borders, Orkney, Caithness and parts of Tayside and Grampian (ibid. 37). On average, these farms cover about 200 ha, including 65 ha of arable crops and a small area of permanent grass, the remainder being rye-grass pasture. Improved grassland is generally managed on a six-year rotation, limed and heavily fertilised. Manipulation of scatters by the plough in these areas occurs on this cycle.

Arable cropping is largely restricted to the eastern lowlands, with the larger farms occurring in the Lothian and the Borders. Winter wheat and winter barley are the main crops, with smaller areas filled with oilseed rape or silage grass. Most farms now combine crop rotation with the use of inorganic fertilisers, pesticides, herbicides, fungicides and growth regulators. Usually arable soils have been tile-drained and are prepared for planting by ploughing and harrowing. These areas are usually the ones with the highest density of scatter sites, due to the regular ploughing regime. Chapter 3 will describe intimately scatter locations throughout south and central Scotland, and confirm that the number of scatters is higher in the areas which have a high amount of ploughing. *The creation of scatters is directly linked to the practice of farming.*

The experience of ploughing

Mike kept in tight to the previous furrow, his neck aching now as he approached the last line, eyes fixed absently at the brown earth as it twisted over the steel mouldboard. The gulls were barely audible above the noise of the Fergy, their constant wheeling behind the blades made it seem like they were an extension of the plough, their cries taking on a diesel tone. His gaze lifted along the white flapping line and rested at the farmhouse; Judy would be starting tea. He shifted impatiently and longed to be inside.

Creation of lithic scatters is ultimately tied to the amount of land ploughed; which again is tied to various external factors influencing the farmer who does the ploughing; economic and political factors on an international scale (such as common agricultural policies driven from Europe); local political concerns (family or neighbourly disputes) weather and internal factors (such as personal experience, as I have intimated in the above description). In a recent paper by Gray, the definitions of a family farm are considered (Gray 1998). Specifically, he highlights "...the economic and social interdependence of family and farm, the process by which the farm becomes embodied through family labour..." (ibid. 341)

He reveals that "...the essence of family farms is a consubstantial relation between family and farm such that the distinct existence and form of both partake of or become united in a common substance that is transmitted over generations" (ibid. 341). The difference between the academic's theoretical knowledge, and the actual lived experience of everyday practice (after Bourdieu 1977) is highlighted.

> ...the family farm is more a way of being-in-the-world than a specific set of people, relations and/ or activities whose boundaries can be precisely defined...the essence of the family farm is not the particular combination of observable or measurable attributes, such as business and managerial control, kinship relations among the principals, family labour, inter-generational transfer and farm residence, but a mode of apprehending that reveals and renders these things as 'family-farmlike'.
>
> ibid. 355

In this case, a Borders hill sheep farm is studied, but the results can fit metaphorically onto farms throughout Scotland, which practice a more crop-oriented farming.

Expanding on Gray's thesis, we can say that through the active reproduction of this consciousness, by say, the act of ploughing, (one of the routine activities which take place on a yearly cycle on many farms although probably not the hill farm mentioned above), the continuation of the scatter cycle is maintained. The *mechanical creation* of lithic scatters through ploughing, is inextricably linked to the processes through which a farmer operates. The very existence of lithic scatters and the frequency with which they are made can be seen as tied to the practice of farming. Although usually unbeknown to the farmer, certainly in recent times, his/her actions through everyday practice and routine have unintentional consequences which tie their work and lives to a whole array of practices further along the line. The archaeologist becomes linked to this practice as a direct result of the creation of the scatter, and existence of it. A ploughed field becomes appropriated by another for a completely different set of reasons. Intentions are far removed from the original consequences of the farmer's; and yet the two are inseparable.

The scatter acts as a fulcrum between two separate activities: the varied 'weight' of the farmers' actions conditions the archaeologists': as one arm of the scales moves, the other replies. If the farmer was not to plough, neither would the archaeologist walk. This is not to say that the farmers actions has a direct influence on whether the archaeologist walks or not, but that the latter is not possible without the former.

The routine of ploughing the land started thousands of years ago. Likewise, past lithic debris have been revealed at the same instance, acting as a metaphor for the seasonal routine of ploughing. As the plough cuts through the earth, revealing hidden pasts, scatters are created over and over again, contained within the routine cycle of farming life. As the antler pick or stone ard was thrown downwards to gouge a furrow, lithics would have been cast upwards. Although the first ploughing implements may not have created deep furrows, lithics lying in shallow soils would still have been encountered.

A history of agriculture

To appreciate this constant cycle of scatter creation, a short history of agriculture will be given, since records within the database have allowed an historical analysis. In this way, an historical context may be built up, and the process of surface scatter creation can be understood through time. A feel for the cyclical and routine imbued within the practice of agriculture is possible through describing the contemporary political influences on it, and the descriptive text has been supplemented by a variety of quotes and narratives which try to grasp the experience of this practice.

Ultimately, this chapter reflects on the creation of scatters throughout south and central Scotland. In no way has any justice been given to the complexities of agricultural history, the following descriptions act purely as an instrument to gain some insight to the structure of farming practice through time, and the influence this may have had on the surface lithic record.

Cutting the earth with any implement releases the potential for scatters and lithics to be revealed. From the earliest evidence of tools for soil-working such as digging-sticks, hoes, mattocks (Zvelebil 1994) scatters would have been routinely created and reworked into social lives, perhaps acting as metaphors to past methods of living and working the land, referencing the ancestors (Edmonds 1999).

Ploughman and Whales

The ox went forward, a black block, eyes bulging,
The mouth a furnace,
Tammag went forward, cursing.
The plough wavered between them.
And the gulls plagued Tammag, a whirl of savage snow
On the field of the sun.
Twice the plough struck stone,
A clang like a bell
Between the burning hills and the cold sea.
Tammag clawed his shoulder. He cursed.
And the ox belched lessening flame.
Sic furrows now and a bit...
Suddenly Tammag heard it, low thunder
Far in the firth,
And saw blue surging hills, the whales
On trek from ocean to ocean.

They plunged, they dipped, they wallowed,
They sieved a million small fish through their teeth.
The sun stood at the hill, a black circle.
The shore emptied with men and boats,
A skirl of women,
Loud dogs, seaward asylums of gulls.
The ox stood in the seventh furrow
In a dream of grass and water.

> *'Tammag!' the boatmen cried. 'Tammag!'*
>
> *Tammag wiped his silver face on his sleeve.*
>
> *He yelled at the ox. The plough wavered. They stumbled on.*
>
> *They tore from the black sun*
>
> *Loaf, honey-comb, fleece, ale-jar, fiddle.*
>
> *Mackay Brown 1971.*

As we saw in the previous chapter (and see figure 1.2), the first recorded lithic scatters in Scotland date to the late 18th century, and therefore this history shall begin from then.

The Union of parliament in 1707 was of great importance to Scottish agriculture, as farming practices in England were brought north of the border by travelling Scottish members of parliament (Symon 1959, 106). John Cockburn (1679-1758), a MP representing Haddington, was the proprietor of an estate at Ormiston in East Lothian. He implemented long-term leases, allowing his tenants to improve the estate land on which they lived. In Dumfries and Galloway, Craik of Arbigland (1703-98) was another notable land improver, who was influenced by Jethro Tull's writing on drill husbandry. In about 1745, he was the first to make turnip growing a practical concern in Galloway, and his work influenced other landowners in Berwickshire and Cumberland (ibid. 111).

At this time much land reclamation was undertaken, and peat areas such as in the Forth valley were divided and cut. The agricultural revolution began in earnest in the second half of the century (ibid. 136). Robert Barclay (1730-97) was a major player in the improvement of cultivation methods, with the introduction of new crops and machinery from England.

> Unreclaimed marshy moors and badly formed fields and farms were transformed into an estate worthy, so a contemporary reporter noted, of the better parts of England...An enormous plough, drawn by six to eight horses, *and taking a furrow sixteen to eighteen inches deep*, was used to turn over the more tractable parts of

> the land, the less tractable being trenched. This involved systematic opening of trenches all over the land, each trench being filled with the excavated material from the adjoining trench, the larger stones being left on the surface. Usually the trench was 3 ft. wide by 14-15 in. So thick was the crop of stones brought up that sometimes a thousand loads were removed from a single acre, while after their removal the level of the land was in places lowered, so Robertson informs us, from ten to twelve inches.
>
> ibid. 137-8 (my emphasis).

The effects this would have had on any archaeological deposits is obvious, with lithic evidence being cast up to form scatters, and in some cases removed altogether.

The Napoleonic war years at the turn of the century saw an increase in cultivation, in order to produce as much domestic food as possible. This affected the agricultural topography of Scotland dramatically. Improved road and bridge infrastructures meant that fertiliser, primarily lime, was made accessible, so improving the land. Eventually the acidic soils of much of Scotland began to yield crops. Consequently, more land could be tilled, and agricultural farmland expanded. "...many heather-clad hillsides were ploughed and converted to arable fields." (ibid. 163).

This rise in cultivation and high standard of land management continued after the war years.

Digging by hand, or hoeing by hand, are immensely slow and laborious jobs. Cobbett, writing in 1820, claimed that a man could dig with the spade twelve rods a day. A modern man could not dig anything like so much, and I am fairly certain that no man reared in a city could do a quarter of it. A one-horse plough might very well do half an acre a day, or eighty rods. That is the difference.

Seymour 1973, 34.

From 1750-1849, the progress in the invention, design and use of improved farm implements was great. James Small, a plough and cart wright based at Blackadder-mount in Berwickshire, was a great influence on the design of the plough, as he created his 'swing plough' in 1763.

> ...spectators were amazed to see one man with two horses and one of Small's ploughs doing much better work than was possible with the old Scot's plough and its team of four men and from eight to twelve oxen.
>
> Symon 1954, 384.

Small put much effort into correcting the design of the plough, and considered the task of utmost importance. He was also familiar with the antiquity of the practice of ploughing, as is suggested by his comments below:

> The Plough is an instrument of such importance in agriculture, that, in all ages, it has held the first place among the implements of that art; nor is there any nation mentioned in history, who have attempted to cultivate the ground without it, excepting some Barbarians, destitute of every art and science. And even these have used something equivalent, some turning up the ground with the horns of oxens, and some with other things equally unfit. These rude and barbarious attempts only slow the great usefulness of the instrument of which I propose to treat.
>
> Small 1784, 1.

The pride he had in his invention is obvious. Farmers were considered 'foolish' in not adopting Small's plough (Fussell 1952, 49). By the end of the 18th century the design of the horse-drawn plough had stabilised to a certain degree.

During the 1850s and 60s there was a rising tide of prosperity in Scottish farming. Moors continued to be drained and limed, and as the wheels of the industrial revolution sped up, so did the sound of ploughs cutting through soil. As railways were built, farmers were able to transport more grain and livestock. Artificial fertilisers increased the land suitability for a wider range of crops (ibid. 183). The increase in turnip production led to cattle becoming the farming mainstay.

> In the Lothians the whole countryside was impressive to the eye. The straight-sided, rectangular fields were trim and clean; there were no waste lands, no odd corners, no straggling hedges; even in winter the rich brown earth gave promise of great fertility.
>
> Symon 1959, 184.

Labour saving devices increased yields, with a variety of plough forms being introduced. Factory made short-boarded ploughs with bar-pointed socks and chilled steel replaceable wearing parts replaced the blacksmith-made swing plough. Broader and deeper furrows were possible. The introduction of ploughs pulled by fixed steam engines were tested around the 1850s, although only a few were used in Scotland. Fowler's design of 1854 is described here

> The equipment consisted of a combined engine and haulage drum at one end of the field, a self-propelling perpetual anchor and pulley at the other, both slowly moving along the headland so as to be always opposite the work. The plough...was hauled up and down the land between them by an endless wire rope...
>
> Fussell 1952, 84.

Artefacts were discovered, as Wilson describes in 1863 "...where the scenes of primitive populations are subjected for the first time to the plough" (Wilson 1863, 182). Agricultural colleges were set up and the importance of agricultural education and research was realised.

However, between 1875-1914 much arable land was laid down to grass, as a result of the policy of Free Trade, which allowed unrestricted food imports into the country (ibid. 210).

Father said that the salt of the earth were the folk that drove a straight drill and never looked back, but she was no more than ploughed land still, the furrows went criss and cross, you wanted this and you wanted that, books and the fineness of them no more than an empty gabble sometimes, and then the sham and the snapping that sickened you and drove you back to books.

Grassic Gibbon 1988, 61.

The most influential period of recent history occurred as a result of the two World Wars. The outbreak of the First World War had a dramatic effect on agricultural practice in Britain:

> Never...had British farmers been deprived of man and horses, or directed by their rulers to plough up and crop more land and in doing so to transgress accepted rules of good husbandry.
>
> Symon 1959, 209.

The importation of food and crops into Scotland during this period was stopped due to enemy mines, cruisers and submarines, and it was a slow process that led to the increase in domestic food production. Bad harvests and the prolonged war pushed the country into a food shortage crisis.

The crops had been poor for a third summer and pools of stock were low. The land had turned its back upon the living and many, in their turn, set themselves against their neighbours. Boundaries were more tightly drawn. Each month, it seemed, there was news of local disputes and sporadic fighting; weapons had been cleaned and sharpened for the first time in years. There had been deaths along the line and demands for reparation. There was *also talk of changes far to the east and across the great water, rumours which circulated like distant thunder when the elders met and talked. All seemed at odds.*

Edmonds 1999, 152.

In 1917 a new agricultural policy was announced by Lloyd George heading a new coalition government. Women were trained in agriculture and large numbers of farm tractors driven by internal combustion engines were made available. Better and more extended cultivation of agricultural land was ordered by the Boards of Agriculture in England and Scotland (Symon 1959, 215). These actions had beneficial results, and the last years of the war saw nearly 3 million more acres (in the United Kingdom) being cropped as compared to before the war.

The last years of the war saw a continuation of improved techniques, with government tractors being used to break up the land. An increase in crops such as potatoes over turnips came as a result of food production for humans over animals:

> ...most Scottish farmers...owned their own ploughs and were given a considerable amount of freedom in selecting the land to be ploughed...They cut down on low ground sheep, but kept much the same number of cattle, and by making longer hours stepped up production.
>
> ibid. 220-1.

The inter-war years took their toll on the agricultural industry, as policies were set up to import cheap food at high profit above the needs and security of a continuing society:

> Impoverished farms with many derelict fields were to be seen everywhere in the poorer areas, silent but eloquent testimonies to the depression in agriculture.

ibid. 239.

The Agricultural Development Act came into place during the Second World War, which saw the government buy and store farm machinery, and induce farmers to increase their tillage acreage for the 1940 harvest. The production of more wheat and potatoes was for home consumption at a time when shipping difficulties were at their greatest. (Symons 1959, 241). A Ploughing Grant Scheme was also set up, which paid £2 per acre to all land ploughed which had been in grass for seven years or more. 189,000 acres were ploughed under this scheme (ibid. 243). State control empowered and conditioned the landscape.

> When in August our airmen were fighting the Battle of Britain in the clearest of skies, harvesting had begun in Scotland under the most favourable conditions. The magnificent victory in the air was repeated in a minor degree in the harvest field.
>
> ibid. 245.

The following year an additional 260,000 acres of tillage was required, facilitating the reduction in the numbers of low-ground sheep. In the fourth year of the war the acreage was again expanded.

1943 saw the amount of land under cultivation standing at over 2 million acres, falling by 100,000 acres in the following year. The main crops at this time were wheat, rye, sugar beet and potato. Many farms, unaccustomed to growing potatoes and sugar beet found that their land was particularly suited to these crops, and continued growing them after the war. The forces and impetus experienced by farmers across Scotland and Britain during these years was remarkable, and set the highest acreage of tilled land in Scotland ever.

> In a variety of ways the Second World War was a stimulus to Scottish agriculture. Never before had our farmers been called upon to make such immense efforts and in the result possibilities hitherto undreamt of were realised. Considerable areas of

> derelict, wet and acid lands were made productive while land long noted for the poverty of its crops became fertile. On the formerly rush-infested pastures of Ayrshire the rush disappeared; on the "riggin" of Fife, the "beggar's mantle" of James VI, good crops of grain replaced worthless pasture..."
>
> ibid. 259.

After the war, although many farmers felt that they and their kin 'needed a rest' (ibid. 261), productivity stayed high, in an effort to feed the war-torn Europe, where farming had been neglected over the previous six years.

Between 1939 and 1945, the number of privately owned tractors in Scotland increased by 5,000, the majority of which were imported (Department of Agriculture for Scotland 1948, 7). In addition, over 1,000 tractors were acquired by the Department of Agriculture during 1942-44 for the use of farmers on application through their local Agricultural Executive Committee.

> *With the tractor, fields long fallow, not ploughed within living memory, were attacked; dirty fields to whose tops the bracken had already crept from the hill. The soil was hard and matted with roots: in the new year the harrow had to cross it again and again, and even then we sowed the corn amongst a mixture of soil and turfs.*
>
> *Scott-Moncrieff 1949, 22.*

The years after the war saw a steady decline in the amount of land under tillage, while land under grass rose (Department of Agriculture 1952-67; 1975; 1981; 1986; 1990-94; 1997-8). There was also a steady growth in the number of tractors, with diesel tractors increasing in use throughout the 1960s (Department of Agriculture 1952-67). By 1965, the amount of cropped and fallow land was 1,520,390 acres. The last recorded acreage (1998) stood at 1,629,921.

The vast increase in efficiency of production, amount of fertilisers added to the soil, and growing monocultures led by large farms, caused a small but significant backlash in some people's activities. The liberalism of the post 1960s led many people to return to more conventional and traditional methods of farming. Ploughing with horses rather than tractors was favoured by some, with organic and biodynamic methods surging. These methods are still in use today, but have only reached a significant scale over the past few years. This may yet be seen to be a fashionable backlash against recent agricultural disasters such as the BSE crisis, and growing fears against genetically modified foods, but self-sufficiency and the publics awareness of what they eat may certainly lead to changes in the way our landscape is farmed in the future. Equally, we may see new areas being ploughed as resistant and hardy strains of genetically modified crops are planted on previously poor land.

From a total tillage acreage of approximately 2 million in 1944, down by 25% of this figure, the amount of land ploughed in Scotland has been relatively stable since the mid 1960s. The influence of the two Wars on farming in Scotland was phenomenal.

It can be seen that a variety of factors contributes to the shape of farming in any area. General patterns have been described above, specific cases not outlined. It must be understood that a variety of scales influences the pattern of farming practice, from national policy to individual creativity. Similarly, a variety of scales influences the pattern and creation of the lithic scatters resource.

However, when there was talk of hitching man to plows and coaxing the earth to bring forth wheat, barley, and other such grains, Cybula would turn serious. He argued that as long as men hunted and fished they were free to move from one place to another, to live as they wished, and to leave to women the tasks of keeping the home fires burning and raising children. Men who tilled the soil grew attached to it like trees.

Bashevis Singer 1990, 12

Figure 2.2 shows the number of scatter sites discovered on arable areas by year since the late 18th century. Although the amount of ploughing does not influence the actual number of scatters found in an area, it can be seen that there are various peaks and troughs across the graph which reflect specific historical events, as land was available to walk at these specific times. These have been annotated.

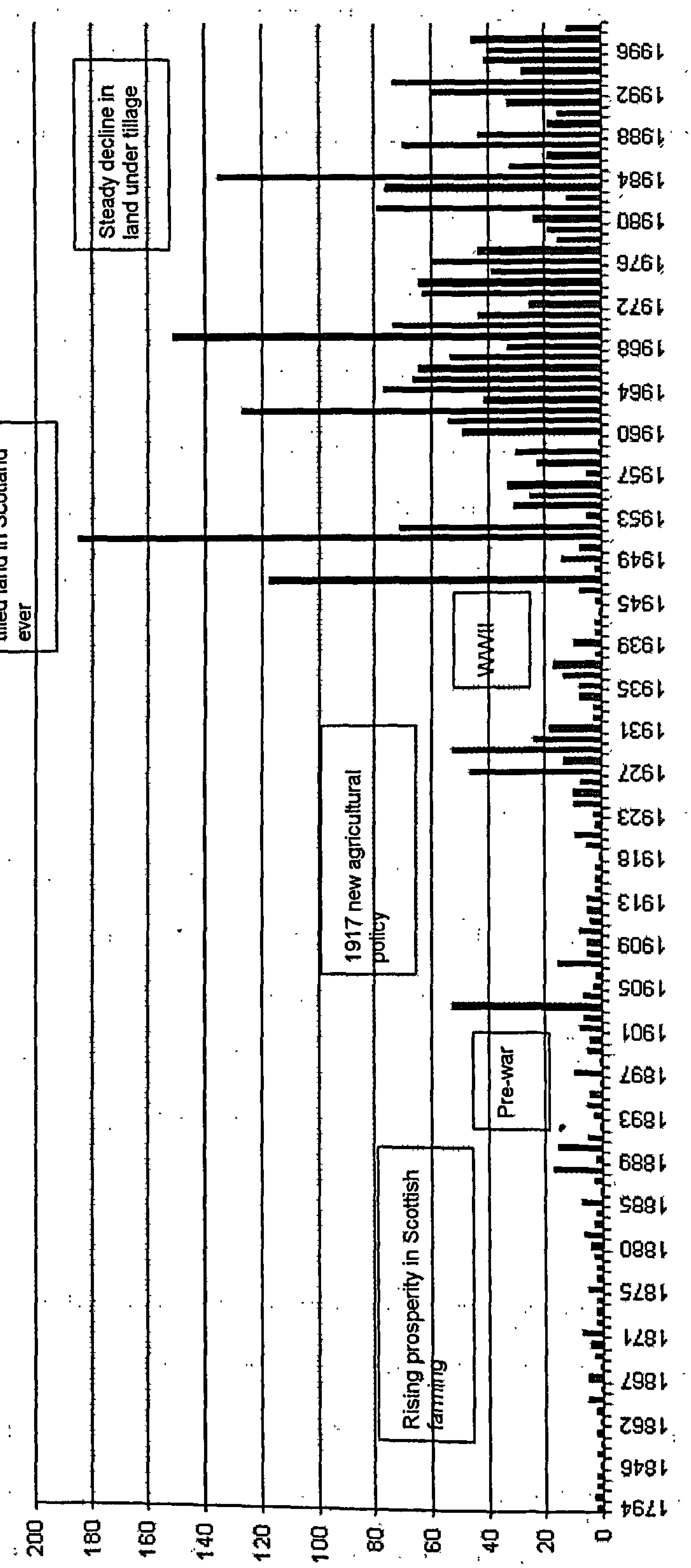


Figure 2.2 Number of scatter sites found or recorded on arable land since 18th century (annotated with historical information).

The Practice of Forestry

> *We enter. The place has an intense stillness, as if here the plant side of creation rules and even birds are banned; below, through the intricate green gladelets and branch-gardens, comes the rush of water in a moorland stream, one day to join the sea far to the south. This water-noise, like the snore of the raven again, the breeding-twill of a distant curlew, seems to come from another world, once one is inside the wood.*
>
> *Fowles 1979, 89-90.*

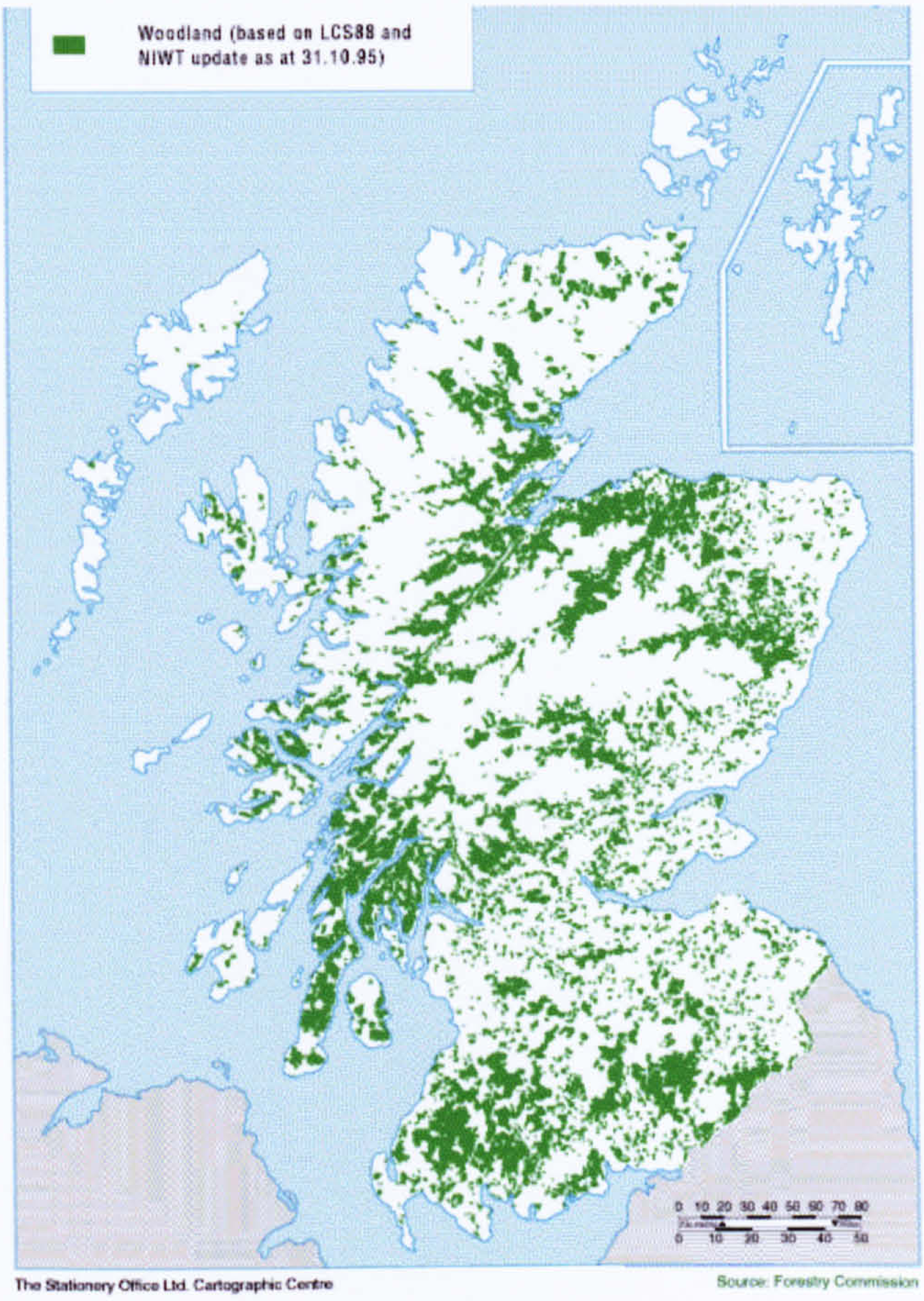
Arable ploughing is not the only activity which will produce lithic surface scatters. Although very extensive across Scotland, it is not as destructive as forestry ploughing, which cuts deeper into the subsoil, and reaches areas previously untouched. The number of scatters discovered on forested areas has been discussed in the last chapter, and lies at approximately 200 sites, compared to over 1,000 from arable areas.

Forestry ploughing results in *large* areas of 'virgin land' being deeply ploughed, causing any underlying material or preserved archaeological features to be partially or completely destroyed, and creating scatters of material. In 1996, over 76,000 km^2 of land in Scotland was covered in forestry (Scottish Office 1998; see figure 2.3). Forestry ploughs are larger than conventional tillage implements, with the mouldboard producing broad, deep furrows over 1m apart (Hinchliffe 1980, 12). "It is clear that in a very short time an enormous amount of damage can be done." (ibid. 12).

Fowler elucidates the atmosphere created by a woodland and the presence of trees in the above quote. The irony of modern forestry plantations is that the archaeological remains which indicate past lives are either destroyed or never recovered. Woodlands in prehistory will have played an enormous role in the lives of people throughout south and central Scotland, not only as a source of timber, but as symbolic and mnemonic entities.

In 1978, over 60% of afforested areas in Britain were deep ploughed, usually for drainage before ploughing, with this being more common in Scotland due to the amount of peat formation and subsequent drainage (Jackson 1978). "The result of ploughing...is the almost complete disturbance of the soil profile to depths of up to 70 cms, over wide areas (ibid. 2).

Figure 2.3 Areas of woodland and forestry in Scotland (reproduced from Scottish Office 1998).



Many examples of fieldwalking after ploughing have shown that material scatters can be discovered and recovered (Clarke 1989), and subsequent enquiry through excavation may reveal preserved archaeological remains (Harry 1995; Johnstone 1997; Ward 1997, 1999). At Melbourne in South Lanarkshire, a tract of hillside was ploughed for a Christmas Tree plantation in 1995. Fieldwalking by the Lanark and District Archaeology Society (LADAS) recovered vast amounts of material, including early and late Neolithic pottery. It is rare to find ceramic evidence from ploughed fields as it deteriorates quickly in regularly ploughed arable situations, but on this occasion the preserved material had been brought to the surface for the first time since deposition in prehistory. A number of pits were excavated, many of which contained the pottery. In one case a large saddle quern was found, lying over a smashed late Neolithic vessel (Ward forthcoming; see chapter 9).

Again, fieldwalking by LADAS in 1987 over a recently planted moorland at Biggar Common produced spectacular results (Johnston 1997). Extensive early Neolithic, late Neolithic and early Bronze Age artefact scatters were found, as well as a long mound and five round cairns. Although the upstanding monuments were badly damaged by ploughing, much information was retrieved through subsequent excavation, and radiocarbon dates stretching back to the Mesolithic were recovered from a burnt stake structure underneath the long mound.

Although these features were all damaged to some extent, the history of ploughing (i.e. being the first in recent history) presumably ensured that all artefact scatters related to subsurface features, and so comparative relationships would be possible (although not accepted within the report). It seems that an extensive occupation occurred on this hillside throughout prehistory, with related funerary monuments and features. The continual presence or routine occupation and living at this locale is evident by the material culture and features. To the east of Biggar Common, similar quantities of material were discovered again by LADAS (Ward, forthcoming), at Carwood Farm (Biggar Common East). The pottery has been catalogued and analysed by the author, and interpreted as representing activity indicating long term occupation of the area (Barrowman, in Ward forthcoming).

The place was not there before the tree, but came into being with it. And for those who are gathered there, the prospect it affords, which is to be had nowhere else, is what gives it its particular character and identity.

Ingold 1991, 167.

The ploughing of upland sites for forestry creates a rare situation, as the land ploughed has never usually been disturbed since prehistory. Soils may be thinner on these hillsides, and so any damage incurred by the deeper plough will be devastating. The majority of sites from the Lithic Scatters database come from agriculture land, minimal scatters are recorded from upland sites, although they do exist, as the above examples show. Inversely, the number of scatter sites on forested areas which have been *excavated* in south and central Scotland is larger than those on arable areas. Preservation of features is not necessarily as good, but rescue work is necessary in terms of forestry ploughing, as once the trees are planted, further damage may occur to any preserved archaeology.

The reason why the scatter evidence is poor, lies directly with the lack of recording in these areas. It is often much harder to walk forestry land between ploughing and planting, as many areas are privately owned. The only protection granted to sites on afforested land comes in the form of scheduled monument consent, with only a handful of sites lying within this remit. Only upstanding sites and monuments are protected in this way however, through pre-afforestation survey strategies (discussed below) (Fletcher 1997, 4). Walking post-ploughing is never seen as adequate, as scatters are not considered worthy of protection. Lithic scatters are mistakenly under-valued, as discussed in the previous chapter.

The one thing that monuments cannot reveal however, are the individual workings, the day-to-day routines of lithic craft-work. Scatters reveal flaws in workmanship, expose intensities of site visits, suggest lithic procurement and highlight the way people moved around their landscape. Individual realities are conditioned by the stones created, bad days, good days, mistakes and corrections. This material should be recorded in these upland areas, especially as, ironically, many of the places visited in these areas would have been woodland areas. The management of woodland throughout the Mesolithic and Neolithic may have played a prominent role in peoples lives (Edmonds 1999; Zvelebil 1994, 40). As Edmonds states:

> ...trees are so often consigned to the background. Where mentioned at all, they tend to be the victims of an inexorable and inevitable process of deforestation. This

> caricature does little justice to our evidence. In reality, woodlands were a commonplace in many areas...Places for food, for living and perhaps even places of spiritual danger, forests carried the marks of a human and ancestral presence. They were the familiar frame in which people's lives unfolded.
>
> 1999, 23

To understand the formation of scatters as a consequence of the planting of trees and forestry, a brief history of planting shall be described.

A short history of forestry planting

Since the middle of the 15th century, large scale tree planting has occurred in Scotland. The Scottish Parliament passed many Acts to encourage tree planting on estates, with tenants required to plant a certain number of trees every year (Edlin 1969). This came as a response to diminishing forests throughout the country.

> Although such enactments were followed only spasmodically in the Lowlands, and scarcely at all in the Highlands, they do provide evidence of organised afforestation at an early date.
>
> ibid. 6

These plantations usually occurred on the lower lying land and acted as windbreaks in many cases. It was not until the 1700s that the practice of planting trees by the lairds on their private estates followed a common pattern throughout Scotland. Extensions of this planting spread to the uplands, and this led to the introduction of hardy foreign conifers, which were ideally suited to the harsh growing conditions of these locales. Asia and North America exported native varieties throughout the 18th and 19th centuries (Edlin 1969, 7-8).

With the industrial revolution imports reached such a level that they overwhelmed domestic production, as many of the uplands of Scotland lay bare and 'unexploited'. In 1907, the Office of Woods and Forests planted forests which eventually stretched to over 8,000 acres, in Inverliever, Argyllshire. This was the first trial of large scale forestry plantation in Scotland, and it was very successful.

> *If you ask a pygmy why he has no chiefs, no law-givers, no councils, or no leaders, he will answer with misleading simplicity, 'Because we are the People of the Forest'. The forest, the great provider, is the one standard by which all deeds and thoughts are judged; it is the chief, the law-giver, the leader, and the final arbitrator.*
>
> *Turnbull 1993, 116.*

This precedent encouraged the planting of more upland sites. The influence of the two World Wars on afforestation was as dramatic as the influence seen by lowland ploughing for agriculture (above). An independent Britain was necessitated, and this led to the establishment of the Forestry Commission in 1919, as an 'appropriate national authority to carry out afforestation' (Edlin 1969, 9). Modern forestry methods and practices were introduced on a large scale with this development (see figure 2.4).

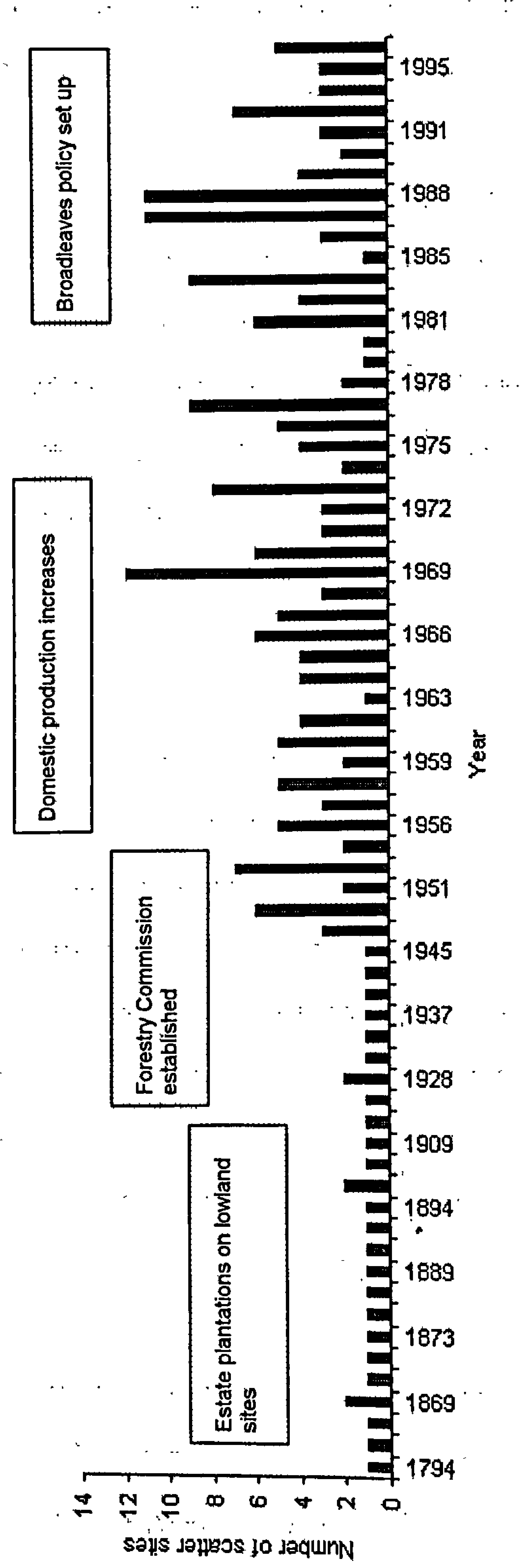


Figure 2.4 Number of scatter sites found or recorded since 18th century from forestry plantations.

The Forestry Commission was set up to build a strategic reserve of timber for the country. As mentioned above, most plantations were planted on what at the time was seen as 'unproductive' land i.e. upland moors and lowland heaths. It was seen as 'good' to put this land into productivity (Tsouvalis-Gerber 1998, 222)

> In 1995, the Forestry Commissions productive woodlands consisted of 736,000 ha of coniferous forests and 51,000 ha of broad-leaved trees...It had long before become the biggest landowner in the country. The 'nature' so produced was one consisting primarily of monocultural, coniferous plantations with straight boundaries and it was when they came into sight - that is, when they started to become visible components of the landscape - that opposition to them began to grow.
>
> Tsouvalis-Gerber 1998, 222.

Tsouvalis-Gerber is concerned with the historical and social processes that led to the institutionalisation of 'ancient woodlands', set up as a response to the opposition felt by the Forestry Commission plantations. The views of archaeologists opposed to such widespread devastation of upland archaeological sites is only one reaction to forestry. There are many opposition groups concerned with the subject, although usually in connection with the value of trees and the ecological environment. The preservation of broad-leaved forestry is just as important to the understanding of our landscape, as archaeological remains. They show that there are a variety of different views and understandings of the landscape, according to a variety of different groups opinions and perceptions.

Living woodland (as opposed to 'dead monocultural crops') were part of the landscape and formed part of the understanding of that landscape throughout prehistory. To re-create and preserve it today would allow some of this meaning and significance to filtrate back into contemporary lives.

In 1985 the Commission set up its Broadleaves Policy, to encourage broad-leaved planting, and special provisions were made to protect ancient woodlands (defined as woodlands planted before 1600 and sustained thereafter).

> *There is a spiritual corollary to the way we are currently deforesting and denaturing our planet. In the end we must most defoliate and deprive ourselves. We might as soon start collecting up the world's poetry, every line and every copy, to burn it in a final pyre; and think we should lead richer and happier lives thereafter.*
>
> *Fowles 1979, 82.*

Many of the issues regarding the destruction of archaeological sites and monuments on afforested areas do not consider the *scatter* material evidence, and as a consequence of this, little walking has been undertaken after ploughing. The small number of records reflects this trend (see figure 2.4).

The massive influence which forestry planting has had on archaeological remains over the past few decades has led to a growing awareness of the problems involved, and consequent debate over the management of large parts of upland Britain is constantly present within parts of archaeological and environmental communities. A history of forestry development and how this affects the scatter record is incomplete without a discussion of these recent issues.

The Forestry Debate

In 1987 a conference was held in Inverness entitled 'Our Vanishing Heritage' (Proudfoot 1987). It was set up to initiate the public debate as a response to discussions between foresters and archaeologists present at the meeting, on the back of tensions between the forest industry and environmental bodies.

It was accepted that "...resources were inadequate for pre-forestry surveys...and a largely unquantifiable part of the archaeological resource was being lost annually" (Proudfoot 1987, 5). A resolution emerged from the symposium:

> Recognising that over the past few decades the major threat to our national heritage has been the inability to respond flexibly and appropriately to successive changes in land use and noting the present scale of planning for forestry of the uplands of Scotland, often without effective prior archaeological survey, this conference desires the establishment of an integrated and properly funded system of survey and protection to prevent destruction of archaeological and historical sites, both on a national and regional level, as a matter of urgency.
>
> ibid. 5 and 36.

Archaeology subsequently became more of an issue within woodland management strategies, and shortly after this conference, the forestry commission created an archaeological field officer post, which is still in existence today.

The Forestry Authority additionally refuses grant proposals which will destroy significant archaeological remains, these must be previously known through pre-afforestation surveys. An afforestation team was set up at the RCAHMS in 1988 to implement these surveys (Dunbar 1987, 16), and Historic Scotland offer survey grants for this procedure. As Fletcher states:

> Hundreds of hectares of forests planted after the war are now coming into maturity. We must ensure that safeguards are in place to protect sites from the damage caused by felling and restocking. At a time when more contract companies are being

> used, on both private and Forest Enterprise land, everyone from forest planner to JCB driver must be made aware of and carry through recommendations.
>
> Fletcher 1997, 4

The emphasis on current concerns lies with the *protection* and *preservation* of *upstanding* monuments, implemented through site identification from pre-afforestation surveys. What is needed however, in addition to this course of action, is the survey of areas after forestry ploughing, to identify material being disturbed, and locate surface scatters. Although "...other non-scheduled artefacts which might be of archaeological interest..." (Breeze 1987, 20) are also covered by the Woodland Grant Scheme, scatter sites cannot be identified and defined before ploughing, which is when the initial surveys are conducted.

The development of forestry plantation across south and central Scotland has thrown many issues into relief concerning our attitudes to the past's remains. Lithic scatters are created from the ploughing which occurs on these upland areas. The history of plantation given above gives an indication to the way the lithic record has been shaped and influenced. Socio-political factors directly influence the creation of the lithic scatters resource. We shall see in the following chapter where and when scatters have been recovered from these specific areas.

Coastal zone and sand dune areas

> At many places round the Scottish coast and on the islands large areas are to be seen covered with huge deposits of sand, blown up from the sea-shore at different periods, some long before the Christian era and others very much later. Many portions of these barren wastes were once fertile, cultivated lands, occupied in prehistoric and in comparatively modern times by a numerous population, as is

> testified by the exposure of large numbers of relics when the wind blows away the covering sand.
>
> Callander 1911, 158.

The visibility of movement of material remains has a dynamic relationship with natural cycles, as well as human routine.

Sand dune and machair cover a large part of coastal Scotland, machair especially is almost unique to Scotland (Atkins et al 1995, 105). Figure 2.5 (reproduced from Whittington 1996, 90) shows the distribution of major beach complexes in Scotland. These sand dune sites are usually littered with scatter evidence, due to the nature of their erosion by sea and wind.

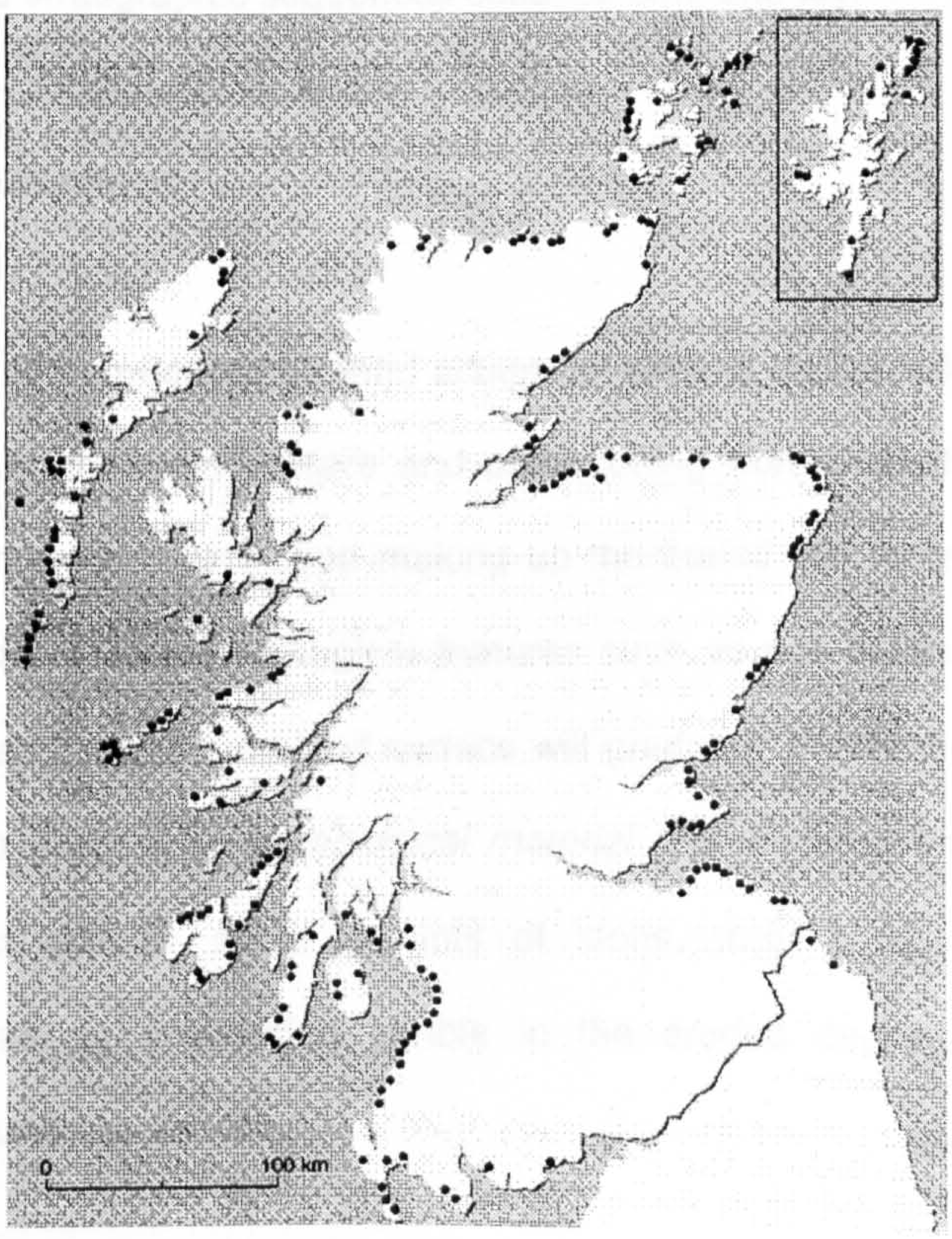


Figure 2.5 Major beach complexes in Scotland (reproduced from Whittington 1996, 90).

Past management by Scottish Natural Heritage led to a stabilisation of some areas to preserve sand dune mobility and stop erosion. Tentsmuir and Culbin sands are typical examples (Duncan and Usher, 1996; 95). This type of management is now not implemented, as it is seen as interfering with the natural cycle of coastal erosion intrinsic to the natural heritage of these areas.

The coastline has subsequently been divided (in management terms) into coastal cells (ibid. 95), which are being surveyed by a partnership of SNH, Scottish Office Environment Department and HS. The significance and distribution of any effects upon coastal sediment transport can then be determined, and consequently effects which this has on other factors, including the archaeological resource.

Lithic scatters are greatly affected by the erosion of sand dune areas, as original occupation levels are exposed and stratigraphic sequences collapse onto one layer.

Cowie summarises these effects

> Once freed of its overburden by wind action, an area of buried soil is then subjected to wind scour on its upper surface and undercutting from beneath. In a short time lumps of the more compact sand making up the buried soil horizons will break off and disintegrate. Any archaeological features such as pits or post-holes, dug into, through, or sealed by, the old land surface will gradually be damaged, or destroyed, by the erosion process. *Archaeological material is thus removed from its context*; more resistant objects, such as flints of stone, form a heavy residue which accumulates as an unstratified jumble in the eroded depressions or blowouts between the surviving knolls...
>
> Cowie 1996, 15-16 (my emphasis).

Sand dune areas, therefore, contain lithic scatters which have been created under different circumstances to ploughed scatters, but which have been removed from their context and are in effect similar phenomena. No human involvement creates the scatters in these cases, and therefore no historical analysis will be given. The movement and erosion of coasts is a continuous process in tune with natural cycles and weather patterns rather than the impact of humans.

Certainly concentrations of artefacts in dune systems can indicate areas of past activity, and as has been shown in past excavations at Torrs Warren by Cowie (1996) settlement evidence and archaeological features can be recovered through excavation of areas which have experienced minimal erosion. Amount of erosion should be considered next to lithic scatter evidence, and the continued HS coastal surveys will no doubt be an invaluable source of information regarding areas to prioritise excavations and recovery of archaeological information. Scatter integrity should play a large role in prioritising specific areas. However, as has been seen at sites such as Tentsmuir in Fife (discussed in the following chapter), material is incredibly mixed, although not necessarily moved far horizontally (Carter 1997).

The erosion of Scotland's coastline and subsequent exposure of prehistoric material is effectively outwith the control of humans. As dunes are moved by the wind, scatters may be *created* and remain visible for certain lengths of time. Perhaps this form of scatter creation should be prioritised as the coastal surveys implemented by Historic Scotland are fuelled by an ever present race against the elemental clock. The collection of scatters from these areas since the early 19th century is therefore a reflection of fieldwalker's movements (see chapter 3), rather than an aspect of historical or natural development of the coastline (figure 2.6). However, a record of major storms across the coast of Scotland may indicate years when lithic scatters were recovered.

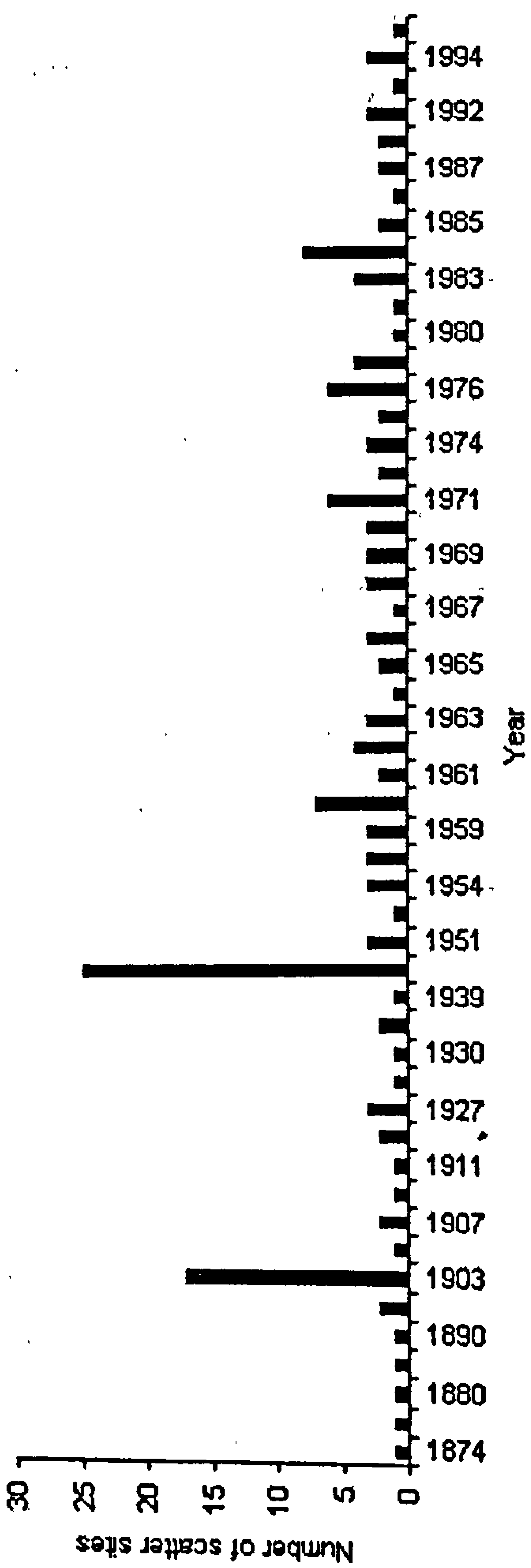


Figure 2.6 Number of scatter sites recovered or recorded since 19th century from coastal areas.

Industrial and urban development

The creation of scatters is somewhat overwhelmed by development as most of the time areas are *destroyed* through industrial and urban development. This is obviously a main threat to the lithic scatter resource. The other threats which have been highlighted above do not have any planning restrictions put on them by NPGG5, as developer funded work does. However, lithic scatters are not seen as a major element of the archaeological record to be protected, and therefore are rarely prioritised when pre-development survey work is planned or undertaken. As Wickham-Jones and MacKenzie state in a recent paper:

> Much current archaeological work is biased towards upstanding remains or corresponding site remnants (i.e. cropmarks). While not wishing to detract from their value, it should also be recognised that much of Scotland's past is not represented by upstanding material, nor by upstanding monuments and cropmarks. Early sites are often unknown in advance of the work that may reveal them, and they may well be represented by lithic assemblages alone. It may be hard to identify them given the current pace and mechanisation of development. Unless we can identify them, however, and take steps to recognise their worth, we shall be losing significant elements of Scottish prehistory.
>
> Wickham-Jones and MacKenzie 1996, 15.

This discussion should obviously proceed with caution, as to suggest that surface scatters are a viable archaeological resource which should be protected from any development puts them on an equal footing with monuments under protection. Linked with the fact that scatters can appear *anywhere* as a mark of human presence on the land at some point in the past 10,000 years, all areas under threat of development will potentially have archaeology underneath them, and should, if the argument is taken to its logical conclusion, be protected.

Let us look at an ordinary example of development which has a massive influence on landscape archaeology, but which almost ignores areas of potential scatter presence. Any development which involves a pre-development survey through a linear corridor (i.e. road building or other communications) will cut across a diverse landscape, usually along the easiest route available. This tends to be along river valleys and low-lying land. As the walkover survey follows the proposed route within a certain corridor (say 50 m), different types of land use will be examined. Much of this, in Scotland (see Economic Report on Scottish Agriculture 1998) will be land under pasture. Scatter sites will not be noticed therefore, although they may exist and have not yet been recovered by fieldwalking during a time when the pasture was ploughed. Much of the rough pasture areas walked over may never have been ploughed.

Scatters have been recovered from a range of topographies. It therefore seems that a high percentage of the land which is walked throughout a typical corridor survey, will contain a number of scatter sites and consequently archaeological structures in the subsoil.

One example where a relatively sound survey technique was used can be given by the rescue work undertaken by GUARD on the M74 pre-development survey (Robins 1993). GUARD were contracted by the Scottish Office Industry Department in consultation with Historic Scotland to undertake an archaeological survey in advance of the M74 along a 67 km stretch from Elvanfoot to Kirkpatrick Fleming in Dumfries and Galloway. The third and final phase of the work was undertaken as a systematic fieldwalking examination of a 50 m wide corridor of the entire route (ibid. 5). As Robins states

> In broad terms the route has been dictated by the topography through which it passes. It is more than probable that a similar corridor effect has also influenced traffic throughout history and indeed prehistory. This has had the effect of concentrating traces of human activity over time in the corridor. For instance it has long been thought that Mesolithic communities with their dependence on exploiting a range of ecosystems (coastal, upland, marshland, forested etc) would have first

explored inland areas via river systems: they offered both a resource and a ready made route.

Robins 1993, 10.

From the 67 mile route, only 15 fields were ploughed, of which 12 were walked. Kirkhill Mesolithic site was discovered from this strategy (Pollard 1993). Two other scatters had been discovered previous to development. The remaining corridor contained a vast majority of pastural fields which were walked when stripped. Forested areas were not walked as the plantation growth was deemed too dense.

It seems that where there is a paucity of ploughing, the next best strategy is to check for archaeology after topsoil stripping. No other lithic scatters were recovered using this technique on the M74, but it has been successful in other situations, such as on Arran (Donnelly, forthcoming). Although sub-surface archaeology and a certain number of lithics will be recovered, the vast majority may occur in the topsoil which has been stripped, and this should really be sampled.

As in the case above, a high percentage of the land within a survey will be pasture at the time of walking, as seen in the above example, given the large amount of sheep farming in the country. Over 100,000 hectares in the Clyde Valley alone was under grass in 1997, (Department of Agriculture and Fisheries for Scotland 1998) 48 % of all arable land was under grass in Scotland (ibid. 1998, 35). These figures illustrate the amount of land which was probably walked under pasture in 1997. Even allowing finds from molehills and eroded areas (such as river cuttings, paths etc), the chances of finding lithic scatters are slim. The majority of surveys are also undertaken in a short period of time and may be out of synch with the ploughing regime.

Development in such areas is received with mixed responses. As Ward states:

> Given the effects of forestry, pipelines and other major developments, which have all recently eroded the archaeology of Upper Clydesdale, the announcement in 1989 that the A74 dual carriageway would be upgraded to a six-lane motorway, with ancillary roads and service areas, meant that another blow was about to be administered to the beleaguered landscape.
>
> Ward 1992, 1.

Development in most cases leads to the destruction of archaeological features. It is only in exceptional circumstances where the archaeological remains are of such importance, that development is re-planned or alternative measures are implemented. Lithic scatters do not fall into such levels of importance, and therefore will usually be destroyed by development. Only a change in the value put upon lithic scatter sites will result in more time and money being spent on them under rescue conditions in the future. Urban sprawl as seen in the Central Belt of Scotland has led to a paucity of scatter evidence. It seems that any development pre-NPPG5 hardly ever considered lithics as a viable concern, as only a few scatters are recovered. Figure 2.7 shows the number of lithic scatter sites recovered from developed areas since the early 19th century. It can be seen that the majority of development has occurred since the 1950's.

It is possible to see the influence which all the above factors have on shaping the scatter resource. The scattering of lithics presents a variety of options to the person who actually finds them and records them. The creation of the lithic scatter record as recorded by fieldwalkers must also be considered as part of this study.

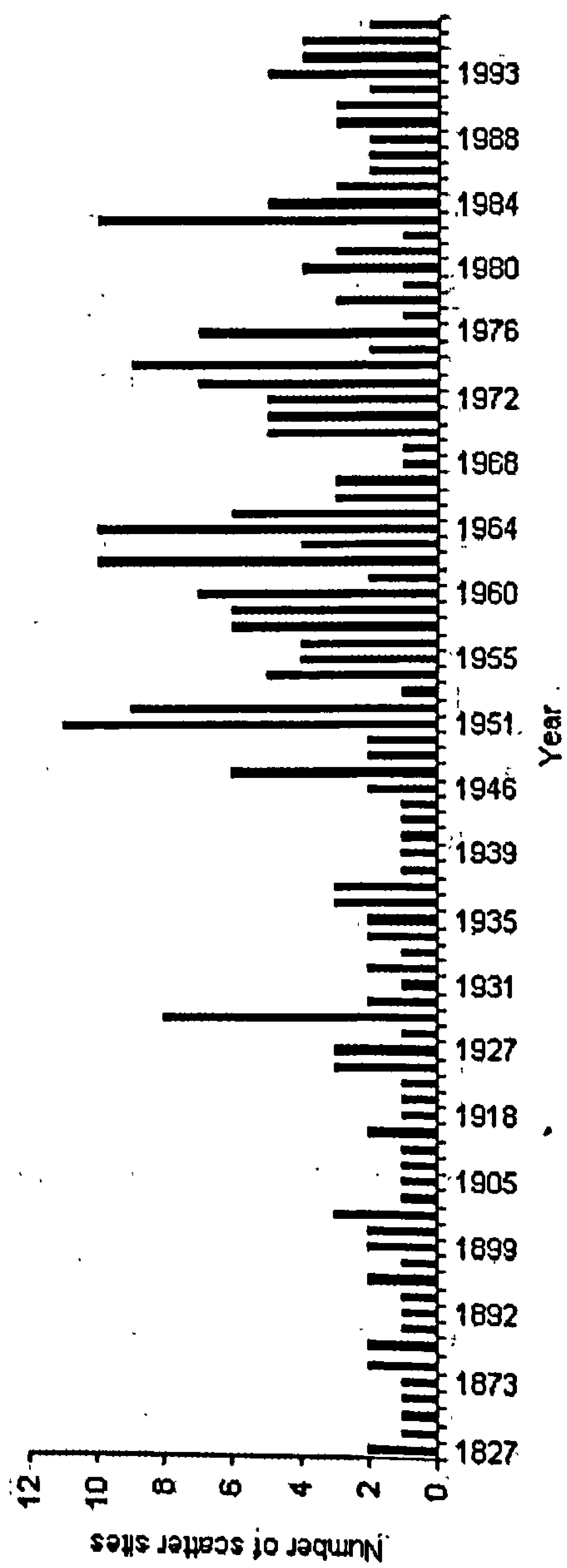


Figure 2.7 Number of scatter sites recovered or recorded in developed areas since the early 19th century

Fieldwalking and methodologies

The mechanical and physical creation of the lithic scatters resource is only half the story, when considering the nature and formation of the lithic scatters resource. Fieldwalking and recording of lithic scatters is ultimately the deciding factor in what is found. Methodologies subscribed to heavily influence the patterns recorded, which represent the surface lithic scatter.

The various fieldwalking strategies which can be employed are essentially different trade-offs between the amount of time available and level of detail wanted (Liddle 1985, 7). Most fieldwalking projects involve a progression from extensive survey over the area involved, to a more detailed, intensive examination of selected areas (Brown 1987, 28). These are all relative and the scale of intensities depends on the project's aims and objectives.

In Holgate's survey of the Thames Basin, he suggests that there are three scales of intensity to fieldwalking, "haphazard collection of flint artefacts which catch the eye; systematic collection of all recognisable flint artefacts within a specific locality, for example a field; and systematic collection of all visible human struck flint from collection units of a regular size, for example grid squares, surveyed on the ground before collection begins" (Holgate 1988, 66).

He found that 50 m spaced transects (1988, 67) were suitable for areas where casual collection had located major scatters and a general assessment of the reliability of previous collecting was sought, but that if concentrations are to be picked up in individual fields, then a smaller interval of around 20 m "should sample virtually all concentrations of flintwork" (ibid. 67). Brown suggests a spacing of 25 m for the reconnaissance survey, and even at this interval warns that "small scatters may well be missed" (Brown 1985, 28). It is consequently suggested that improved recording will occur if lines to be walked are broken down into shorter lengths.

The most efficient interval to use has been seen to be 20 m. Any wider and the information obtained may be misleading, especially when walking a field which has only been ploughed a few times. One such site, at Weston in South Lanarkshire is a prime example: an area of moorland was re-seeded, and ploughed for the first time in history. The fieldwalking excursion located several small discrete scatters, which may have been missed if an interval of more than 20 m was used. As it was however, the field was walked in a complete systematic intensive fashion, with fieldwalkers side-by-side (see chapter 9).

Once an area has been covered in this way and it is vaguely understood where higher densities of lithics occur, it is possible to target certain areas and undertake a more intensive survey, trying at the same time to work out whether any edges exist to the concentration, and subsequently defining them.

Intensive methodologies

The scale of the intensive survey must be decided from the evidence recovered by initial walking. One technique involves gridding out an area of the field over a concentration:

> A simple grid...will provide a series of squares in which finds can be located and recorded...A base line should be established by either tape measurement or compass bearing from known fixed points such as field boundaries, barns, etc., and from it a square or rectangle extended to surround the area to be recorded...The opposite sides of this framework are then divided into an equal number of parts, being the same for all four sides. Two more lines, similarly divided, are then set out, joining the centre points of opposite sides of the framework, with the result that all the remaining points of the grid can now be sighted into position without further measurement, as each point will be in line with four others already fixed...The individual squares of the grid may be marked by pegs or bamboo canes...The size of

> the squares can be varied according to the particular problems of the site, but generally should not exceed 20 m x 20 m.
>
> Steane and Dix 1978, 63.

This technique obviously takes a while to set out - one advantage is that if further work is to be carried out in the area as a consequence of the fieldwalking, such as geophysical and geochemical analysis and/ or test pitting and excavation, the same grid can be used to base this work.

Brown appreciates this method, and suggests that a more intensive line and stint method, with reduced intervals in both directions, differs little from grid walking (1985, 28). Indeed, an interval of 5 m or less will give as accurate a picture of the layout of lithics across the area surveyed as grid walking. Recent work undertaken in the Cambridge Fenlands also found this to be the case (Edmonds et al 1999, 80-81).

As well as methodologies used, soil and weather conditions will affect results. Surface and weather conditions will limit the amount of information which may be taken from the field (Shennan 1985). Ideal conditions are overcast and slightly damp, possibly with a light drizzle, which enhances any lithics by washing and creating a shiny surface. Lack of bright sunshine avoids deep shadows which will confuse the vision of the walker, especially when the plough furrows are relatively deep (Brown 1985, 32). Frost and snow also lead to difficulties.

The experience of each person at spotting and identifying artefacts will vary across the field, and it is inevitable that varying patterns will emerge (Schofield and Webster 1990). It is important to record each person's abilities and their position in the field throughout the exercise, so as to spot any anomalous patterns as they emerge.

The speed of walking and scanning intensity is also a factor which alters results. This 'scanning intensity' is the most basic limitation of any survey (Foard 1978, 359). It has been suggested that a large number of people should be used for the initial extensive surveys of an area, and then more experienced people in smaller numbers, or even individuals should undertake the more intensive survey (ibid. 359).

The insecurity that inexperienced walkers may have will also affect results. I have certainly experienced a certain doubt and lack of self confidence after walking many fields and not uncovering a single lithic. Only when a scatter is eventually uncovered does the confidence return (for example, see chapter 6).

Some of the above instances were documented with interesting results on a recent fieldwalking project at Blackshouse Burn.

Blackshouse Burn fieldwalking survey

The Blackshouse Burn Environs Project (Lelong and Pollard 1998; Lelong and Pollard forthcoming) undertook to survey the landscape around a late Neolithic enclosure situated in an upland basin in South Lanarkshire (figure 2.8). The enclosure was excavated by Hill in the 1980s and subsequent surveys by GUARD of the surrounding locality recorded several small cairns built inside the enclosure and to the south and west of it, with funerary cairns and another enclosure occupying the crests of the ridge which half encircles the basin from which Blackshouse Burn is located.

The fertile soils of South Lanarkshire have revealed a large number of scatters. Many of these were recorded in the first part of this century, but there has also been a considerable amount of systematic fieldwalking undertaken by the Lanark and District Archaeology Society over the past few years, as well as by various individuals since the 1960s (see chapter 3).

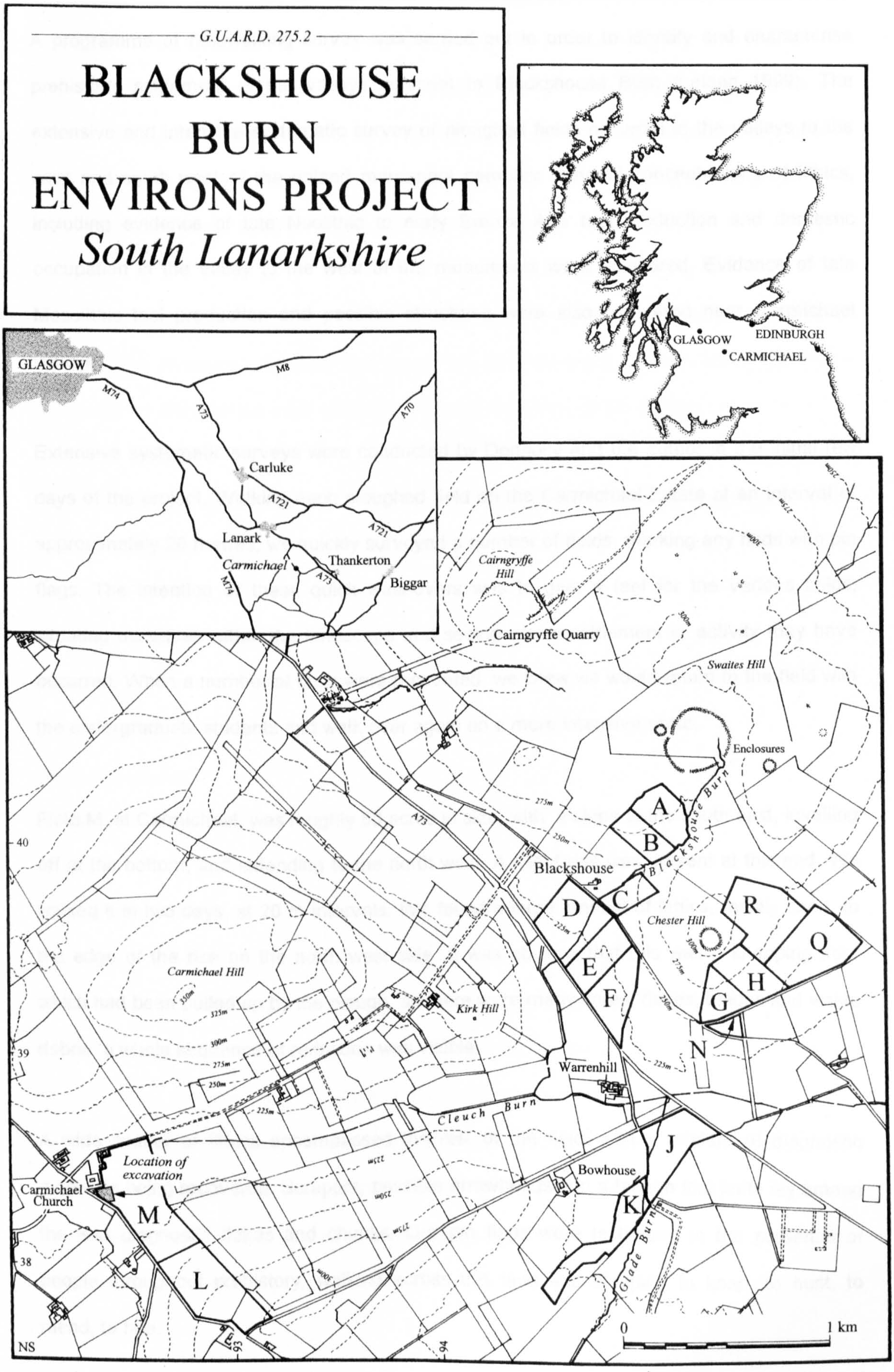


Figure 2.8 Location plan of Blackshouse Burn fieldwalking project (reproduced from Lelong 1999).

A programme of fieldwalking survey was carried out in order to identify and characterise prehistoric settlement in the valleys adjacent to Blackshouse Burn (Lelong 1999). The extensive and intensive systematic survey of ploughed fields occurred in the valleys to the west and south west of the upland monument complex. Several concentrations of lithics, including evidence of late Neolithic to early Bronze Age tool production and domestic occupation in the valley to the west of the monuments were recovered. Evidence of late Mesolithic tool production and possible structures were also recovered near Carmichael village.

Extensive systematic surveys were conducted by Donnelly and the author in the initial few days of the project. Walking each ploughed field on the Carmichael Estate at an interval of approximately 20 metres, we quickly surveyed a number of fields, marking any finds with pin flags. The intention of these quick walk-overs was to gain a feel for the various fields, situating ourselves within the landscape and seeing where settlement or activity may have occurred. When a number of finds were recovered, we knew we would return to the field with the undergraduate students and walk over again on a more intensive scale.

Field M, at Carmichael, was roughly 50 acres in size, with a slope to the south east, levelling off at the bottom, and extending to the north west. A slight rise was present at this end. We walked it in two days, at 20 m intervals. We found a large amount of lithics, mostly chert, to the edge of the rise on the north west side. It was obvious that this was a knapping floor which had been pulled up by the plough, as there were many cores, flakes, blades and waste debris, a whole sequence of reduction was visible.

A wide scatter of lithics encompassed the rest of the field, with a mixture of diagnostic elements being recovered. Scrapers, possible arrowheads and a broken flint knife lay among the less diagnostic flakes and chunks. Our pin flags were testimony to the presence of people throughout prehistory, walking across this land and stopping to knap, to hunt, to mend, to hoe.

When the students arrived to walk over the land more intensively (at 2 m intervals), the evidence doubled. I wanted to record the fieldwalking process intimately, revealing how different people surveyed the land, what speed people walked at, what was recognised as prehistoric material, how quickly people grew bored. The *process* of fieldwalking was what created these patterns, not the subsequent analysis.

At the end of the day, we surveyed in all the pin flags with a theodolite, and so produced an accurate plan of where everything was found. We had interesting patterns emerging. Figure 2.9 shows the lithics which were recovered, natural finds are marked in pink.

The southern half of the field was walked on the 13th of March 1999 by seven people. The level of experience held by each is shown below.

Beginner

Beginner

Competent

Some experience

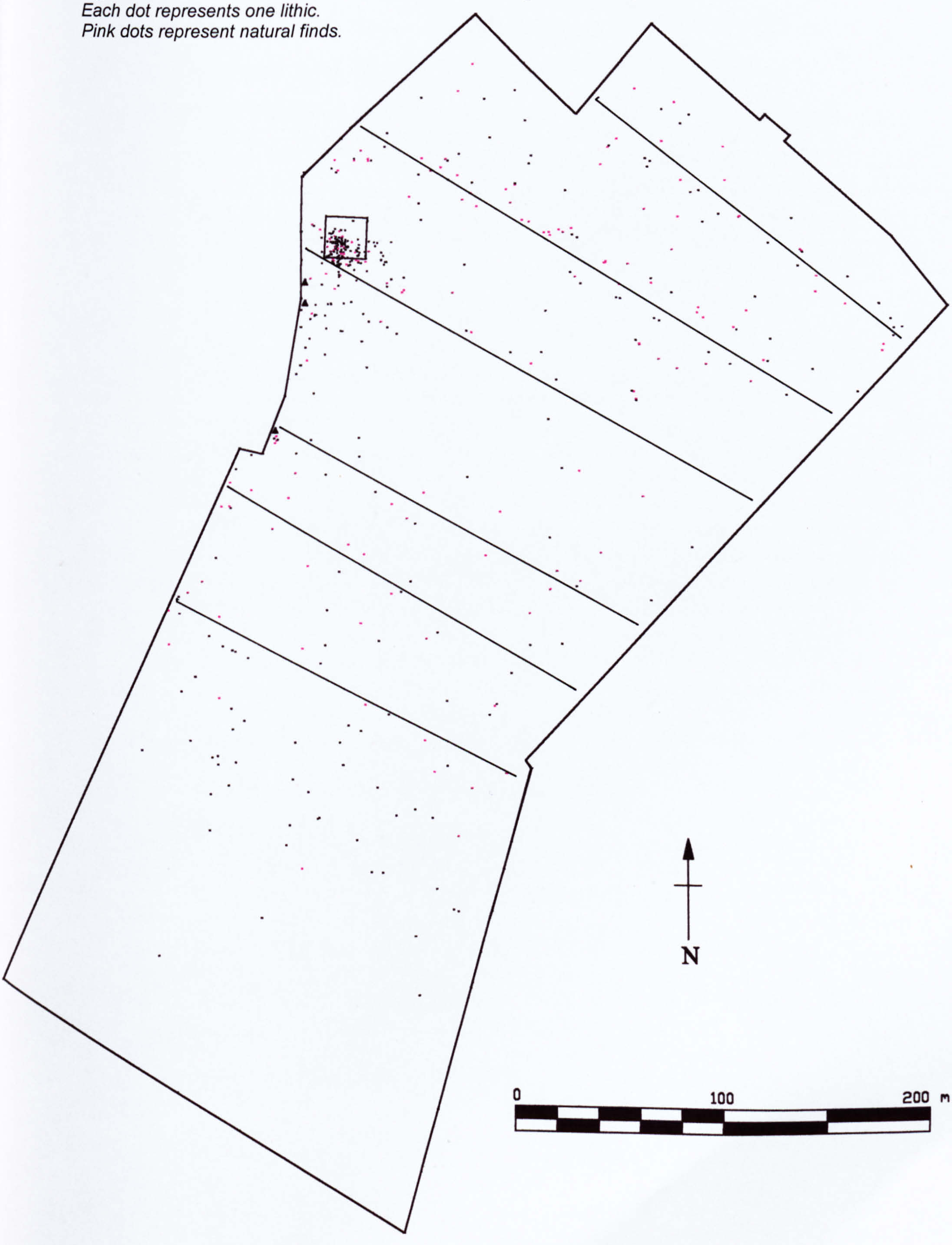
Beginner

Beginner

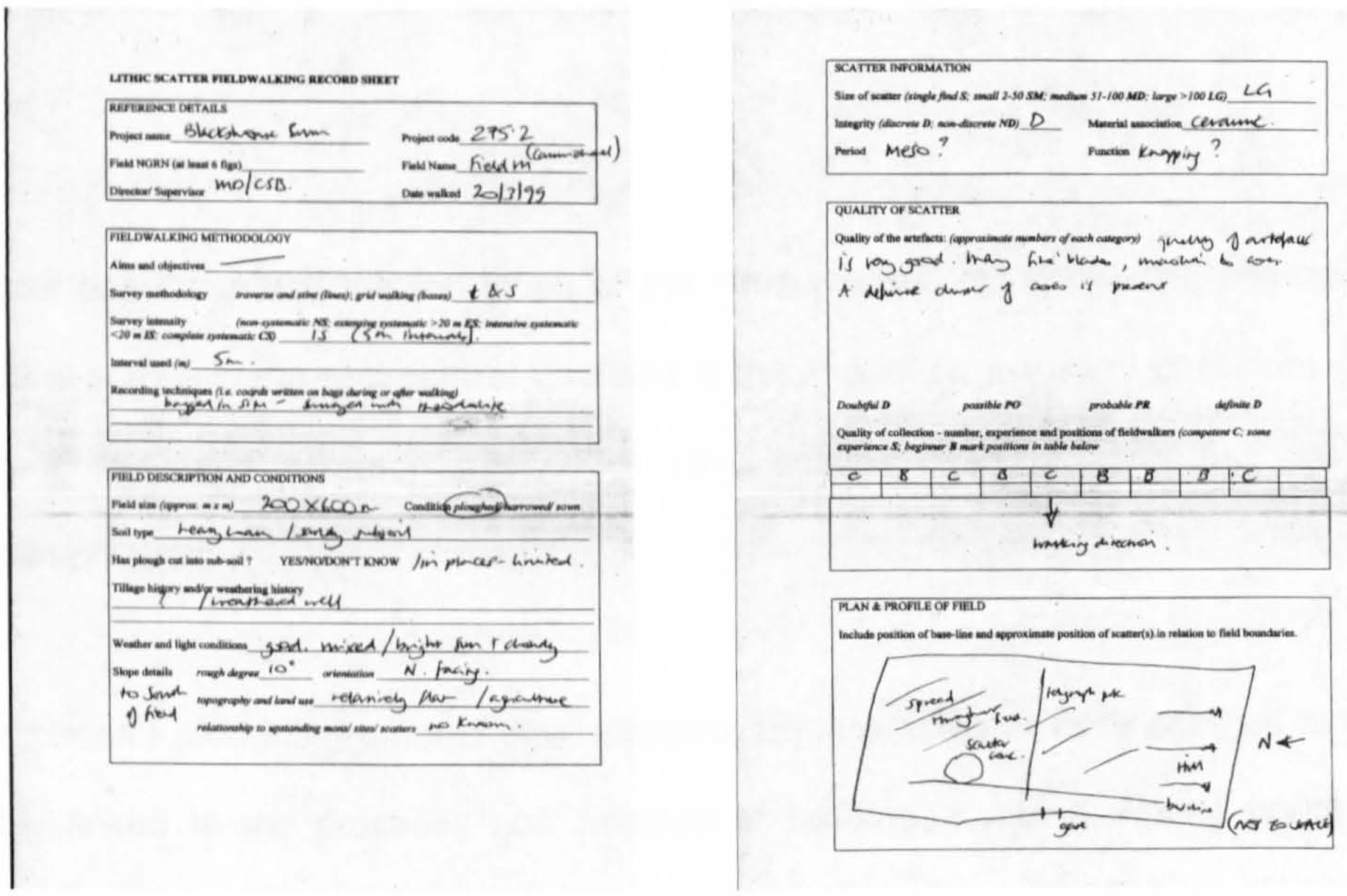
Competent

The weather was overcast all day. We started walking from the centre of the field on the north-west side, at 5 m intervals. As can be seen by the plan in figure 2.9, many natural objects were collected on the first stretches of the exercise. However, as the less experienced walkers gained an understanding for the types of genuine artefact present in the field, less natural objects were picked up. The pink dots form lines approximately 10 m apart (annotated by black lines), which fits in approximately to the order of the line as listed above, although the pattern is very approximate.

Figure 2.9 Plan of Field M at Carmichael estate, showing lithics surveyed.
Each dot represents one lithic.
Pink dots represent natural finds.



A better indication to the bias in results can be seen by the second phase of walking which took place on the 20th of March. Nine walkers surveyed the top part of the field to the north of the main scatter concentration. The interval used was again 5 m, and the level of experience present can be seen on the pro forma in figure 2.10.



LITHIC SCATTER FIELDWALKING RECORD SHEET

REFERENCE DETAILS

Project name Blackshaw Farm — Project code 275.2

Field NGRN (at least 6 figs) — Field Name Field M (commercial)

Director/ Supervisor MD/CSB. — Date walked 20/3/99

FIELDWALKING METHODOLOGY

Aims and objectives

Survey methodology *traverse and stint (lines); grid walking (boxes)* t & S

Survey intensity *(non-systematic NS; extensive systematic >20 m ES; intensive systematic <20 m IS; complete systematic CS)* IS (5m intervals).

Interval used (m) 5m.

Recording techniques *(i.e. coords written on bags during or after walking)*

FIELD DESCRIPTION AND CONDITIONS

Field size *(approx. m x m)* 200 X 600 m — Condition ploughed/ harrowed/ sown

Soil type

Has plough cut into sub-soil ? YES/NO/DON'T KNOW / in places - limited.

Tillage history and/or weathering history

Weather and light conditions good. mixed / bright sun & cloudy

Slope details *rough degree* 10° *orientation* N. facing.

topography and land use relatively flat / agriculture

relationship to upstanding mons/ sites/ scatters no known.

SCATTER INFORMATION

Size of scatter *(single find S; small 2-50 SM; medium 51-100 MD; large >100 LG)* LG

Integrity *(discrete D; non-discrete ND)* D — Material association ceramic.

Period Meso ? — Function Knapping ?

QUALITY OF SCATTER

Quality of the artefacts: *(approximate numbers of each category)*

Doubtful D *possible PO* *probable PR* *definite D*

Quality of collection - number, experience and positions of fieldwalkers *(competent C; some experience S; beginner B mark positions in table below*

C	B	C	B	C	B	B	B	C	

walking direction.

PLAN & PROFILE OF FIELD

Include position of base-line and approximate position of scatter(s) in relation to field boundaries.

Figure 2.10 showing pro forma sheets with details of the process of fieldwalking

There are three main lines of pink dots shown in figure 2.9, which correspond to this incident. They lie approximately 40 m apart, which is the exact distance covered by the line of fieldwalkers. The cluster of three beginners in the line are responsible for this pattern, as they picked up a large number of natural objects.

The final analysis showed that 622 objects were collected during fieldwalking and trial trenching, with 199 of those rejected as entirely natural objects, leaving 463 genuine artefacts (Donnelly 1999). Cores, blades, tools and microliths demonstrate that the concentration relates to late Mesolithic activity, with knapping having occurred on the site.

The process of fieldwalking is a dynamic activity involving a number of individuals with separate experiences, who all contribute in their own specific way to the creation of the recorded scatter. Patterns have been shown to emerge which actually *map* these individual traits, and show how the morphology and artefactual make-up of the assemblage collected is a combination of the experience of fieldwalking, and the actual presence of lithics on the surface of the field. We shall look at the experience of fieldwalking more closely in the following chapters.

Conclusion

This chapter has described the formation of the lithic scatters resource. The availability of lithic scatters across south and central Scotland is dependant on a variety of factors. Arable ploughing is the most common method of lithic scatter creations, and this has been described in practice.

As the process of ploughing creates lithic scatters, the existence of lithic scatters is in turn inextricably linked to the practices and routines of farming. Each ploughing manipulates visible scatters in a variety of ways, depending on soil depth and land capability. The link between scatters and ploughing extends back to prehistory, experiences from then are reiterated today (chapter 4).

Forestry also ploughs into the landscape, and although in smaller areas, the depth of ploughing is greater. These areas will never have been exposed before, artefact scatters being revealed for the first time since the deposition of them in prehistory. There is a lack of recording of these scatters, as there are no strict policies implementing the walking of ploughed hill-land; all survey is conducted *before* ploughing.

Scatter formation is not always a result of human activity. Coastal erosion results in the exposure, and burial, of archaeological material, sometimes on a scale much greater than experienced through other means. These scatters are not necessarily recorded to the same degree as if they existed on arable land. The frequency of scatters throughout prehistory in the same situations must have been very significant.

Development disregards the value-less lithic scatter in the majority of cases. Large scale development as seen by road building programmes destroys vast tracks of land where scatters no doubt exist, and although they are occasionally recovered, as at Kirkhill, many more will be lost. However, where scatters are recovered, the opportunity is available to excavate and therefore reveal possible sub-surface deposits.(as seen in chapter 8).

Ultimately, it is the process of fieldwalking and recording which creates the scatter resource that we know. The formation of these records is dependent on a methodology, weather and soil conditions, and the level of experience of the fieldwalkers. The data making up the lithic scatters resource is formed from all these processes.

How these are represented throughout the lithic scatters database is ultimately a consequence of their discovery through a variety of means ranging from a farmer collecting *elf-darts* to a professional archaeologist fieldwalking. This is the next stage on our analysis of the lithic scatters resource, and the following chapter will describe, using the information held within the database, the formation of these records across south and central Scotland. The synthesis of the database not only produced a set of information which will be described in the next chapter, but revealed a dynamic history of collection and landuse which can never truly be revealed by looking at the database alone. The furrows of the field are furnished with faces: faces of farmers and fieldwalkers, each with their own perceptions, attitudes and agendas. The true nature of the database is revealed...

Chapter three

Furnishing the furrows

The Spring flood brings us more than high adventure; it brings likewise an unpredictable miscellany of floatable objects pilfered from upriver farms. An old board stranded on our meadow has, to us, twice the value of the same piece new from the lumberyard. Each old board has its own individual history, always unknown, but always to some degree guessable from the kind of wood, its dimensions, its nails, screws, or paint, its finish or the lack of it, its wear and decay. One can even guess, from the abrasion of its edges and ends on sandbars, how many floods have carried it in years past.

Our lumber pile, recruited entirely from the river, is thus not only a collection of personalities, but an anthology of human strivings in upriver farms and forests. The autobiography of an old board is a kind of literature not yet taught on campuses, but any river-bank farm is a library where he who hammers or saws may read at will. Come high water, there is always an accession of new books.

Leopold 1949, 25.

Introduction

The previous chapter looked at the various ways in which lithic scatters have been created over the past three centuries, showing how a variety of cultural, socio-economic and natural factors determine their existence. The formation of lithic scatters in recent times is linked either to the people who plough or develop the land, or to natural cycles. The recording of these scatters was also considered, and it was shown that a combination of field methodologies and fieldwalkers' level of experience also played a significant role in the morphology and type of the scatter resource.

Subtle relationships are played out between a variety of people in the constitution of lithic scatters. Throughout the collation of the database, relationships formed between fieldwalkers and the material they found became apparent. It is of the utmost importance to describe these relationships, as without them, the dataset becomes almost meaningless, void of any human element or indications of social activity.

The scatters which are presented by the Lithic Scatters Database have been recorded by a variety of people in many different situations and for a variety of reasons. An analysis of the resource must include a description of where, how and when the scatters were collected and/ or recorded. By taking a geographical approach to this analysis, the distribution and densities of scatters for each region can be illustrated. Consequently a reflection of the recorded lithic scatter resource will be appreciated, giving an overall history and geography to the collection and recording of scatters in south and central Scotland. Looking at the furrows of a field alone gives only part of the story; to furnish them with faces applies a social context. Through this analysis, the contents of the database become a collection of personalities and an anthology of human stridings.

The scatters will primarily be considered from the north-west coast, around Argyll and Bute. A tour will continue from here anti-clockwise around the coast, down through North and South Ayrshire, into Dumfries and Galloway, and north-east into the Borders. The Lothians will be discussed, and then the central-southern areas of South Lanarkshire, East Ayrshire and the Glasgow regions, finally moving north to cover Falkirk, Stirling and Fife.

As the following discussion aims to give a general description of a large number of lithic scatters which are present throughout south and central Scotland, constant reference will be made to a set of map sheets, which are situated in appendix 1 for easier reference. These indicate the location of scatters by number to the nearest 5 km, in effect representing a density of scatters for the area. A reference sheet accompanies the maps.

Argyll and Bute

Argyll and Bute (formerly part of Strathclyde) is one of the largest and most diverse regions in Scotland, with a vast area of coastline winding around the renowned inlets and islands which characterise the west coast of Scotland.

There are over 700 scatters across the whole of the region, with the majority being characterised as mixed Neolithic. Counting mixed scatters as one entity, a figure closer to 400 is apparent. Mesolithic evidence is also common, as the coastal areas of Argyll have many well preserved midden deposits and hence associated scatter sites, especially within the islands where dune systems are ever changing, revealing prehistoric floor deposits (discussed in chapter two).

The main scatter concentrations are on the South Hebridean islands of Islay, Colonsay, Mull, Coll and Tiree (maps 1, 2, 3, 5 & 6; appendix 1). The large number of scatters on Islay (320) is due in part to the recent work carried out by Mithen as part of the Southern Hebrides Mesolithic Project (Mithen and Lake, 1996). The project was established in 1988 with the main intentions being to create a regional study of Mesolithic settlement in the southern Hebrides. The islands included in the study are Islay, Jura, Colonsay and Oronsay. Mithen wanted to move away from looking at single islands, as Mercer and Mellars had done previously (see below) to look at a regional picture and try to clarify problems thrown up by previous work (Mithen et al 1992, 242).

The previous number of known scatter sites on the island of Islay has doubled in the past 10 years, due to Mithen's work. A consistent methodology played an enormous role throughout this project. The extensive fieldwalking surveys, which were carried out as part of the projects diverse fieldworking strategy, recovered a large amount of material over a number of years with a consistent collection strategy being employed. This has resulted in a useful addition to the scatters database, and sets an example to fieldwalking methodologies in the future. The densest number of scatters comes from the lowland areas and coastal fringe, especially around the sites of Gleann Mór, Coulererach and Kindrochid on the west side of the island. Colonsay also has a large concentration from the work of this research project, with Mesolithic scatters being heavily represented.

Earlier work on Jura exposed large concentrations of Mesolithic and later scatters. The main reason for the large concentration of sites on the island is due to the enthusiastic research undertaken by Mercer from 1967 through to the early 1980s. Since his death in 1982 Susan Searight took over the work on the island.

The main sites that were looked at are Lealt Bay (Mercer 1968), Lussa Bay (Mercer 1972), Lussa River (Mercer 1971), Lussa Wood (Mercer 1980), North Carn and South Carn (Mercer 1972) on the north-east coast, and Glenbatrick Waterhole (Mercer 1974a) on the west coast. This latter site lies adjacent to the broad mouth of Loch Tarbet:

> The broad mouth of this magnificent 6-mile (10-kilometre) fjord is open to the Atlantic breakers, but its inner half is a labyrinth of sheltered creeks and islands; these must once have harboured an abundance of wildlife.
>
> Mercer 1974a, 9

The energy and enthusiasm which went into many years of research on the island rings clear from this narrative. Mercer's main aims were to re-construct an environmental, typological and C14 dating sequence for the various sites on the island, which he successfully undertook although many authors have criticised his interpretations (Woodman 1989, 11; Bonsall 1988). Searight continued his work during the 1980s and 1990s (Searight 1984; 1990; 1993).

This research stretches beyond the limits of scatter evidence, as the majority of the material was recovered from excavations. However, thousands of lithics have subsequently been collected from the intertidal zone on the shore of Lussa Bay over the past few years through fieldwalking (Searight 1993, 1).

The shell middens on Oronsay were investigated throughout the same period by Mellars (Mellars 1981), and although little scatter evidence was located, the erosion of the middens and subsequent excavation is relevant in terms of later work by Mithen as part of the SHMP (above).

Mull has not had as substantial a fieldwalking programme carried out on it, and the concentrations around the west coast and on higher ground to the north are an outcome of various individuals fieldwalking on a voluntary basis (figure 3.1).

Douglass recovered a large amount of material from the island during the 1960s, 1970s and 1980s, mostly from forestry ploughing (Mrs Douglass, pers comm): the large amount of forestry plantation on the island has produced a substantial amount of lithic material. It is interesting to note that the scarcity of scatters from the eastern half of the island (map 6) falls in line with the previous discovery of sites. There is a smaller amount of forestry plantation in the eastern part, although the topography is just as marginal, with little arable land save rough grazing. It will be interesting to see the amount of prehistoric material evidence which is revealed if continued forestry planting covers remaining upland areas.

The late Roy Douglass who collected the majority of these finds, worked in the forestry business, and consequently was at hand to retrieve artefacts from newly ploughed land. His interest in archaeology has therefore led to an augmentation of the records from this area.

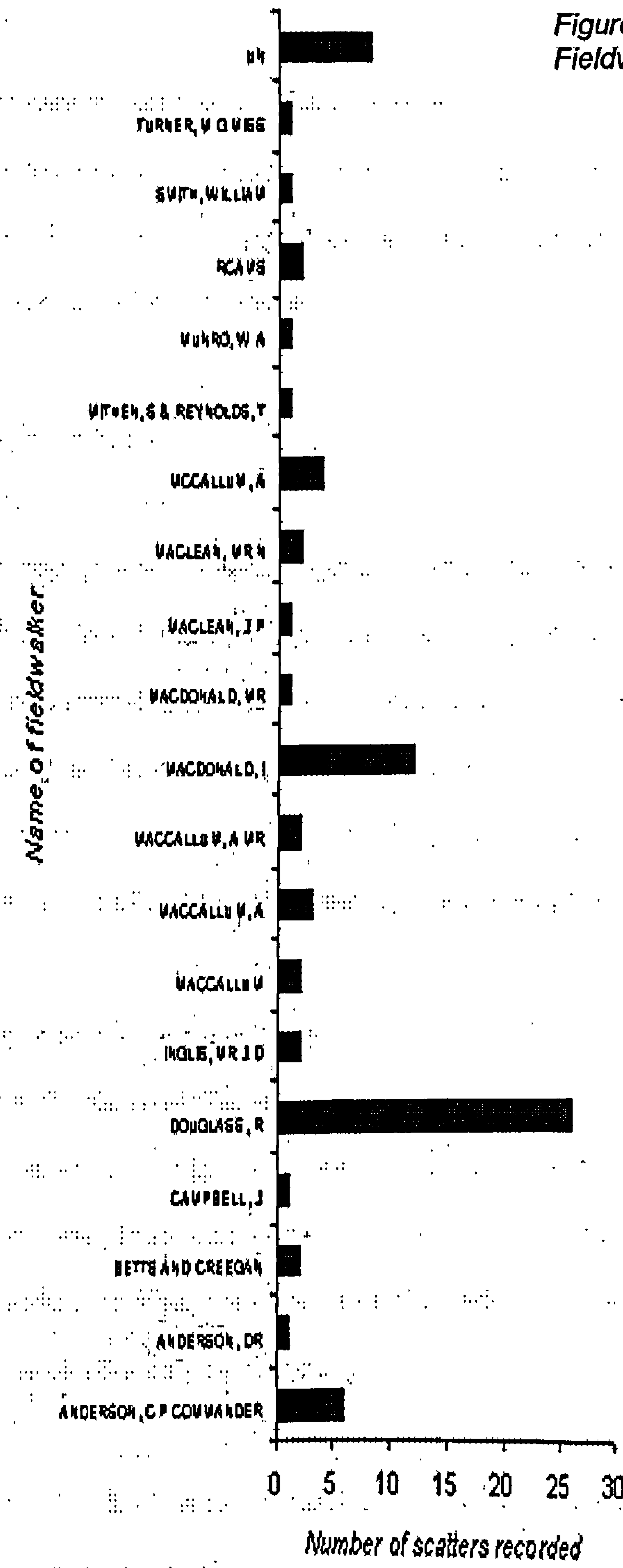


Figure 3.1
Fieldwalkers on Mull

Moving further west, the islands of Coll and Tiree have a smaller number of finds, and these are distributed to a large extent around the coastal zone. The ever-changing dune systems are constantly revealing buried land surfaces, and Erskine Beveridge recorded the majority of these at the turn of the century (Beveridge 1903). As Beveridge states:

> One fact (which, to be sure, cuts both ways) must be admitted, that upon revisiting known sites during a series of years, both as regards Duns and Sandhills (which latter vary in conformation with every wind that blows), some fresh information has almost invariably been gathered.
>
> Beveridge 1903, xii.

More recently, Davis (1968-71) and Crawford (1980; 1997) have also uncovered scatters on Coll. As Beveridge found, large proportions of these show signs of a long tradition of habitation, with well-mixed sites. This is obviously a common phenomenon within most sand dune areas, as constant movement of the dune systems undermines and mixes any apparent stratigraphy (discussed in chapter 2). A more recent publication on John Crawford's finds from Coll include over 3,500 lithics collected by fieldwalking (Crawford 1997).

On mainland Argyll and Bute (maps 4, 5, 6, 9 & 10; appendix 1), the density of lithic scatters is confined to the lowest areas of land, around the coast. From the north of the region, at Oban, the exploitation of marine resources during the Mesolithic has left many shell middens and cave dwelling sites, from which scatter evidence has come. Recent work by Bonsall has uncovered a number of new scatters, and this adds to the growing importance of the Mesolithic in this area (Bonsall, pers comm).

Moving south (maps 5 & 6), a large density of scatters can be seen around and within the Kilmartin valley. This area has always been considered significant because of the number of well preserved upstanding monuments existing in such an enclosed and concentrated area, and the formation of the Kilmartin House Trust in 1994 has increased the awareness of the archaeological and natural potential of the area. Fieldwork by Duncan Abernethy has uncovered new scatter evidence which complements the fine upstanding monuments. Such scatters have been found at Monadh An Tairbh, where over 100 lithics were recovered through fieldwalking a ploughed field (Abernethy 1997, 21) and at Longwalk, where a smaller scatter of flint was recovered (Abernethy 1998, 20). The lack of ploughing throughout the valley restricts the discoveries.

The southern tip of the Kintyre peninsula has a concentration of scatter sites around Campbeltown, indicating the results of local fieldwalking throughout this century on the arable fringes. Fieldwalking uncovered a small scatter of possible Neolithic date from Low Smerby (Barrowman 1997b, 18; Martin, 1997, 18).

> The dog and I spent a few enjoyable hours at Low Smerby on 19th January, fieldwalking with Frances Hood, Wendy Vandome and Chris Barrowman...As we walked from the steading to the southern end of the newly-ploughed field to begin the business, I spotted a tiny flake exposed on the last rig that had been turned and allowed myself the assumption that pickings would be good. Alas ! - there was no other find for me, other than a half of a wally egg, once used for clocking hens...We met Mr and Mrs McNair, who formerly farmed Low Smerby, out for a stroll, and chatted briefly with them. Afterwards, I walked home with Benjie by the shore, gathering coal and driftwood as I went. It was a calm, dry day, a joy to be out in.
>
> Martin 1997, 18.

There is much arable land at the southern tip of the peninsula and extensive surveys prove worthwhile. Members of the Kintyre Antiquarian and Natural History Society undertake fieldwalking in the area on a regular basis, and have found scatters previously in the vicinity (Hood 1994, 52; Martin 1999, 16), although a large-scale intensive strategy may be more beneficial.

It is interesting to note the large amount of forestry plantation along the whole length of the Kintyre peninsula, and the inverse number of scatter sites. This is presumably due to the lack of fieldwalking on these areas after forestry ploughing. Only a small number of isolated finds have been found along the length of the peninsula, these are represented by the 'one scatter' symbols on map 5. Achaglas (NR 711 419) and High Carse (NR 744 625) are typical examples, which were recovered from forestry plantation furrows. Again the lack of finds from large areas of upland under forestry is clear, confirming the problems discussed in the previous chapter.

Isolated finds have also been recovered from the small island of Gigha, but no large scatter sites have ever been recovered here. As far as the author is aware, no prehistoric fieldwalking surveys of ploughed land have been implemented on the island.

Fieldwalking by the author in 1997 in Bute revealed a small number of isolated finds, at Blackpark Plantation West (NS 088 557), Largizean (NS 085 552) and Piperhall (NS 098 584), and a larger pitchstone scatter at Blackpark Plantation East (NS 093 555). This field had a raised plateau in the south-west corner, on which the scatter was defined. Waste flakes and debitage represented the majority of the scatter, probably of later Neolithic date(Barrowman 1997b). The stone would certainly have come from Arran, visible across the Clyde estuary to the south, from the scatter location.

Before commencing the work, scatters had only been recorded from two areas on Bute: at Little Kilchattan where Cormack uncovered approximately 180 Mesolithic flints in one field (Cormack 1985); and near St Blanes where an agate chipping floor was found in the same year by McFadzean (McFadzean 1985). Isolated finds have also been found - one scraper from the Kingarth standing stones and another from Glencallum Bay (McFadzean 1985).

The overall number of later prehistoric monuments on Bute would suggest that there was considerable activity on the island throughout prehistory, and it is surprising that this is not reflected in the lithic record. A lack of any systematic fieldwalking over ploughed land is no doubt a contributing factor to the paucity of evidence.

Occasional isolated finds are scattered across the remainder of the region, many of these have been uncovered by accident by individuals out for a walk, who come across an obvious looking arrowhead eroding from the side of a path or stream. The inner upland areas are void of evidence, which is no surprise when the amount of peat cover in these areas is considered. Only where the forestry plough can take a hold, will possible scatters be sighted, although the discussions above have highlighted already the problems inherent in scatter recovery from these areas.

North and South Ayrshire

These two regions hug the south-west coast of Scotland from the Clyde Estuary in the north to Dumfries and Galloway and the Rhinns of Galloway in the south. There are over 300 scatters in North Ayrshire, with under 200 in the Southern region.

The scatter sites of Ayrshire, and their role within the postglacial situation of the Clyde archipelago, have been discussed frequently in the past (Morrison and Hughes 1989; Saville 1998). The island of Arran (maps 4, 5, 8 & 9) sits dominantly between the southern Kintyre peninsula and the coast of north Ayrshire. It is famous for its upstanding monuments and physical beauty, often being described as 'Scotland in miniature'. Scatter evidence on the island also fits this metaphor: the low lying farming areas to the south are covered in scatter evidence, while the upland areas to the north are void of surface remains, save at Penrioch (NR 877 443), Catacol Farm (NR 913 492) and Sannox Farm (NS 014 455) (Gorman, pers comm). These are marginal farming areas along low lying valleys.

Fieldwalking by members of the Heritage Museum on Arran since the 1980s has revealed large concentrations. Research projects such as these are filling in significant gaps to the surface scatter record across the country. In this case, there is an added advantage and incentive, as the local people who are undertaking the work live and work on the island, and experience the landscape in many different conditions. It is therefore possible to undertake an extensive survey of large tracts of land over a long period of time, working with the farmers as they plough their fields. One major problem which is experienced in fieldwalking projects is the narrow window for gaining access to ploughed fields, and the lack of ploughing in certain areas of the country, such as this. Locals can work at the same pace as the farmer - on a very long-term rotational basis, rather than over a short 3 year interval. Academic research projects, although very successful at implementing good strategies and methodologies, have a lower success rate as they are disadvantaged in working within a shorter time period. Even a five year project does not beat a life time 'in the field'. The advantages of having an intimate knowledge of your locale is invaluable (discussed in more detail in the following chapter).

Much of the scatter evidence discussed in the following sections, primarily that of North and South Ayrshire, and Dumfries and Galloway, has been recorded by local collectors. These collections have been found in close proximity to the homes of these collectors. Peter Woodman has noted this occurrence in north-east Ireland

> When dealing with collections built up by amateurs it must be assumed that much of the material was collected close to the home of the 'antiquarian' or in the case of some of the more wealthy Belfast collectors from either their home or holiday residence...Is the fact that extensive settlement is known from the northern half of Strangford lough genuine or is it because Kirk, who collected most of this material, lived at the northern end of the lough ?
>
> Woodman 1978, 2

He suggests that a bias in collection for certain areas may result in apparent concentrations of prehistoric settlement. This is indeed the case for many areas of south and central Scotland. Only where a local collector has covered a larger area intensively, will a more coherent picture of prehistoric settlement and activity be apparent. Rather than revealing prehistoric patterns, we have patterns of collection by a series of individuals who inhabit the contemporary landscape.

A great number of mixed scatters are recorded from Arran, although large numbers of Mesolithic sites have also been located. Work throughout the past century has uncovered many lithics (Allen and Edwards 1987), and some upland Mesolithic sites were uncovered and investigated in the 1980s (Affleck et al 1989). The work undertaken by Gorman and others since then has increased the number of sites significantly (Gorman 1993, 79-80; Gorman et al 1995), such as at Machrie (NR 898 325) where a prolific Mesolithic scatter has been discovered, and at Kildonan (NR 031 208) where Mesolithic lithics are present in their hundreds.

Looking at the coastal fringe of North and South Ayrshire, a series of three concentrations can be seen, each respecting the lower reaches of the River Irvine, Water of Girvan and the River Stinchar at Ballantrae. The Irvine Bay stretching from Saltcoats to Troon (map 12) is the largest of the three concentrations, with a distinct drop in scatter frequency further south near Ayr and the river Ayr, which suggests a lack of work in this river valley. Concentrations reappear along the coast north of Girvan (map 8), and again at Ballantrae to the south of South Ayrshire.

The three concentrations lie on areas of good agricultural land, which is regularly ploughed. Adding to this, a succession of fieldwalkers have investigated each respective area along this coastline, most frequently throughout the 1960s and 1970s, with Gray, MacFadzean and Macneill being common names within the database.

The sand dune systems of Shewalton Moor, Ardeer and Stevenston sands surround the mouth of the river Irvine. These were discussed by Lacaille in 1954 (Lacaille 1954) where he stated, "Microlithic forms have been collected in all three sandy expanses, but in very small proportion to the immense numbers of relics of later facies left here by generations of settlers" (ibid. 285). Later work further inland along the River Irvine by MacNeill (1975, 58) recovered several lithic scatter sites on the river terraces. Quantities of lithics, mostly Mesolithic

(Morrison and Hughes 1989) have been collected from the Shewalton dunes for over 100 years (Smith 1882; Lacaille 1930, 1940, 1954).

> In the autumn of 1871 I first examined the sands of this portion of the Ayrshire coast, in the hope of finding meteoric stones, my reasons being that if meteors had at any time fallen it might be possible to pick up a few, as the sand was being constantly shifted by the wind, which covered up one part while laying another bare. After crossing some considerable knolls of brown sand, to my delight I came upon various patches of gravel lying in the hollows from which the sand had been blown. This was so much of what I had anticipated, that the search for the meteorites continued...No meteorites fell to my lot; the heavens had been unkind, but the earth was more generous. Instead of meteorites I got a few flints, several of which had evidently been worked by the hand of man into rude implements; some were simply chips, and others regular flint nodules which had never been broken.
>
> Smith 1882, 185.

Much rescue work has been undertaken by GUARD along the Girvan coastline over the past few years (Bain and Leslie 1993; Cullen 1994; MacGregor 1994; Abernethy 1996; Donnelly and Pollard 1998; Donnelly 1999; MacGregor and Donnelly in press) and the lithic scatters uncovered in the process have added to the numbers recovered by Macneill, Gray and MacFadzean during the 1960s and 1970s. The majority of these findings are Mesolithic, found along the heavily farmed raised beaches on this west coast.

> At maximum transgression, the sea must have occupied quite a large embayment to the east and north-east of the present town of Girvan, penetrating to a distance of almost 4 km up the valley of the Water of Girvan...The deposits of the large inland embayment between Girvan Mains and Enoch Farm suggest a lagoon-like body of water, perhaps separated intermittently from the contemporaneous sea by a sand or gravel bar...The sites of concentrations of Mesolithic material are close to, but above,

> the upper limit of the marine transgression, suggesting occupation when the sea level was at or near maximum.
>
> Morrison and Hughes 1989, 9-10

There are large concentrations of lithics at Ballantrae, the last of the three clusters in North and South Ayrshire. The final record entry from the many within the NMR states:

> The distribution of ... sites shows that a sensitive finds area of at least 25 hectares centred at NX 085 817, exists above and below the 50ft raised beach contour. This gently undulating arable land is largely under fallow grass.

Edgar was the first to recognise the presence of microliths at this point in 1936 (Edgar 1939) and subsequent work was carried out by Lacaille (1945), Walker (1955), Gray (1956) and Macneill in the 1950s and 1960s. Mesolithic traits dominate (Morrison 1982), although it is suggested that Neolithic elements are also present.

Dumfries and Galloway

Leaving South Ayrshire, the final stretch of west coast continues down into Dumfries and Galloway, and round into the Solway Firth. Maps 7, 11 & 15 show the main coastal zone of this region, with maps 12, 16 & 19 covering the inland, upland areas. Dumfries and Galloway is unique as it has a good balance of scatter sites stretching from the coastal areas and lower terraces of the main river valleys, to the higher ground, around the Lochs in the Galloway hills.

The most concentrated areas cluster around the edges of Loch Ryan, the Rhinns of Galloway and Luce Bay (map 7). Again Gray in the late 1960s, and MacFadzean in the mid 1980s, are the main contributors to the sites around Loch Ryan, with lithics being recorded from Luce Bay and Torrs Warren (NX 150 550) by a number of individuals over the course of this century. The shifting dune systems along this part of the Solway coast have revealed a large number of mixed material remains. New lithic and ceramic evidence pops up all the time, with recent findings by James Hepher (1999) and Cherry & Cherry (1997). It is not necessary to give an overview of the vast collections from the Glenluce area, this has been done recently (Cowie 1996), only to acknowledge their existence. Cowie states that there are over 8,500 objects from the area in the National Museum of Scotland, with many more being curated in Glasgow, Dumfries and Stranraer (ibid. 14).

River terraces and raised beaches around Loch Ryan and along the Rhinns peninsula have been explored by various individuals throughout the latter half of this century, with much work being undertaken by Gray throughout the 1960s and 1970s. The sites within National Grid squares NX 03, 04, 05, 06 and 07 all have at least one scatter, with over 30 scatters (including mixed ones) from the south and western sides of Loch Ryan. The main sites from the edges of Loch Ryan are at Leffnol (NX 078 657) discovered by Gray in 1969 (Lithic scatters database), Kirkcolm (NW 035 680), where MacFadzean H, M & D revealed a small flint scatter in 1984; High Balyet (NX 087 628), Dalminnock (NX 083 641), and Stranraer (NW 070 612). Again these were recorded by Gray in the late 1960s, and MacFadzean in the mid 1980s.

The high level of agriculture on these peripheral areas of Dumfries and Galloway, combined with an intensive amount of fieldwalking by the likes of Gray and MacFadzean has left a dense pattern of lithic scatters within this area, a concentration possibly created by fieldwalking rather than prehistoric activity.

Extensive scatters occur on the southern half of the Rhinns, at Terally (NX 123 409), Balgown (NX 118 422), Kirkmabreck (NX 106 476) to name but a few collected by Cormack in the early 1960s. Intensive fieldwalking of the ploughed fields behind the raised beach areas along this coast has led to a large number of finds by Cormack here and all the way along the Solway coast since the 1950s (Coles 1962).

The scatters along this coastline (maps 7, 11 & 15) are less dense than to the west, but an almost unbroken chain of sites is evident. Cormack has also undertaken extensive walking along the river valleys of the Nith and Annan (Cormack pers comm) (maps 15, 16, 18 & 19), as the density plots indicate. These areas are capable of producing a very wide range of crops (Bibby et al 1982), and have been ploughed intensively since the mechanisation of farming. Mesolithic sites dominate this area, one reason for this being that Mesolithic settlement was sought after by many of the fieldwalkers involved.

A great deal of work was carried out from 1966-1975 by Ansell, and in the 1980s by Edwards, Ansell and Carter (Edwards et al 1983), and by Affleck (Edwards 1996), further inland at Loch Doon, Clatteringshaws Loch, Loch Grannoch, Loch Dee and along the Water of Ken. Extensive survey of these areas by Edwards and colleagues uncovered many new sites which provided evidence for a wider penetration of inland areas in the Mesolithic than had previously been thought, apart from the findings inland along the Tweed (Mulholland 1970). At Loch Doon the creation of a HEP reservoir had raised the water level and subsequently eroded areas of peat at the new fluctuating water levels. The other sites were found under similar circumstances (Edwards et al 1983).

Development and upgrading of the M74 to the west of this area led to an extensive survey by GUARD (chapter 2; Robins 1993). Three scatters were uncovered and subsequently excavated at Kirkburn (NY 128 829), Beckton (NY 130 824) and Kirkhill (NY 104 926). Scatter concentrations around Lockerbie are a continuation of the work undertaken by Cormack: Daltonhook, Hoddam and Roberthill being Mesolithic sites on the river Annans terraces (Cormack 1961; 1963a; 1963b; 1964).

Many of the scatters from Dumfries and Galloway, and indeed from other areas across Scotland, must be considered within light of the collection strategies employed in the field survey undertaken and with reflection on the recording of types and functions by the collectors themselves.

As the previous chapter considered, the fieldwalking methodologies employed and the experience and ideals of the collectors and recorders affect the scatter record. The dominating representation of Mesolithic scatters in Dumfries and Galloway (figure 3.2) may not be a true picture – many of the local collectors who have accumulated this data have a personal preference for the earlier lithics; hence later diagnostic artefacts may be classed as Mesolithic when they may have been classed as much later by another expert.

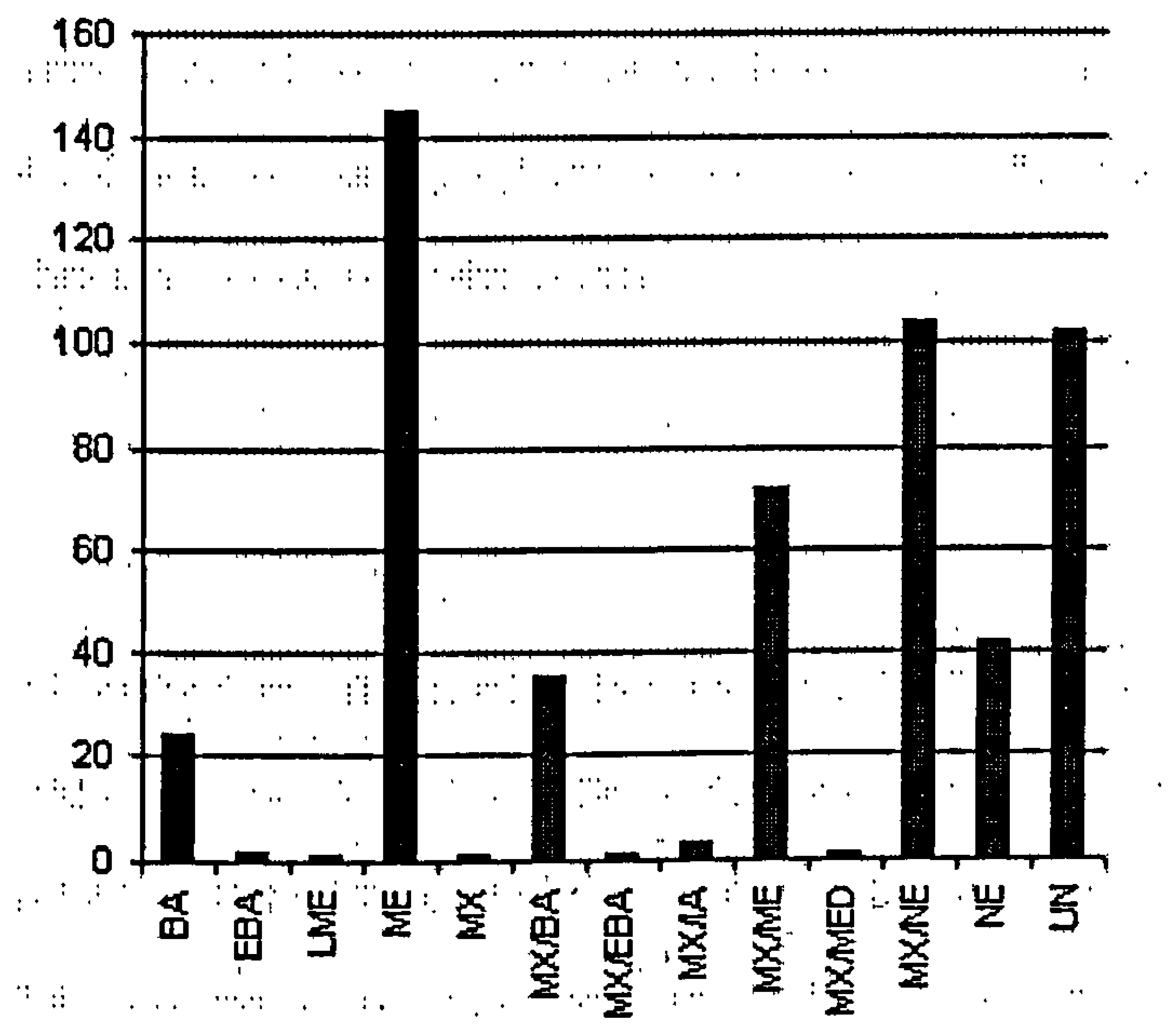


Figure 3.2 Number of scatters by period for Dumfries and Galloway

Similarly, wrongly classifying chips of waste from Neolithic working may create a deluge of microliths. Once the typological frameworks have been set up within a fieldwalkers mind – any subsequent findings of a similar nature (sometimes the boundaries will expand dramatically) will be immediately classed as the same.

> Numerous cases of items misidentified as Mesolithic lurk in the older (and not so old) literature and can trap the unwary
>
> Saville 1998, 213.

The preservation of *true* Mesolithic sites in this area must surely be due to the work of Bill Cormack. The previous findings (above) on the Western seaboard may be explained by a real concentration of intensive Mesolithic activity (Boyd 1982, 17) combined with intensive agriculture and fieldwalking, but many more sites are being found further inland which compare in intensity. A bias has definitely resulted in the coastal Mesolithic of this area, through a combination of enthusiastic fieldwalking specifically in this area, fitting into an expected framework of a coastal Mesolithic. Discoveries in the Upper Clyde valley over the past few years by the Lanark and District Archaeology Society and recently by the author, Lorna Sharpe (Sharpe 1998; 1999) and Olivia Lelong (Lelong 2000), are slowly returning the scales to an equal balance, and giving a truer picture of the density of activity over certain areas of Scotland throughout this extensive period.

Borders

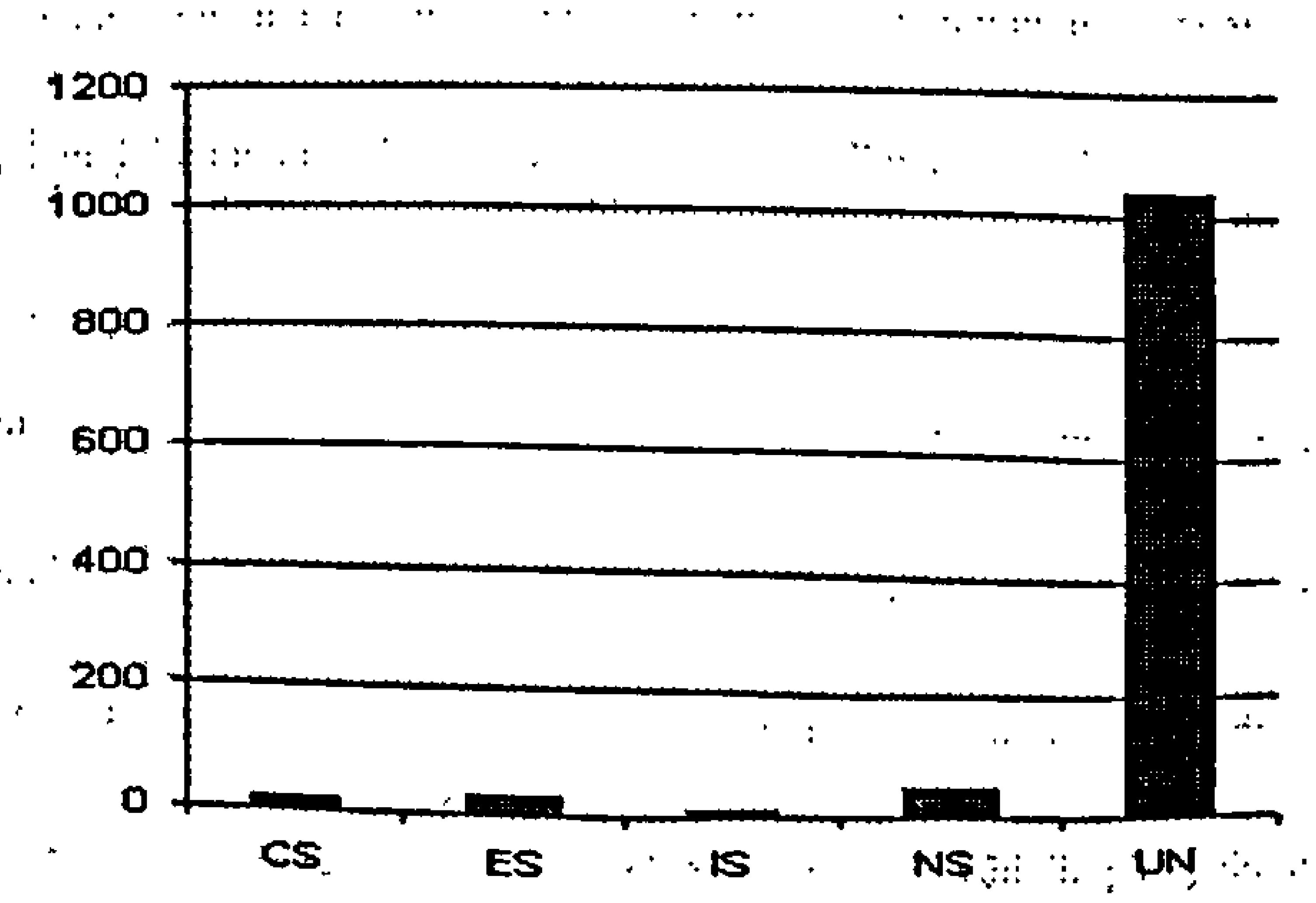
Approximately 1150 scatters are recorded in the database for the Scottish Borders region. This is by far the largest number from the whole of Scotland. A high number of these remain undated (just under half), with the remaining scatters being split between Mesolithic, Neolithic and Bronze Age date. As has been discussed above a high proportion of these are single finds and assemblages discovered at the end of last century and into the beginning of this one. Many finds are unprovenanced for the Borders, and so have been assigned to the farm only, presumably scatters were uncovered from the surrounding fields. There are also a large number of small scatters, which are recorded from the years 1947, 1951 and 1952, of unknown finder or donor in the National Museum and the Hunterian.

The concentration in the Borders region is the largest and densest in the whole of Scotland, although comparisons can be made with concentrations in Aberdeenshire (Stuart in Barrowman and Stuart forthcoming). The reasons for this are no doubt linked to the large areas of fertile land in this area, and the early introduction of mechanised farming in the early 1950s (discussed in chapter 2). This goes hand in hand with the large number of local fieldwalkers who dwelled along the tributaries of the Tweed valley, having a seemingly magnetic attraction to the river and its tributaries. Research in the 1970s by Mulholland complemented these older findings (Mulholland 1970).

A brief description of the topography of this area will explain more fully the density pattern shown in maps 19, 20, 22 & 23 with maps 22 & 23 sharing the densest area of scatters. The arable Border land is contained by physical barriers on all sides: the Moorfoot and Lammermuir hills to the north (map 23), the Cheviots to the south (map 22), the Southern Uplands to the south-west and west, and the coast of Berwickshire to the east.

Over 1000 scatters lie within an area of approximately 900 km^2 situated around Melrose and Newton St Boswells. This main concentration of scatters lies almost wholly within the county of Roxburghshire, with a north westerly spread into the Merse of Berwickshire. It is mainly the Tweed and its tributaries, which influence the number of sites here, as the majority of them can be found along its course. This Merse land has a high land use classification value, where "cropping is very flexible and a wide range of crops can be grown..." (Bibby et al 1982, 13). The area has one of the best physical basis for agriculture in the whole of Scotland, and it is possible that the intensive farming and ploughing which has occurred over the past 50 years, linked with the amount and concentrated efforts of fieldwalkers over the past century, may reveal true prehistoric activity patterns. Unfortunately it is difficult to assess the quality of the information for the majority of these scatters, as shown figure 3.3. Little information is known concerning the standard of collection of these scatters, and tragically, this knowledge has gone with the demise of many of the collectors.

Figure 3.3 Number of scatters by scale of collection for the Borders



The farmland in large parts of this area came about during the agricultural improvements of the 18th century (chapter 2; RCAHMS 1956), and a greater proportion of the Merse lands would have been moorland and forestry during a large part of prehistory. The Tweed would have been an advantageous route into Scotland from earliest times, and so it would seem that a concentration of sites and accumulation of lithic material would occur along this route. Intensive farming over the past 100 years has unfortunately destroyed any semblance of stratigraphy, and hence material deposited through time has become mixed. Mulholland succinctly describes the situation:

> Due to the enthusiasm of local collectors in the Border countries, Mesolithic material has been recovered from over one hundred sites in the valleys of the River Tweed and its tributaries...The majority of sites are on sloping ground close to a river, or burn, and all lie between the 150 ft. and 1000 ft. contour lines. The absence of material from higher ground must reflect the lack of agricultural activity in these areas; the absence of sites from the lower land may be accounted for by the depth of material accumulated in the main valleys since Mesolithic times or by the inference that climatic conditions during the Mesolithic period, possibly waterlogging, rendered these areas unsuitable for habitation.
>
> Mulholland 1970, 81.

There are many *large* scatter sites present in this region. This is no doubt due to the high number of fieldwalkers who have walked this area, creating a possible bias in the results. Other areas in Scotland from which possibly smaller scatter sites are located may indeed grow into larger scatters as subsequent walkers collect material from these spots.

The concentration consists of a central core over an area of sixteen 1:10000 map sheets (NT 53, NT54, NT63 and NT64). These scatters consist of a number of large sites, and several scatters. A lower density of scatters surrounds this core the whole of its circumference, with levels gradually dropping off from the centre. Map 22 shows these levels falling steadily over a distance of approximately 20 km, with 5-6 scatters around Hawick, and smaller numbers south of here as higher ground is reached in the Cheviots.

To the north-east (NT75NE) there is again a high number of scatters, with an abrupt line created by the Lammermuir Hills. Surprisingly numbers are low within Berwickshire, where farmland is again of high quality.

The south-west part of this region is also relatively sparse compared to the central area. A few scatters are present around St Mary's Loch and along the Yarrow Water, with a connection further north to the Tweed sites once again, around Innerleithen (NT33). From here a strong westerly line can be seen, moving into South Lanarkshire.

Constant reference is being made to bias in the records as presented within the database and by the distribution maps. It is obvious that this information is made up of a number of different factors, some of which were discussed in the previous chapter, and others here. The background information about standards of fieldwalking and recording discussed here is just as important as the final data situated in the database. The difficulties inherent in data collection and compilation will be clarified in the following chapter, suffice to say that throughout this chapter, the people who have collected these scatters can be glimpsed.

South Lanarkshire

As the route of the Tweed winds westwards to its source, so do the density of scatters, following the river terraces and most arable areas into the Upper Clyde Valley (map sheets 16, 17, 19 & 20). The fertile soils of South Lanarkshire have revealed a large number of scatters. Many of these can again be dated to the first part of this century, but there has been a considerable amount of systematic fieldwalking undertaken by the Lanark and District Archaeological Society over the past ten years. Fieldwalking by the author in the Southern Pentlands area has also increased the number of previously known sites (this will be discussed in detail in chapter 8).

The highest densities can be found to the south of the Southern Pentlands (discussed below), and these extend further south around Biggar (map 16). The Lanark and District Archaeology Society have uncovered the majority of these scatters, since the early 1990s, and the concentration in this area is partly an outcome of this fieldwork. However, the discrete concentration is also formed by the topography of the region, bounded to the north by the Pentland Hills and the south by the Southern Uplands. This concentration disperses north east towards Edinburgh, skirting the slopes of the Pentlands along a strip of arable land within the Borders (see above) and into Midlothian.

The southern areas of South Lanarkshire are also less dense, although there is a smaller line of scatters following the route of the past and present workings of the M74 upgrade. These were again recovered by the Lanark and District Archaeological Society, with subsequent rescue work and survey undertaken by GUARD (see above).

The land around the lower reaches of the Clyde as it flows towards Glasgow has undergone industrial development for the best part of this century, and much archaeology must have been lost, especially where scatters are concerned. Consequently, a sparsity of finds is indicated on map sheet 13. As Wickham -Jones states "Mesolithic flint scatters are hard to spot in the construction of a steel mill" (Wickham-Jones 1994, 64).

East Ayrshire

To the west of the Upper Clyde concentration, and between the regional boundary of South Lanarkshire and East Ayrshire, there are large numbers of scatters along the Avon Water, Powbrone Burn, and Glengavel Water, main tributaries of the Clyde (centring on grid square NS63 - map 12). These sites were discovered through fieldwork undertaken by Hugh McFadzean around 1984 whilst investigating gravel workings and the cutting of new river channels (McFadzean 1984a; 1984b). One noticeable area, which has little scatter evidence, lies along the course of the Douglas Water, another main tributary of the Clyde, which meets the river Ayr to the south-west. The upper reaches of the River Ayr and the Greenock Water have very few scatter sites along their course, and it is an interesting anomaly considering the number of sites found by MacFadzean in similar environments to the north.

> I do believe if you remain in the same place long enough in most areas you will turn up something. After spending 15 years at my present location I found one chert cylindrical core while digging out a persistent, deep-rooted, garden weed !
>
> McFadzean, pers. comm.

The large expanse of East Ayshire holds over 60 scatters, but these are concentrated in two locations, the first mentioned above, and the second equally as dense, around the Loch Doon sites at the southern tip of the region. These upland Mesolithic sites recovered by Edwards, Ansell, Carter and Affleck have been mentioned above, as they fall on the north border of Dumfries and Galloway.

City of Glasgow and surrounding regions

The heart of the central west coast is made up of seven regions, these being East Renfrewshire (map 13), Renfrewshire (map 13), Inverclyde (maps 9 and 13), Dumbarton and Clydebank (map 13), East Dunbartonshire (maps 13 and 17), North Lanarkshire (maps 13 and 17) and the City of Glasgow (map 13). There are small groups of scatters (between 2-5 in each group) spread evenly throughout this area.

It is more logical to discuss the density distribution of these scatters by map sheet rather than by region, as the political boundaries within these areas are small and scatter densities lie over many of the divisions (see maps).

Maps 9 and 13 share both halfs of Inverclyde. This region faces onto the Clyde estuary and overlooks the Cowal peninsula, affording excellent ground for access to the Clyde itself. Over sixty scatters are spread across this small area, and have been uncovered since the 1950s.

These sites have mainly been uncovered by local walkers and individuals, mainly MacKinnon during the 1960s and Newall throughout the 1950s and 1960s. The agricultural margins of Loch Thom and Gryfe Reservoir have revealed a number of scatters. The densest cluster of scatters lies to the west of Kilmacolm, around Lawpark farm (NS 34 68).

Map sheet 13 holds Renfrewshire and East Renfrewshire, which skirt the south and west of Glasgow City. Small numbers of scatters (2-5) are dotted to the south-western parts of these two regions; the urban sprawl of the City encroaches on the north-eastern side.

To the north of the Clyde, Dumbarton and Clydebank, also on map 13, extends northwards to Loch Lomond and the southern Highlands. The Kilpatrick Hills and Dumbarton Muir dominate this area, and the lack of dense scatters is no doubt a result of this. The same note is held for East Dunbartonshire and the Campsie Fells. Only light evidence is present here.

North Lanarkshire completes the circuit around the City of Glasgow, and the results of urban development may again be the cause of so little evidence.

These patterns may be described as a 'background scatter', which runs throughout all the Lowland areas of Scotland, stopping only where work has not been carried out or development has destroyed any evidence before archaeological investigation was carried out (this is assuming that scatters exist across the whole country). Certainly within the confines of the City of Glasgow, there are only three scatter sites, two of which are single finds. Individual fieldwalking has recovered certain concentrations, as at Inverclyde, but this fieldwork may possibly be lacking for the other areas. Certainly there is no shortage of development to uncover scatters if they exist, especially where recent work along the M8, the route of the central belt sprawl, is concerned. It seems that the majority of this development passed archaeology by, as much expansion in the central belt occurred pre-NPPG5.

The Lothians

The Lothians cover four regions: West Lothian (maps 17 & 20); Midlothian (map 20); East Lothian (maps 20 & 23); and City of Edinburgh (map 20). The City of Edinburgh has a surprisingly high density of finds compared to the City of Glasgow, a statistic reflected in the size of the museum collections held by each respective city.

Highest concentrations are present within East Lothian. Lacaille (1954) discusses the coastal dune systems of Hedderwick, Gullane and Dirleton, and the prolific finds from these areas are recognisable from maps 20 & 23. Richardson uncovered a vast number of finds from these areas during the 1940s and 1950s, although many of them have vague grid references (all finds from Hedderwick centre on NT67NW 67 78) The nature of sand dune finds is obviously circumspect even with the finest of recording.

Falkirk and Stirling

There are surprisingly low numbers of sites in the Falkirk region (map 17) and Stirling (map sheets 13, 14 & 17). Carse Clays heavily dominate the land around the Forth valley, which are made up of various post-glacial sediments, and form the rich agricultural land stretching from Gartmore in the west to Falkirk in the east. Peat formation soon after the last glaciation covered most of this area, and it was only in the late eighteenth and early nineteenth centuries that much of the peat was cleared off and floated down the Forth, and the land reclaimed for agriculture (Timms 1974). This may explain why there is a distinct lack of lithic scatter evidence on the low-lying areas.

In the Falkirk area there is an additional problem. In the seventeenth century, flint ballast was deposited along the coast to such an extent that the Scottish Parliament had to outlaw the dumping of flint along the main navigation channels. By the eighteenth century this material was being used to raise the levels of low-lying Carse land, and to fill in some of the old meanders of the Carron and Avon rivers. Hence, much plough-split and frost shattered flint can now be recovered from fields as far inland as Bainsford, north of Falkirk. Fieldwork by Bailey in 1996 at Langlees produced such dubious flint scatters (Bailey pers. comm.).

Despite the less than ideal environment for the existence of scatters in Stirling, there has also been a distinct lack of previous systematic fieldwalking in the region. The middens recorded by Sloan in the 1980s (Sloan 1982; Sloan and Murray 1980), coupled with whale skeletons from the Carse Clays (Wickham-Jones 1994, 69) are the only significant findings from this century.

Clackmannanshire and Fife

Moving east into Clackmannanshire and Fife (map sheet 17, 20, 21 & 24), higher densities of scatters can be seen. Clackmannanshire has a dispersed spread of small numbers of scatters. These actually refer to single finds, mostly from the later period of prehistory under examination, the Bronze Age.

The densest concentration of sites in Fife is mainly confined to the north east coast, due to the work carried out at Tentsmuir and Morton farm (Candow 1989; Coles 1971; Coles 1983). Fieldwalking by Henderson in the late 1960s and 1970s, and more recently by Candow has added many sites to the record. Morton lies within the Tentsmuir sands area of north-west Fife, and as Coles points out the sands are, "...a prolific source of late prehistoric and early historic finds..." (Coles 1971, 284). Candow discovered the lithics at Morton from molehills and eroded land in 1957, and continued to collect material from the surface until 1963, when he started excavations. Coles continued with the excavations from 1969 - 1970 (Coles 1983, 9).

There are under 200 hundred scatters within the Kingdom of Fife, and the majority of these surround the north-eastern corner, centring on Morton, and Tentsmuir sands. Over 70 scatters lie in this area. There is a spread of smaller numbers of scatters to the south west of this area, lying around map squares NO31 and NO41. Many of these finds are badly provenanced however.

Tentsmuir is a very fragile sand dune environment. Carter's recent synthesis and interpretation of the area admits that the whole history of the sands is documented at present "simply by a mass of artefacts" (Carter 1997, 1). This situation is typical of coastal erosion areas, as discussed in chapter 2.

Smaller numbers of finds lie to the south on map 24 (NO50, NO51). These are represented mainly by single, stray finds, rather than any larger scatters. Obviously there is a large concentration of Mesolithic scatters recorded within the Tentsmuir area (NO42 - map 21), but as Carter says in his recent report, this is not typical of the Tentsmuir area as it did not exist during the Mesolithic, and it is only since the Neolithic that settlement has occurred on the coast (Carter 1997, 1).

Conclusion

Although the contents of the database and the appearance of the map sheets look very authoritative, and give the impression of a systematic and well structured dataset, it can be seen that enormous levels of bias are at play throughout the formation and collection of this information.

The scatters have been collected and recorded by a whole suite of individuals ranging from local collectors to professional archaeologists, each with their own separate agendas and standards. When brought together in a similar format, this information may appear to give reference to prehistoric settlement patterns and activity. In reality, we have the patterns of collection and recording throughout recent history.

When the influences which were discussed in chapter 2 are brought into account, it is clear that an enormous level of bias is in operation. Concentrations of scatters occur around areas of regular ploughing, where local collectors live or visit, or where research projects take place.

Some fieldwalkers have an obsession with specific periods or types of artefact, a relatively common practice at the turn of the 19th century by antiquarians. What appear to be small scatters may transfer into larger ones, as more collectors scour the same soil, pockets bulging (see chapter 6).

This bias is only visible when the information given throughout this chapter is described. Although some of this information is available within certain fields of the database, we must look further, referencing original sources and papers to understand more fully the information as it stands in the database. By looking at the database alone, a mistakenly polished set of data is given.

The following chapter will consider this problem in more detail, discussing the problem with data, and suggesting that the construction and interpretation of archaeological information should be brought up to date with current thinking within the social sciences.

Chapter four

The known facts you could count on your fingers

> The body was released for burial. It was flown north and buried in the family vault. The press was not invited. Nobody gave any interviews, least of all Mr Harlan Potter, who never gave interviews. He was about as hard to see as the Dalai Lama. Guys with a hundred million dollars live a peculiar life, behind a screen of servants, bodyguards, secretaries, lawyers and tame executives. Presumably they eat, sleep, got their hair cut, and wear clothes. But you never know for sure. Everything you read or hear about them has been processed by a public relations gang of guys who are paid big money to create and maintain a usable personality, something simple and clean and sharp; like a sterilized needle. It doesn't have to be true. It just has to be consistent with the known facts, and the known facts you could count on your fingers.
>
> Chandler (as the voice of Marlowe) 1953, 70.

Introduction

The previous chapter considered the people who found and recorded the surface lithic scatters across south and central Scotland, and the distribution of these scatters as represented by the lithic scatters database. It was attempted to show who found the scatters at each specific point, and when their work was undertaken. These accounts used the information held within the fields of the database, but also went beyond this information, referencing accounts of the work where they were available. A proportion of bias was described, which was only made obvious by describing the individual work, rather than referencing the dataset. It was made clear that the apparent 'facts' of the database need emphasising by reference to the people who found the scatters in the first place.

This chapter will outline the problem with the data, and show that personal experiences must be documented to place the data within a social, historical and cultural context. As well as the processes at work behind the creation of the lithic scatters, the construction of the database itself will be examined.

The problem with data

Throughout the fieldwork process, be it survey, fieldwalking or excavation, it has become routine practice today to consider information collected as somehow embodying a level of objectivity, which is then subjectively interpreted at a later date, usually during report writing (Hodder 1999, 83). 'Self-evident' data are described in neutral terms. Descriptions are timeless and beyond history (Hodder 1989d, 271). This separation "...of the theoretical from the dirt-digging archaeologist..." (Shanks & McGuire 1996, 77) has been heavily influenced by the rigid scientism of the New Archaeology.

To accept the information held within the database as objective 'fact' would be perpetuating this polarization. The fields would be empty of people (figure 4.1). To avoid this, we must look at this antinomy in more detail.

Hodder argues (Hodder 1986; 1989d; 1997; 1999) that there has been a 'side-stepping' of the fundamental understanding of interpretation when describing data (1999, 83). The evidence does not exist by itself (Carver 1989, 667). Hodder suggests that the management of information during the 1970s and 1980s has rigidified the system:

> The handling of large amounts of data led to the use of highly codified and rigid computerized recording systems. In order for such systems to work, it had to be assumed that data gathering could be separated from and be prior to interpretation.

Figure 4.1 Empty fields

> Another important factor was the development of contract archaeology and the resulting systematization of method.
>
> Hodder 1999, 83.

As the gathering of 'data' increased throughout this period, the need for speed and efficiency took over within a developer funded environment (Chadwick 1999, 3). Unfortunately this has an adverse effect on the quality of the information gathered during fieldwork, as interpretation is not seen as part of the data, and the *process* of excavation is hardly recorded at all. Clients want facts and answers, and fast.

Even the 'single context recording system' as devised by the Department of Urban Archaeology in London in 1975, has its problems and cannot entirely fulfil this requirement. Essentially, it allows excavators to create the site in their own terms, giving control and responsibility to the individual excavators. However, as many have described (Adams & Brooke 1995, 102; Bender et al 1997; Chadwick 1999) this system forces excavators to fit feature descriptions into specific categories, where a more flexible approach would be preferable. Again, the process of excavation is not recorded, and it is during the process that interpretations are made, and alterations made to the thinking behind the recording. The significance and meaning of the material culture is interpreted through contemporary activity. As Tilley states:

> The meaning of the past does not reside in the past, but belongs in the present. Similarly, the primary event of archaeology is the event of excavation or writing, not the event of the past. Consequently, the archaeologist is not so much reading the signs of the past as writing these signs into the present: constructing discourses which should be both meaningful to the present and playing an active role in shaping the presents future.
>
> Tilley 1989c, 192.

Tilley stresses the importance of the event of excavation, with the *process* being reiterated.

Solutions

Hodder argues that data "...can be defined as a set of dynamic, dialectical, unstable relations between objects, contexts and interpretations" (Hodder 1999, 84). Rather than using *a priori* assumptions to define these instances and the relationships between them, we must understand that interpretation is occurring at every moment, and that "...everything depends on everything else in a hermeneutic circle" (Hodder 1999, 88). With post-processual ideas warranting an understanding of the past from personal, cultural and political perspectives, many archaeologists now appreciate the influence that process has over data, and consequently the stories they tell.

It is important to understand that processes must be looked at, to come to terms with the creation of the data. These processes have been considered by Adams. He discusses the fundamental procedures involved in archaeological inference, and views "...all the attributes of an archaeological entity as belonging to one or more of five sets of attributes: culturally enhancing, culturally reducing, environmentally enhancing, environmentally reducing, and operational (reducing)" (1991, 2).

The operational attribute defines the characteristics conferred on an entity during the process of archaeological enquiry. He concludes "...that the importance of the operational attribute is such that we, the archaeologists, must accept the responsibility for the material result of any archaeological enquiry." (ibid. 9-10). Although his terms and narratives are somewhat convoluted, his recognition of the formation of an approach in which, when recording archaeological 'attributes', we should acknowledge the problems of relativism by "...assessing the effects of variation due to human behaviour on the data, and the meaning subsequently conferred on this data" (ibid. 10) by the recorder, is substantial. In other words, each individual who has a direct relationship with an archaeological 'attribute', must be aware of that relationship and record various aspects of it.

In a later paper which advocates his ideas practised by the Durham University professional field unit, Adams develops his theories with Carole Brooke. They sanction a method of recording which builds "...relativistic humans into our strategies" (Adams and Brooke 1995, 93). They understand that there is no 'truth' to be discovered from the material evidence and context records that archaeologists create; we shape our own pasts, it is entirely dependant on contemporary social, political and cultural perspectives (ibid. 94). With this in mind, they feel that archaeologists should be concentrating on the interactive nature of the enquiry itself, the procedure of recording throughout the excavation process, so as to understand "...a wider range of patterns in the behaviour of entities, information, and archaeologists themselves" (ibid. 99-100). Archaeologists should open up to the subjectiveness of interpretation. This method of analysis is being practised as mentioned above at the unit which Adams directs in Durham.

> The system...is a reworking of the traditional single context system with some important additions aimed at providing a wider range of information which can be statistically analysed during post-excavation...[the] strength of the system relies on explicit recognition of formation process traits on site at the time of excavation...The system asks: 'was the archaeological entity more like this than that?'"
>
> Adams and Brooke 1995, 102

An important aspect of the on site recording is the assessment of the quality of the information recorded by the excavator, allowing the excavator to interpret from their own results how sure they were about the way they had recorded the archaeological deposits. The authors conclude that their approach is "...a radical departure from the scientific orthodoxy in British archaeology which stresses the objective nature of recording and insists that inferences are drawn from a site archive based on 'facts'" (ibid. 103). In this way, reflexive methodologies are created, incorporating a 'fluidity in the relationship between object, context and interpretation' (Hodder 1999, 93).

Many recent authors have encouraged this form of recording (Chadwick 1999; Hodder 1997, 1999; Richards 1995b). Chadwick especially has written a good summary of the most recent views on reflexive methodologies. He takes a recent paper by Hodder and extends his advocation for reflexive methodologies which are being practised in the excavations at Catalhoyuk (Hodder 1996). As Chadwick writes:

> The aims of a truly reflexive excavation methodology must surely be to put the individual archaeologist at the forefront of a recursive, interactive web of interpretation and discussion. Only such 'ground up' approaches will be effective and have the most chance of being experimented with, for the real challenge will be to pursue these suggestions within the context of developer-funded archaeology, or on smaller-scale evaluation or research projects. One way to do this may be to rethink those two canons of contemporary excavation - the stratigraphic matrix and the context sheet.
>
> Chadwick 1999, 8

Chadwick and members of the Archaeological Research and Consultancy rescue unit at the University of Sheffield (ARCUS) are currently creating a context sheet along the lines of the one used by Adams in Durham, where the subjective nature of the excavation process can be recorded (the 'perceived inference potential' Adams and Brookes 1995, 102). In this way, *biographies* of stratigraphic units can then be built up and related to the archaeologists working on them, and the finds information. The aim of the exercise is ultimately to provide a 'thicker description' (Geertz 1973).

Other fieldwork recording and reports are taking similarly positive steps to change the way we record the archaeological process and handle the information accumulated *in practice* (Bender et al 1997; Hodder 1996, 1999; Richards 1999; Wickham-Jones & Dallard 1998), albeit in an academic situation funded by research grants and sponsorship deals.

As Bender et al have shown, "...the daily process of excavation generates alternative site histories which are subsequently abandoned, forgotten, perpetuated or transformed" (Bender et al 1997, 147). Writing in their Leskernick fieldwork report, they emote a sense of process and try to record a variety of aspects concerned with the surveying and excavation processes. As they state:

> The text is not an interim report, but a narrative, which we hope will raise questions about the way current archaeological fieldwork scripts are written: rarely recognising a plurality of conceptual perspectives and the importance of accounting for the development of different interpretations during the time of fieldwork.
>
> Bender et al 1997, 147.

All this recording makes for a large amount of information, which in report form may be impractical. A written report which tries to deal with a vast amount of information also poses difficult in terms of retrieval of specific information. Hodder discusses the benefits of multi-media technology (Hodder 1996; 1999) and realises that the use of the internet to provide instant access to specialists information and to allow diary updates, is ideal. Ultimately the circulation of different types of data and information is necessary to achieve a more recursive archaeology.

Similar views have been made elsewhere. Shanks and McGuire discuss the possibility of experiencing archaeology as a craft, and in so doing, bringing together a variety of elements of it. The solution to a separation between theory and practice is to consider practice:

> The craft of archaeology unifies all archaeologies but does not reduce them to a single thing. Archaeology as craft must lead to multiple archaeologies and diverse archaeological products as it enters into dialogues with different interests and communities. As such, archaeology has a practice, a topic, and obligations, but no necessary methodology. The craft of archaeology has particular responsibilities to

> both past and present, rooted in the character of archaeological experience and not in an archaeological rule book or cookbook.
>
> Shanks and McGuire 1996, 83.

Shanks has previously intimated the importance of the rhetoric contained within the process of excavation, and that it is this that forms the data and records (Shanks 1992, 130). It is the story which comes from the experience of excavation which is left out of so many 'polished versions of the past' (Bender et al 1997, 150). It is this experience which realises that data are constructed through practice and self perception, rather than existing separately as pre-supposed 'facts', as we saw in the previous chapter. When this is accepted, we can see why there are major flaws within the lithic scatters database if it is construed as objective entity or record, and that it is important to consider the processes at work behind the information there.

These themes relate directly to work undertaken by sociologists since the 1970s (i.e. Bourdieu 1977; Giddens 1984). I will not endeavour to summarise their works here, as this has been done frequently and succinctly by others in the past (Bender 1998; Thomas 1991) suffice to give a related example of recording works in practice. Bourdieu gives an account of an experiment concerned with revealing a more reflexive method of recording, by describing the format of a sociological journal he helps edit in France:

> *Actes de la recherche en sciences sociales*, which publishes a wide range of writing formats, from polished articles to "rough" accounts of work-in-progress, accommodates different styles, sizes and type fonts, and makes extensive use of pictures, facsimiles of primary documents, excerpts from field notes and interviews, along with statistical tables and graphs. The typographical, rhetorical, and stylistic innovations of the journal are premised on the idea that the substance and the form of a reflexive sociology are intimately linked, and *that the manner in which a sociological object is elaborated is at least as important as the end result of the*

research process [my emphasis]. As the name of the journal itself indicates, the "research acts" matter as much, if not more, than the finished product.

Bourdieu & Wacquant 1992, 65.

We can see that the process of creating 'data' must be recorded to understand fully the interpretive processes involved. This bears enormous relevance to the contents of the database.

The 'facts' of the database

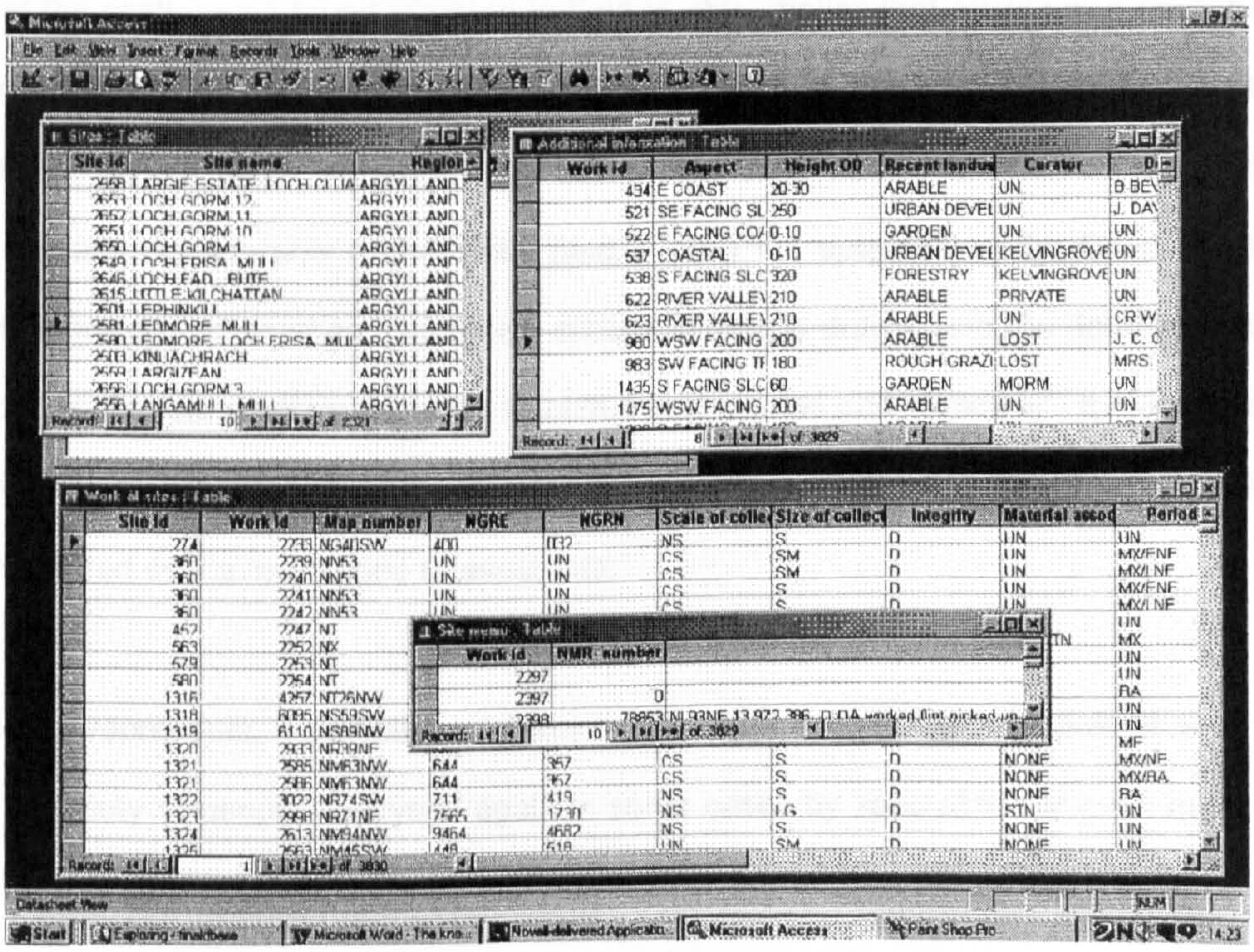


Figure 4.2 The facts of the database

The database contains thousands of recorded scatters: the information contained within each record has been taken directly from a variety of sources (appendix 2), some of which originated as the first record by the fieldwalker, others have been transformed many times by curators and specialists. This information has then been subsumed into the specific structure of the lithic scatters database (figure 4.2).

In effect, the information has been catalogued anew, sometimes many times as various people interpret the evidence in their own way. The input of data throughout this research project has taken information from a variety of records, and broken it down into constituent parts. There has therefore ultimately been some degree of selectivity and bias involved, but an attempt has been made to retain the mark of the original records. Where one piece of information is divided between more than one field, assumptions have to be made about the information, therefore increasing the chance of biases occurring in the overall pattern of results.

One example can be seen by looking at the *integrity* field. If the source of information has stated that the scatter was found 'situated in field x', this implies that other fields have been walked in the area and therefore the scatter within 'field x' is discrete, as no other scatters are cited to adjacent fields. However, this assumption may not be correct, as the scatter possibly spreads considerably further than 'field x', only not detected by the finder. Certain biases will therefore occur when descriptive statistical data is drawn from the database, such as 'number of discrete scatters from the Neolithic in Dumfries and Galloway'. It is extremely difficult to create assumptions from the original source material, and in many cases a field has been entered with a 'null' value to avoid this.

The database represents. a collection of many 'facts' about lithic scatters, walked at different times by a variety of people, analysed again in some cases by specialists, or even museum curators, who in turn put their mark on the information. Interpretations are then made by the authors of the database. The database is set out in a specific format in an attempt to describe specific aspects of the scatters, which are recorded to answer questions related to the lithic scatter resource (as outlined in chapter one). These records can be seen as cauterised snapshots of individual(s) (fieldwalkers, lithic specialists, museum curators) experiences, amassed together within one volume. Final interpretation of the data is then made by the reader of the database. Without knowing fully where the information is taken from, or how it is assembled, misinterpretation results.

The database as a construct

> ...any database is a construct, and it is important that the user understands it as such. The user of the database has to be able to situate it within its own context of production.
>
> Hodder 1999, 191.

What we must realise is that the information held within the database is constructed from a variety of different sources, and in some cases this information will have been interpreted and reinterpreted by a combination of fieldwalker, recorder, specialist and curator in turn, over and over again. The sources themselves contain information which has been interpreted by the fieldwalkers as described above. We have no record of how this information was found in the majority of cases. Even when we do, it is impossible to tell how the finder felt or what interpretative thought processes they were experiencing when coming to an interpretation of the objects (Bender 1998). Additional fields to the database would be ideal in the future, such as limited diary entries from when the scatter was walked taken by members of the fieldwalking team. These would link to the material component of the interpreted scatter record and enable the viewer/ researcher of the data to understand the processes at work behind the recording of it. A combination of the experience of the process of fieldwalking, and the accumulated data from a variety of sources, is the best possible run up to any interpretations of the past. A typical pro forma sheet was shown in chapter 2.

The type of narrative which was given in chapter three allows the people who collected the information to be present in the text, but does not allow us access to the processes of fieldwalking as they experienced it. A narrative written by Angus Martin was quoted which intimates feeling and a certain degree of emotion behind the act of the fieldwalking. However, these descriptions at best only give a distribution and history to the processes of fieldwalking. Ideally, a description of the actual process of the walking itself would give more information. Recording sheets such as the one in chapter 2 allow a certain amount of experiential information to be reiterated. However, it is suggested that a more coherent record is created, describing the whole experience through the use of personal narratives and an intimate documentation of the process. Personal narratives have been recognised before as having a contextualised and contingent nature (Hodder 1989d). Antiquarian site reports were written in a style very different from the ones used today, allowing a personal narrative to describe the actions, intentions and interpretative thought process to be revealed. The meaning of the site or artefact is linked to the circumstances of recovery in these instances (Hodder 1989d, 270).

Despite the criticism aimed at the database, it is still an invaluable and powerful resource describing a number of scatters as they have been interpreted by the authors, across the whole of Scotland (or in this case south and central Scotland). Although descriptive categories such as 'period' and 'function' should be taken with caution, we must accept the data as it stands, and move on to produce interpretations with what we have. Only over time can the information be expanded and clarified.

By relating personal experiences gained from specific fieldwalking (chapter 6) or subsequent work (chapter 8) to the information contained within the database, it is possible to create interpretations about prehistory from the data and insert a social dimension.

Creating stories

The practice of fieldwalking creates a known past – known and understood by the people who create the records of the scatters through walking fields on a regular basis. Fieldwalkers are creating their own past, and consequently their own identities, from present activities: "Practice feeds into structure" (Bender 1998, 164).

It is from the actual experiences of fieldwalking, that the story of the past may be formed, when combined with the variety of collected data within the database.

> Ethnographies are tales or stories not in the sense that they are fictional but in that the writer uses standard literary conventions...to "construct" from fieldnotes a narrative that will interest an outside audience. Such tales weave specific analyses of discrete pieces of fieldwork data into an overall story.
>
> Emerson et al 1995, 170

The database as it stands represents a skeleton of information, apparent 'facts' hang barely onto this structure in a poor imitation of flesh. The real muscle can only be found through the personal narratives and experiences of the people who found and recorded the scatters through time. When these are examined and accepted, the database contents can be understood as a result of a variety of experiences and processes, and used positively to aid interpretations of the past.

To weave an interpretation through all the information available, picking various bits up and imaginatively playing with a variety of situations, is a necessary step within the interpretive process. The whole is always more than the sum of its parts (Hodder 1999); it entails imagination, personal experience and a knitting together of these with the information contained within the database. The experience of a variety of individuals who created that information. However, as we have seen, this information is not available to tie to the records in most cases. It is however possible to tie ones own experiences of the fieldwork process to information contained within the database, when specific sites and scatters are considered for a selected area. Section 2 of the thesis will attempt to show this in practice, by analysing the information within the database for an area in South Lanarkshire, and combining it with the source material and other archaeological deposits in the area. The author's experience of this landscape through various projects will then be used to illustrate how experience of a place can breathe life into the lithic scatters.

Bender talks about the creation of *our* past and how we must accept our subjectivities (Bender 1998, 7). We move between our interpretations, our imaginings, and the material residues.

> It was not so long ago that archaeologists felt that they had to 'stay with the evidence' - if it could not be proven, it should not be discussed. Now, fortunately, we have come to recognise that we *have* to go beyond the evidence, that 'the evidence' does not of itself deliver an understanding, and that it is open to any number of interpretations. So we still mix and match and get satisfaction from making physical contacts with the past. That is our way...
>
> Ibid. 7.

As well as this physical contact with the past, the experience of the fieldwork itself, it is important to gain an understanding and 'feel' for the whole situation in which the fieldwork takes place. A whole array of experiences should be documented, going beyond the traditional and into a new format, describing a life-style surrounding the practice. Similar procedures have been developing in another medium, that of television, where life-style programmes such as 'The Naked Chef' describe not only the fundamentals of cookery and how to produce specific recipes and dishes, but the whole experience of being a cook. Granted, this programme will always be creating a false image for marketing purposes, but the essence of what it is attempting to do is very exciting. Only through experiencing practice, can a fuller understanding of the product take place. Only by considering other people's experiences can a pluralistic archaeology flourish (chapter 5).

Ultimately, it is the author who creates the story and interprets the evidence, and as many prehistories are created as there are authors. There is no definitive prehistory (Bender 1998, 88). As Ruth Tringham says, we should not "...just acknowledge the ambiguity of evidence, but *celebrate* it" (Bender 1998, 89).

Hodder reminds us that imagination should be used within a specific set of limits however

> Imagination in archaeology operates in relation to disciplinary norms and disciplinary knowledge. The subjective and imaginative side of archaeological research is not simply personal or ad hoc. It is informed by disciplinary rules and knowledge.
>
> Hodder 1999, 72.

As this chapter has outlined, the information collected concerning lithic scatters comes from a variety of sources. It is important to have academic constraints within the process of collection, so that information concerning the scatter which is subsumed within the database in the future is of as much value as possible. However, it is a combination of this information and a record of the process and experience which is necessary when interpretations of prehistory are created.

Conclusion

We have seen that the database is flawed, although unavoidably so, given initial research requirements (chapter 1). Data is never objective, but it is usually taken as self-evident. One way of avoiding this uncritical assumption of data, is to take note of the recording process and the variety of relationships people have with the material being studied. The process of excavation (or fieldwalking) must be recorded. Stories then come not from the 'self-evident facts', but the experiences of fieldwork, the research acts. Similar agendas have been at work within the social sciences since the 1970s.

The database constricts the information available from the many sources, distilling them into a set framework. Although looking at the original sources fails to document the whole experience of fieldwork, it goes some way in highlighting intentions and attitudes within different strands of archaeology, and allows an insight into the lives of the people who formed this information. The contents of the database are set into a social history.

Recent narratives which concern themselves with reflexive methodologies describe work undertaken during excavation (above). Chadwick expresses a concern that a lack of experiment in these techniques by a wider number of people will end up with the rescue/ research divide increasing, rather than dissipating (Chadwick 1999, 11). Following on from this comment, I suggest that the techniques being applied should also spread into different aspects of archaeological fieldwork, so as to encompass all sides of the process.

A procedure which goes beyond *just* recording the lithics collected, the shape of the scatter or even the type of survey conducted is obviously necessary, the practice of fieldwalking should be recorded as this is the part of the archaeological enquiry which can inform the reader about the formation of the 'data'. In this way, the fields can be re-populated (figure 4.3).

Figure 4.3 Populated fields

Rather than talking of lithics within a field, which the database does as it stands now, we can reflect on the people who have relationships with these places.

> Such people constitute a history, without it your social memory has gaps, has a whole dimension missing, and the places you look at, the dales and villages and towns, have no more depth than a theatre set.
>
> Craig 1996, 80.

These people have a relationship with the field and scatter within it. The experience of the place delineated by the scatter through time can be used to effect, when familiarity with that locale is described through experience of place. When this information is used alongside traditional descriptions of the contents of the database, interpretations concerning processes and activities through prehistory can be intimated.

The following chapter will outline a more detailed approach to the recording of the process of fieldwalking, by looking more closely at the creation of social space through fieldwalking. It will also demonstrate how this can aid an understanding of the power of fieldwalking in practice, moving beyond the problems inherent within the data, and how a more realistic record may be produced in the future, leading to a more reflexive record and therefore a fuller understanding of how interpretations of past events are drawn.

Chapter five

Walking through space

Space (Continuation and End)

I would like there to exist places that are stable, unmoving, intangible, untouched and almost untouchable, unchanging, deep-rooted; places that might be points of reference, of departure, of origin:

My birthplace, the cradle of my family, the house where I may have been born, the tree I may have seen grow (that my father may have planted the day I was born), the attic of my childhood filled with intact memories...

Such places don't exist, and it's because they don't exist that space becomes a question, ceases to be self-evident, ceases to be incorporated, ceases to be appropriated. Space is a doubt: I have constantly to mark it, to designate it. It's never mine, never given to me, I have to conquer it.

Space melts like sand running through one's fingers. Time bears it away and leaves me only shapeless shreds...

Perec 1974, 90-91.

Introduction

This chapter develops the ideas that were introduced in chapter four. It has been accepted that the creation of the scatter record as represented through fieldwalker's notes, catalogues and publications lead to apparent 'facts' which are situated in the database, and that this data does no real justice to the actual event of fieldwalking, scatter discovery and recording.

Reference to the processes and experiences throughout fieldwork are necessary to give a social, historical and cultural context to the records situated in the database. It is reference to these processes which lead to an understanding of the way the data is created. The database is a construct containing numerous details about the lithic scatters resource. These details must not be taken as 'facts', but should be situated within a context of production, to gain a fuller understanding of their construction, and allow a plurality of interpretations to be shown.

The original sources of the records, show a history of collection (chapter 3), but do not intimate a fuller understanding of the process of interpretation, which is ultimately necessary to gain any meaning from the data. A plurality of conceptual perspectives and a range of different interpretations occur throughout the fieldwork process. Most of these are forgotten or ignored, when the final product is considered. However, if they are recorded and considered, the final interpretations can be created through relating these experiences to the artefactual material, and consequently the author can construct narratives about the past from them.

Although the experiences of the fieldwalkers who have contributed to the lithic scatters database are not available, nor ever will be, it is still possible to use the information when combined with our own personal experience of fieldwork. The data as it stands must be accepted and used, otherwise no interpretations are possible. There is a common strand running between all fieldwalkers: that of the field and space created by walking within it. The scatter within the field acts as a metaphorical knot in space and time, through which many have passed.

The experience of *being in the field*, is paralleled to the presence of people within this place throughout prehistory. As explained in chapter 4, archaeology is about interpretation and processes which only exist in the present. We can only create a past from present activities. Ideally, a range of experiences are needed, a pluralistic record is necessary to gain as much information about the subject as possible, and to avoid an introverted framework from swamping interpretations. In this case, local knowledge (which at present is undervalued), is crucial to a fuller understanding of place. The place created by a lithic scatter, and which is formed through the process of fieldwalking, has been experienced by many individuals through time. To gain insights into a local knowledge, and to include this in any interpretations of the place through time, is surely the way to proceed. We must situate archaeological practice within a framework of interpretation which brings the discipline up to speed with current issues in the social sciences, where reflexive and pluralistic interpretations are accepted.

By looking at the way experience of a certain locale is structured and built up through time, it is possible to see the difference between the local voluntary archaeologist and the professional archaeologist. It is suggested that those who have a more intimate understanding and knowledge of the landscape should be included in specialist agendas, as they will have a different perspective to the areas considered in the fieldwork, through having a deeper knowledge and understanding of the landscape they inhabit. Professionals usually only visit the fieldwork area for short periods of time every year, and will never impose meaning on the surroundings to the same degree as a local does.

Memories and experience create familiarity with certain places and landscapes, a familiarity which is the essence of understanding place. Professional archaeologists would do well to accept their own limitations, and embrace the experience of the local community, allowing a pluralistic record to flourish.

The value of fieldwalking is immense, when the above arguments are accepted. Through fieldwalking it is not only possible to understand the formation of the recorded lithic scatter and the creation of the 'facts' within the database, but an intimate understanding of the landscape is also created. Fieldwalking allows a specific place to be experienced, allows meaning to be imposed on it, which is isomorphic to relationships people had with the place in the past. The presence of the lithic scatter creates this link. As we walk over a scatter, we are following in the footsteps of past lives. Relating this experience to the information collated within the database can therefore go far in creating stories and interpretations about the past.

The process of fieldwalking

Bradley talks of the power of walking through the landscape, and how being situated in that landscape can link the public to archaeology (Bradley 1996). Natural features which played an enormous role in shaping peoples' lives and understandings of their surroundings throughout prehistory are meaningful and recognisable to everyone today (Tilley 1994a; Barrett 1999). He appears frustrated by the "obsession with sites and monuments" that archaeologists still have, and feels that the archaeological landscape is undervalued because features within the landscape which are not 'modified by human endeavour' (Bradley 1996, 38) are not considered part of the archaeology.

He recognises that the public's perception of the landscape has something in common with the concerns of people in the past (ibid. 38), as by moving through the landscape, "...mobile people define their worlds" (ibid. 42) in a way paralleled to our current perceptions and understandings of the world. His thesis is supported 'scientifically' by rigorous methodologies. He shows how "...intuitive perceptions of place [can be] measured against a control sample", allowing findings to be checked by others.

For example, through his analysis of the stone axe quarries at Great Langdale in the Lake District, and the rock carvings in the Millfield Basin, Northumberland, he shows how the perception of the landscape today can link to the perceptions and meanings people put on the same landscape at points in prehistory.

Unfortunately, lithic scatters do not enter into his study. Indeed, he feels that even if we mapped the occurrence of surface artefacts

> ...we would still be confronted with a problem. Human activity did not seem to form itself into sites as we might have expected, and there can be little obvious relationship between the distribution of portable artefacts and the positions of identifiable earthwork monuments like henges. One reason for this problem is that we are better equipped to study sedentary communities than those that practised a more mobile occupation of the landscape.
>
> Bradley 1996, 40.

That may be so, but lithic scatters can still create *places* across the landscape. Sedentary communities will have created a perception of their landscape through a process of appropriating what exists in that landscape, referencing their world and the things in it to what has gone before (Edmonds 1999). Lithic scatters will have played a significant role in this understanding, and patterns of sedentary land use may be explained in terms of mobile groups scatter locations (see chapter 9).

The relationships between the distribution of portable artefacts and the positions of identifiable earthworks may have a deeper significance than Bradley accepts. Although he feels that current perceptions and understandings of our world are paralleled to the way mobile people define them, he goes no further when considering how we understand certain spaces marked by scatters, through fieldwalking and spending time discovering them.

Scatters act as marks of prehistoric movement and activities across the landscape. There is an immediate link between Bradley's ideas and the activities carried out by archaeologists when walking across the landscape today. Fieldwalking entails the very thing that Bradley sees as linking the public to the archaeological landscape. The power of fieldwalking is very significant in that we experience something which has links to the past. Although the significance of natural places is Bradley's overall concern, the *practice* of walking is also valuable, as through it spaces are created.

As Bradley suggests that the public can be linked to archaeology by walking through the landscape and therefore having something in common with the concerns of people in the past, so fieldwalkers, especially those with an intimate local knowledge (see below), may also have something in common with the concerns of people in the past.

Ingold considers this commonality when he talks of the temporality of the landscape (Ingold 1993). He suggests that landscape should be considered in terms of the lives and works of past generations who have dwelt within it, leaving something of themselves in the process - what he calls a 'dwelling perspective' (ibid. 152). Where anthropologists can adopt this perspective by 'bringing to bear the knowledge born of immediate experience, by privileging the understandings that people derive from their lived, everyday involvement in the world' (ibid. 152), archaeologists can adopt it because the 'practice of archaeology is itself a form of dwelling'.

> For both the archaeologist and the native dweller, the landscape tells - or rather is - a story. It enfolds the lives and times of predecessors who, over the generations, have moved around in it and played their part in its formation. To perceive the landscape is therefore to carry out an act of remembrance, by remembering is not so much a matter of calling up an internal image, stored in the mind, as of engaging perceptually with an environment that is itself pregnant with the past.
>
> Ingold 1993, 152-3.

Appadurai suggests that the ethnographic project and the understanding it seeks to discover have place (or landscape) as a common factor:

> The ethnographic project is in a peculiar way isomorphic with the very knowledges it seeks to discover and document, since both the ethnographic project and the social projects it seeks to describe have the production of locality as their governing telos.
>
> Appadurai 1995, 207.

People's understanding of their locale, their personal experience of place are important to consider. We can similarly describe the archaeological project as being isomorphic with the knowledges it seeks to discover, as the production of locality is their governing telos.

Appadurai (1995) talks about the production of locality as a *structure of feeling*, and describes how every day materiality produces this locality as moments in a general technology (and teleology) of localization (ibid. 205). As Bender et al describe the "...seemingly mundane activities of collecting water from the spring, walking through a village, chatting with a neighbour over a field boundary wall..." (Bender et al 1997, 149) that form and maintain beliefs about the world, Appadurai equally sees the importance of the everyday living ("The building of houses...the making and remaking of fields and gardens..."(1995, 205)) as part of a structure of feeling which creates locality and an understanding of the world. In the same vein, we can see that the movement and time spent in a field throughout the fieldwalking process, create an understanding of that place.

Hodder stresses this in the context of *enculturation:*

> It is the practices, in the process of enculturation, that act back on the habitus, so that Bourdieu can talk of 'the mind born of the world of objects'...It is exciting to realise that mundane items in the material world, of the type excavated by archaeologists - pots, bones, pins and door-frames - can all play a part in the process of enculturation, in forming the social world.
>
> Hodder 1986, 76.

The lithic record reveals an everyday working of lithics. Through the creation of the lithics, the world is structured, and from this structure people shape the lithics in a mutual relationship. The process of fieldwalking to recover these residues similarly structures the way we perceive our world, through the recovery of lithics at a specific location. The process of fieldwalking, of spending time in a specific field, creates a production of locality and bodily understanding of that place.

The fieldwalker (as Agent) enters into a relationship with the field and the lithics within it, through the process of walking. S/he defines the area of the field by specific movements which are determined by the fieldwalking methodologies undertaken, and the artificial boundaries of the field. S/he relates to other fieldwalkers who similarly create space through their movements and experience.

The time spent in the field is unusually long - artificial compared to a normal walk in the country or through a landscape, which does not involve spending as much time and detailed concentration on a specific area of land. Only the farmer ploughing divides physical space up through such regular, linear movements. As we have seen already, the fieldwalker follows the farmer, scrutinising every line which the plough creates. This walking is conducted on an artificial grid; the archaeologist actually divides space up into a specific structure which then governs physical movement across the field.

The process of slowly walking, concentrating on the ground itself, and what might be revealed, leads to a distraction which blurs the present situation. The fieldwalker becomes lost in a solitary world, where the landscape surrounding him/her can disappear behind a fixation with the soil. A lapse in concentration will cause the fieldwalker to look up, situate him/herself in the context and position of the field and the landscape. Rather than the landscape being viewed as a constant series of scrolling images, different views (however slight) are recognised by pausing at a variety of places across the expanse of the field. A fieldwalker can find him/herself studying the view from a whole series of positions within the field, without being fully aware of the spaces in between.

Movement consists of regular sweeps of the area. Backwards and forwards the walking goes, passing close by the previous run, slowly moving over the expanse of soil.

> Through the exercise of descending and climbing, and their different muscular entailments, the contents of the landscape are not so much measured as *felt* - they are directly incorporated into our bodily experience.
>
> Ingold 1993, 166.

This level of experiencing the same place is significant in contributing to a 'sense of place' or 'structure of feeling' for the locale. The experience of fieldwalking, the feelings remembered (from boredom, to cold, to 'muscular consciousness' (Ingold 1993, 167)), can be relived in our imagination after the event, to be combined with the material remains recovered and recorded.

It is the intimate knowledge gained through the practical application of fieldwork, be it excavation, survey or fieldwalking that creates an understanding of our world, and the objects within it. It is this which brings us close to the activities throughout prehistory. We will never know precise physical movements, or ways of thinking which occurred in prehistory, but we can bring together our own experiences to create the past from what we find.

Local versus outside knowledge

Our concepts of places vary between each of our personal experiences of that place. *Experiential space* as described by Thomas (1996, 85) can be seen as a spatial order centred on the human body, and is separate from *geometrical space* in that the latter can only be discovered through first existing in the former. This Heideggerian logic, which defines geometric space as something in which the human body is situated in, and experiential space as containing stretched and dispersed human beings through space and time, leads us to understand how a familiarity with a certain place comes about. As Thomas describes

> There are different ways in which we can be close to things. Once we know something or somewhere deeply, it may begin to recede from our explicit concern, and becomes a matter of *bodily understanding.* This intimate form of closeness is the outcome of *inhabiting* a space, and it is through inhabitation that a space becomes a place. In this way the quality of place emerges out of inconspicuous familiarity.
>
> Thomas 1996, 86.

The meanings put upon places by people who *inhabit* them are different to those meanings experienced by visitors to that place. Local archaeologists who live in the place which they walk and study, have a deeper understanding of that place through the creation of experiential space. Their memories of specific places will be much deeper and will be part of their understanding of the way they live and see their landscape. The professional however, is visiting that landscape from his/her place of habitation, usually the city. Despite years of visiting and even staying in that landscape over summer months, the bodily understanding of that place will not be as significant as is experienced by the life-long resident. If the perception of place comes from memory (Tilley 1999, 178), then the long-term resident to a specific landscape will have a deeper perception of that landscape than the visitor.

The separation between the geometric and experiential space discussed by Thomas above, is similarly mentioned by Gell (1985). He concerns himself with Bourdieu's theory on the mastery of the spatial environment, which "...arises through familiarity with 'practical' as opposed to 'Cartesian' space." (ibid. 273). Whereas Thomas is more concerned with the bodily experience of *inhabiting* a place, Gell discusses the formation of space and place through *practice.* If *experiential space* is relevant to understanding the situation and inhabitation of local archaeologists within a specific landscape, and how they differ in knowledge and awareness of that landscape to the professional 'visitor' through being in it continually, the *practical* application of spatial relationships is fundamental in understanding the significance of fieldwalking for *any* archaeologist.

I have suggested that the experience of place held by the local is stronger and deeper than that gained by the visiting archaeologist. As Pred describes:

> Tuan, Relph, and others emphasise that space and physical features are mobilised and transformed into place through human residence and involvement in local activities and routines; through familiarity and the accumulation of memories; through the bestowal of meaning by images, ideas, and symbols; through the "actual" experience of meaningful or moving events and the establishment of individual or communal identity, security and concern.
>
> Pred 1983, 49.

His analysis of Tuan's work in particular, reiterates the divide I have tried to show between the local and the professional. The difference between the two is clear: the professional acquires a sense of place from outside knowledge, "...from seeing objects of 'high imageability' that one has been 'trained' to discern...[as having archaeological value in this case]" (ibid. 49); while the local gains a sense of place from "...inside, intimate knowledge...emotional ties to the material environment...a total experience of milieu..."(ibid. 49).

Although there is a marked difference between the sense of place experienced by the professional and the local; it is the professional who usually has the training to interpret the findings when in the field, even though a deeper understanding of the place may not be apparent. The professional also comes to the area with the support of an institution, funding (usually), and a wealth of specialist knowledge and contacts at their disposal.

Another fundamental difference can be seen by the difference in the way the two sides initially orientate themselves in the landscape. Practical way finding (in opposition to using a map) is conducted in terms of co-ordinates centring on the agent, and this is how someone familiar with a place (i.e. a local) finds their way around the landscape they know. The first thing a professional archaeologist does, is to look at a map of the area s/he wishes to work in before venturing out into the field. Someone unfamiliar with a location will normally consult a map to help understand the landscape. With time spent in the field, this technical plan of an area soon takes on familiarity and experiential space of a place is formed, transforming the technical aerial view into a more practical way-finding.

> Practical way-finding is based on images reinforced by habit and familiarity, technical way-finding is based on maps and algorithms.
>
> Gell 1985, 274-5.

Fieldwalking creates a practical mastery on a quotidian level of visiting fields. Locals will certainly have a familiarity with a location, more so than the visiting archaeologist. Fieldwalking actually creates a knowledge of the landscape which is never equated by map work, textual reference or studying the material culture from a particular place.

The process of fieldwalking, being in the field, experiencing the practicalities and discovering a scatter, all come together to create a place which has been inhabited or in which activity has occurred at some point in prehistory. The same structuring principles are apparent through time at that specific point marked by the physical presence of a lithic scatter. It is the scatter which ultimately binds these actions. An analysis and contextualisation of the lithics will aid interpretation, from a specific training and specialist knowledge which is learnt by the professional. It is the practice however, which forms the scatter in the first place, and although this is created by the professional as well as anyone else, it is the local who holds the most intimate of knowledges concerning the locality of place. It is therefore important to adopt a strategy which combines experience from many levels, to adapt a pluralistic approach to the fieldwork.

As ethnographers make explicit reference to the context of their fieldnotes (as we saw in the previous chapter), so we must create extensive fieldnotes, and understand the experiences which shape them, and the context from which they come. To do this we must proceed with caution however:

> Whenever possible, of course, any attempt to recover the becoming of sense of place or structure of feeling and its links to the structuration process should be amplified with either oral history or a very cautious employment of what Thrift has called "the diverse literature of 'remembering' [and] 'how things were'" - diaries, autobiographies, travel accounts and general fiction. (Considerable caution is called for since there are no established phenomenological or other methods for interpreting the experiences that accumulate as individuals participate in the becoming of place, and since the open or disguised written record of personal involvement in place tends to unintentionally or intentionally reflect the interests of some groups rather than others and is further subject to distortion by self-consciousness and self-censorship).
>
> Pred 1983, 59

To illustrate the processes at work, and to enable a closer understanding of how the recorded scatter was created, Thrift's 'diverse literature of remembering' should be employed. It is the "...recovery of the becoming of sense of place..." which must exist as a grounding for interpretations of the past, and when combined with the 'facts' subsumed within the database from a variety of experiences, interpretations can be created. To prevent a reflection of the interests of some groups rather than others we must adopt a pluralistic record.

The value of the voluntary archaeologist

The above discussion leads to an important evaluation of the role of the local within archaeology. The local archaeologist (or voluntary archaeologist in most cases) is often misconstrued as being of little use to wider academic concerns. As archaeology has grown into a more specialised subject, and as developer funded archaeology has increased, the greater level of training required by the profession has increased, as has the partition between the 'professional' and the 'volunteer'. It is the very notion of being a volunteer that gives a derogatory image to the voluntary archaeologist. 'Amateur' also has connotations of 'unprofessionalism' and being unsuitably qualified to carry out the work. This is one reason why power relations are so biased within the archaeological discipline.

There is a certain amount of control over the voluntary sector by the professional, as the latter have the view that the former lack any disciplinary value, according to their principles. This leads to a process of 'domestication' of the voluntary sector, whereby their actions and the outcomes of their actions are controlled through systematic structuring of their practices within the discipline. They are persuaded to behave as the professional, aspiring to become 'professional' in their approaches to archaeology.

Contact with local archaeologists and societies through the research undertaken for the lithic scatters project revealed many frustrations with current attitudes held by the professionals and the institutions representing them. In most of these cases, the conflict between the two sectors stems from a simple matter of control over material, with ownership rights vied from one side to the other. The following letters hold an interesting insight into these attitudes. Through examining such letters, it is possible to build up a picture of attitudes and perceptions which specific people have to the archaeological discourse as a whole.

A framework of identity revealed

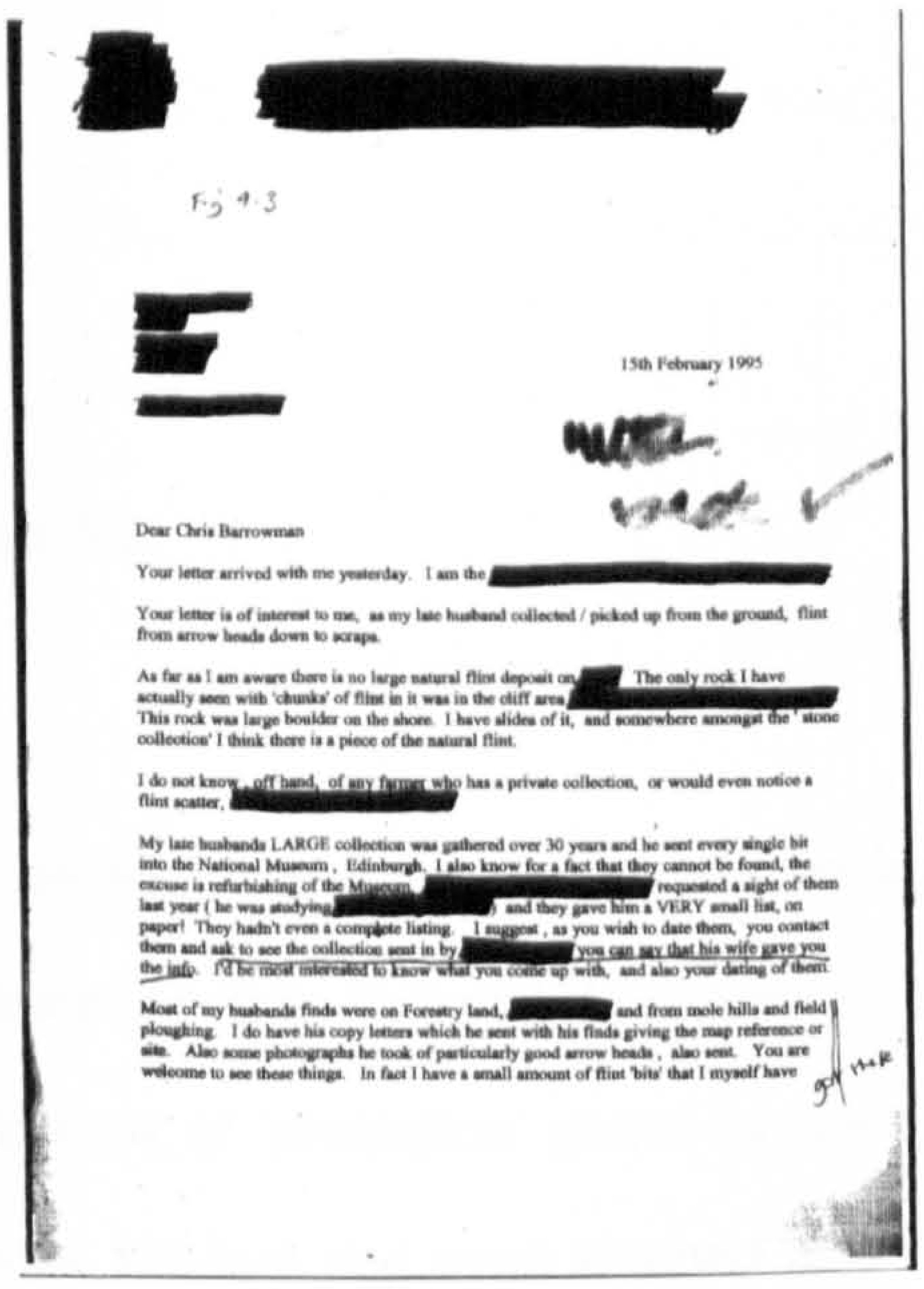
The sources consulted (as discussed in chapter 1) ranged from the farmer who came across lithic material as part of his daily routine, to the enthusiast who collected as a means to an end, to the largest and (in archaeological terms) most powerful organisations who controlled access and the mediation of this material culture not only in a local sense, but on a national and even international scale.

This hierarchy was revealed in its rawest form when gaining access to the information held within. The subtle relationships connecting these bodies become apparent through the acting out of social responses to my enquiries. At one end of the scale, some of the smallest units in this system of operatives seemed to resent the power held by the larger units; at the other end, there was apparent frustration at not having the control over self-reliant groups. Everyone felt *they* had a right to the past they were collecting.

Let me illustrate my insights by showing a few diagrams of letters received by various collectors and institutions – the sources have been deleted to avoid any personal slurs.

The following quote is from an illustrious local collector:

> I enclose a list of sites of lithic scatters as far as I have got on with it – it extends back about 40 years and in many cases I can't remember which museum got them (and often they can't either !).



[redacted]

Fig 4.3

[redacted]

15th February 1995

Dear Chris Barrowman

Your letter arrived with me yesterday. I am the [redacted]

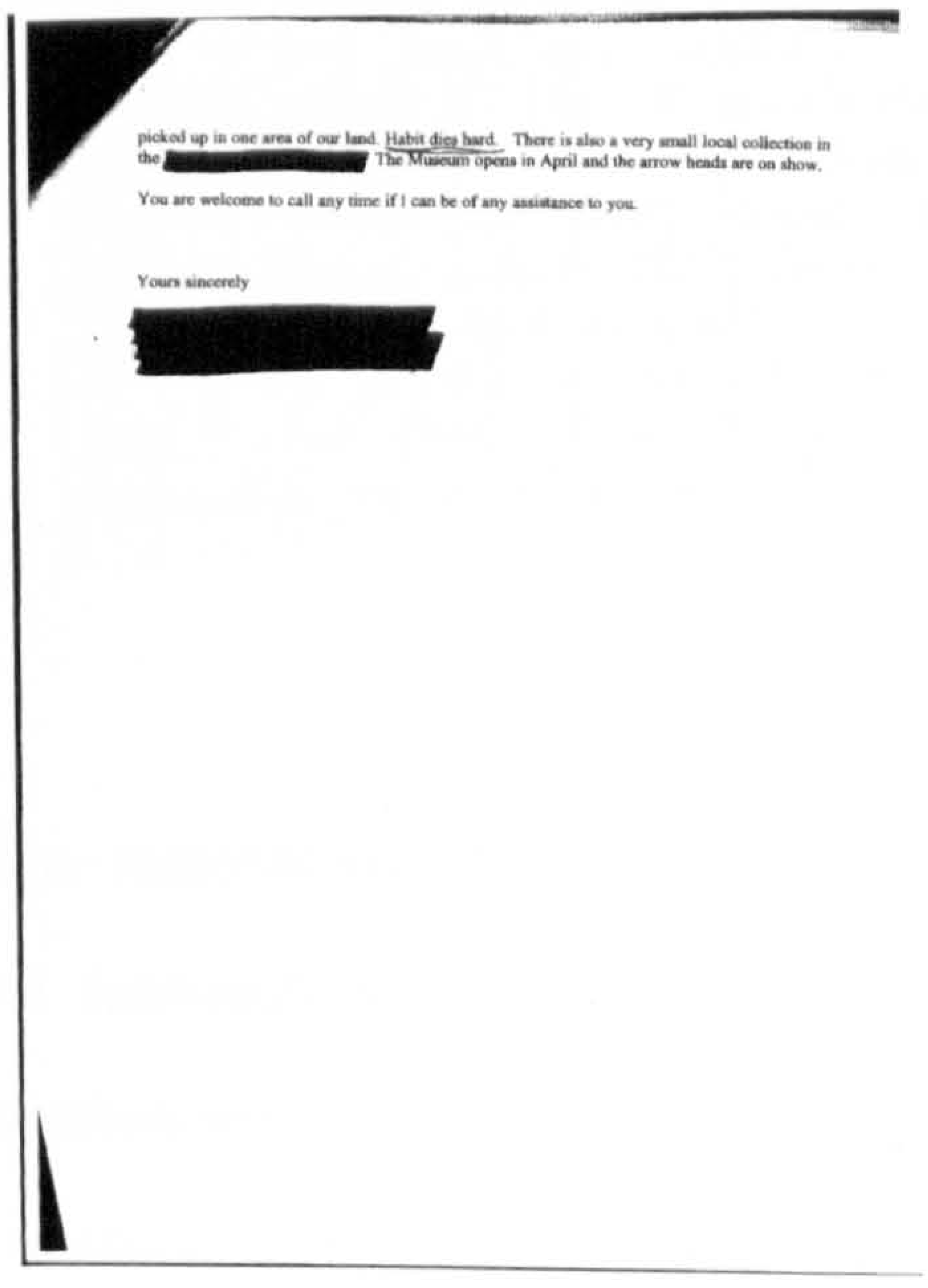
Your letter is of interest to me, as my late husband collected / picked up from the ground, flint from arrow heads down to scraps.

As far as I am aware there is no large natural flint deposit on [redacted] The only rock I have actually seen with 'chunks' of flint in it was in the cliff area [redacted] This rock was large boulder on the shore. I have slides of it, and somewhere amongst the ' stone collection' I think there is a piece of the natural flint.

I do not know, off hand, of any farmer who has a private collection, or would even notice a flint scatter, [redacted]

My late husbands LARGE collection was gathered over 30 years and he sent every single bit into the National Museum , Edinburgh. I also know for a fact that they cannot be found, the excuse is refurbishing of the Museum. [redacted] requested a sight of them last year (he was studying [redacted]) and they gave him a VERY small list, on paper! They hadn't even a complete listing. I suggest , as you wish to date them, you contact them and ask to see the collection sent in by [redacted] you can say that his wife gave you the info. I'd be most interested to know what you come up with, and also your dating of them.

Most of my husbands finds were on Forestry land, [redacted] and from mole hills and field ploughing. I do have his copy letters which he sent with his finds giving the map reference or site. Also some photographs he took of particularly good arrow heads , also sent. You are welcome to see these things. In fact I have a small amount of flint 'bits' that I myself have



picked up in one area of our land. Habit dies hard. There is also a very small local collection in the [redacted] The Museum opens in April and the arrow heads are on show.

You are welcome to call any time if I can be of any assistance to you.

Yours sincerely

[redacted]

And in figure 5.1, from the relation of a local collector:

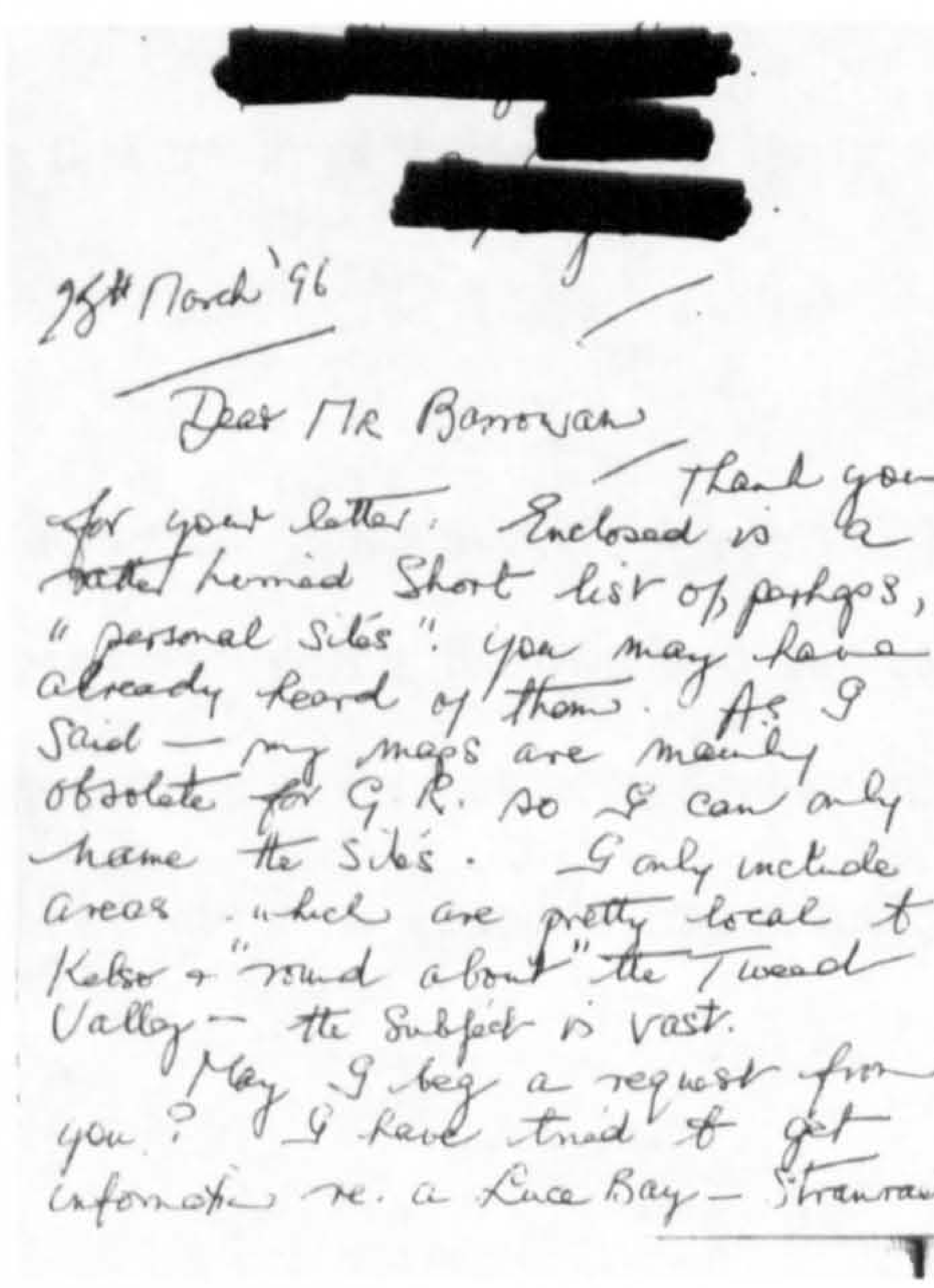
> My late husbands LARGE collection was gathered over 30 years and he sent every single bit into the National Museum, Edinburgh. I also know for a fact that they cannot

be found, the excuse is refurbishing the Museum...I suggest, as you wish to date them, you contact them and ask to see the collection sent in by XXXX, you can say that his wife gave you the info. I'd be most interested to know what you come up with...

It is apparent that tensions exist between the smaller collectors who part with material through a feeling of responsibility to the museums – in most cases they are proud of the fact that they have recovered past material and this relates to a sense of identity in most cases, illustrated by figure 5.2:

Dear Mr Barrowman

Thank you for your letter. Enclosed is a rather hurried short list of, perhaps, "personal sites". You may have already heard of them.



[redacted]

28th March '96

Dear Mr Barrowman

Thank you for your letter. Enclosed is a rather hurried short list of, perhaps, "personal sites". You may have already heard of them. As I said — my maps are mainly obsolete for G.R. so I can only name the sites. I only include areas which are pretty local to Kelso & "round about" the Tweed Valley — the subject is vast.

May I beg a request from you? I have tried to get information re. a Luce Bay – Stranraer

Figure 5.2

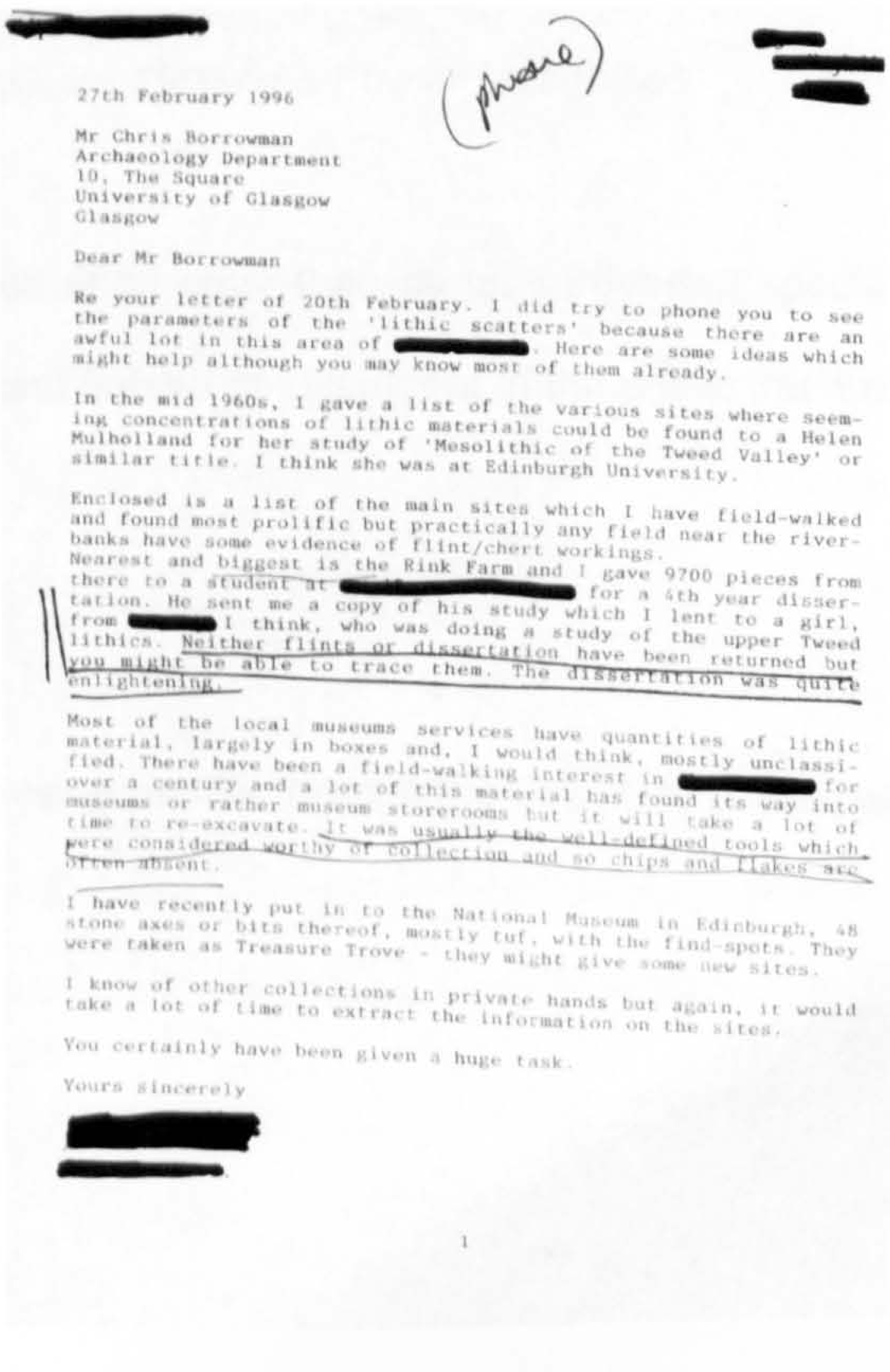
These personal feelings can be placed against the National identity claims held by such institutions as the National Museum of Scotland (although see Clarke 1996), and the connotations of 'protection' given by such an establishment (Clarke 1998, 3). In turn the collectors' are hurt and even shamed when these institutions do not acknowledge their roles. After all, national collections have been built in part by these various fieldworkers, all contributing to this sense of place (Walsh 1995). It must be considered that in some cases, the staff at the various museums in Scotland have little time as it is, due to lack of resources, and masses of lithic material sent to them by enthusiastic collectors only increase their work load. A constant ringing phone disturbing your train of thought lays the foundations of the road to insanity !

> However, the vast size of specific institutions tends to have an adverse effect on the quality of information which it is supposed to present to the archaeological public. This feeling has been stated 'between the lines' in many letters, not only from local collectors, but from other institutions. As the XXXX Antiquarian and Field Naturalists Society does not seem to have any information from its members it seems, regretfully, that if assemblages from this area exist, they are likely to be in the national collection.[my italics].

Collectors also become frustrated when they realise that much of their material never sees the light of day in any museum (figure 5.3):

> Most of the local museums services have quantities of lithic material, largely in boxes and, I would think, mostly unclassified. There has been a field-walking interest in XXXX for over a century and a lot of this material has found its way into museums *or rather museum storerooms* but it will take a lot of time to re-excavate. [my italics].

Figure 5.3



[redacted]

[redacted]

(phone)

27th February 1996

Mr Chris Borrowman
Archaeology Department
10, The Square
University of Glasgow
Glasgow

Dear Mr Borrowman

Re your letter of 20th February. I did try to phone you to see
the parameters of the 'lithic scatters' because there are an
awful lot in this area of [redacted]. Here are some ideas which
might help although you may know most of them already.

In the mid 1960s, I gave a list of the various sites where seem-
ing concentrations of lithic materials could be found to a Helen
Mulholland for her study of 'Mesolithic of the Tweed Valley' or
similar title. I think she was at Edinburgh University.

Enclosed is a list of the main sites which I have field-walked
and found most prolific but practically any field near the river-
banks have some evidence of flint/chert workings.
Nearest and biggest is the Rink Farm and I gave 9700 pieces from
there to a student at [redacted] for a 4th year disser-
tation. He sent me a copy of his study which I lent to a girl,
from [redacted] I think, who was doing a study of the upper Tweed
lithics. Neither flints or dissertation have been returned but
you might be able to trace them. The dissertation was quite
enlightening.

Most of the local museums services have quantities of lithic
material, largely in boxes and, I would think, mostly unclassi-
fied. There have been a field-walking interest in [redacted] for
over a century and a lot of this material has found its way into
museums or rather museum storerooms but it will take a lot of
time to re-excavate. It was usually the well-defined tools which
were considered worthy of collection and so chips and flakes are
often absent.

I have recently put in to the National Museum in Edinburgh, 48
stone axes or bits thereof, mostly tuf, with the find-spots. They
were taken as Treasure Trove - they might give some new sites.

I know of other collections in private hands but again, it would
take a lot of time to extract the information on the sites.

You certainly have been given a huge task.

Yours sincerely

[redacted]

1

This frustration is shared by those who have been equally admonished by other institutions, which in effect are seen as being responsible for the archaeology of the country (figure 5.3)

> Nearest and biggest is the Rink Farm and I gave 9700 pieces from there to a student...[who]...sent me a copy...which I lent to a girl...who was doing a study of the Upper Tweed lithics. Neither flints or dissertation have been returned but you might be able to trace them. The dissertation was quite enlightening.

It can be seen that the control over the material extends to a control over information, and that power relations are revealed through simple statements (Bender 1998). The people in bureaucratic control can influence how others go about their interests, forcing rules and regulations which may actually affect the whole structure of the voluntary sectors attitudes to their past, and their identities. This poses serious questions for the workings of a multivocal archaeology. If we are to proceed with an archaeology which considers the processes at work within archaeological fieldwork, the barriers between different strands of the discourse must be broken down, allowing information to be not only shared, but respected as it stands.

This divide has been seen as a major problem within the subject, acting as a corollary to the good of archaeology in the future. Esoteric knowledge is only of value to the few who indulge in the creation of it (Shanks and MacGuire 1996). As Fowler recognises

> ...if archaeology is to proceed at all other than as an introverted specialism for the recondite few, the retention and indeed development of the public interest is vital.
>
> Fowler 1981, 64.

Indeed, one way to approach this development is through the voluntary sector, who are seen as situated within a public sphere.

> An approach needs to be developed which is not didactic and which takes account of local response to past human presence in the land. There must always be a place for the non-specialist.
>
> Greeves 1989, 665.

The voluntary sector is valued in many other academic disciplines, precisely for its lack of specialism and general knowledge. The political situation of people who do something for the love of it, driven by some deep rooted obsession with the unknown, is one of great advantage when it comes to communicating with those who are unaware of the subject. Professionals who are paid for their knowledge often lose sight of this inner drive - power and hegemony creeps into the psyche, destroying the innocence which may have sparked off the interest in the subject. Aldo Leopold talks of the amateur community within naturalist studies:

> Wildlife research started as a professional priestcraft. The more difficult and laborious research problem must doubtless remain in professional hands, but there are plenty of problems suitable for all grades of amateurs. In the field of mechanical invention research has long since spread to amateurs. In the biological field the sport-value of amateur research is just beginning to be realised.
>
> Thus Margaret Morse Nice, an amateur ornithologist, studied song sparrows in her back-yard. She has become a world-authority on bird behaviour, and has out-thought and outworked many a professional student of social organisation in birds. Charles L. Broley, a banker, banded eagles for fun. He discovered a hitherto unknown fact: that some eagles nest in the south in the winter, and then go vacationing to the north woods. Norman and Stuart Criddle, wheat ranchers on the Manitoba Prairies, studied the fauna and flora of their farm, and became recognized authorities on everything from local botany to wildlife cycles...Do not let anyone tell you that these people

> made work out of play. They simply realized that the most fun lies in seeing and studying the unknown.
>
> Leopold 1987, 185.

Professional archaeologists would do well to harness the skills existing within the voluntary sector. As we saw above, the professional archaeologist never manages to become as familiar with a specific place as locals do. Starting from a rigid framework of learning, their interpretations are made within the confines of a specific structure, with little personal and local knowledge to feed off. Experience on the ground obviously breeds this in part, but as mentioned in the previous chapter, it is usually the end result of the experience which is moulded into authoritarian views. Conversely, the voluntary sector falls down in terms of specialist knowledge and expertise. However, a lack of intimate knowledge and practice may hinder professional interpretations to such an extent that they are rendered useless.

There has been a large volume of work undertaken by local enthusiasts in south and central Scotland, especially around the Upper reaches of the Clyde and Tweed valleys, down the west coast, and the south-west (as detailed in chapter three). Most of the collectors relevant to the Lowland regions have undertaken fieldwork for most of their lives, having a healthy enthusiasm for archaeology and the prehistory of Scotland particularly. In some respects it is safe to say that they have an amazing talent for knowing where to find prehistoric settlement evidence. This comes through living and working in the same area for a large number of years, building up an intimate familiarity with their landscape, a structure of feeling through movement. Perseverance and the ability to continually return to the same areas is also an advantage. This is a good example of how fieldwork, especially field-walking, should ideally be carried out. Long-term projects where the same sites and fields are continually looked at will always produce the best results. In this way the field is seen in many different conditions at different times of the year.

I visited a local collector and voluntary archaeologist (hereby described as Mr X) at his home in 1996 as part of my research for the Lithic Scatters Project. He was kind enough to show me his collection of lithics which he had accumulated over the past fifty years from his many walks around the landscape in which he lives. All these lithics had been recorded and entered into the relevant publications, and in the 1970s Mr X was renowned for his experience and local knowledge of his home. It was my first visit to this area of Scotland.

After a cup of tea and some scones, Mr X drove me around the main valleys and river tributaries adjacent to his house. We visited almost all the lithic scatter sites which he had discovered; they were almost all situated on bluffs above river meanders. I was completely disoriented as we drove around, but his detailed descriptions of the landscape slowly allowed me to become aware of our situation as we progressed.

It soon became obvious to me that Mr X had a phenomenal knowledge of his terrain, a result of walking over every square inch of the vicinity. His intimate familiarity with every field and river bend extended to the people who lived and owned the farms and houses in the area: what they did; what their kids did; their current state of affairs and well-being.

Every now and again he would ask me a question regarding the sites we were visiting. He wished to hear my professional opinion, regarding me as a qualified and experienced lithic scatters expert, in light of the project. I felt completely unprepared for such questions, and appreciated that this man was far more qualified than myself to answer them. His knowledge of this landscape and specific locales within it was invaluable. Unfortunately he had become disillusioned with academics and professionals, who paid little attention to him despite his numerous papers since the 1960s. He had since moved onto other things as a result of this. A knowledge lost to the narrow minded.

Fieldwork undertaken by the local voluntary archaeologist who already has an intimate familiarity with the landscape in which s/he lives is closer to the actual practices, movements and experiences throughout prehistory, than the professional archaeologist, who lives away from the scene of fieldwork, commuting in many cases, and held within a framework of control governed by standards and strict methodological procedures. The most significant difference between the two, is the presence and degree of familiarity of certain landscapes experienced by each group.

The inclusion of the concerns of the local sector should not be seen as a benevolent act by the professional bodies, but should be embraced for differences of experience. Different forms of knowledge are created by different individuals. Ethnographers have seen the value in allowing local people to speak about their experiences and interpretations. This is the only way to proceed with a multivocal research strategy. Barbara Bender talks of the importance of recognising a variety of views concerning the landscape, specifically that of Stonehenge and its environs. Landscapes are not just "...differently understood and experienced but are differently privileged." (Bender 1998, 4). People can feel very differently about a place and a landscape. These themes extend to a feeling of property, power and the ownership of the past, as we saw above. Bender stresses that there are a multiple number of viewpoints from which to see a landscape. She acknowledges her subjectivity, and that all knowledge bears the fingerprints of its particular place and community (ibid. 5 - after Harding 1993). She also believes that:

> ...one cannot be objective but, rather than float on a sea of relativity, one can position oneself so as to ask questions and propose interpretations that seem relevant to contemporary concerns.
>
> Ibid. 5.

Within this framework, we must consider a number of voices, breaking any one authoritative view of the landscape or past down, allowing many voices and perspectives to be heard. In the case of the attitudes to lithic scatters and collections, there are many people who feel that they have a right to the material, the collection of it and the stories told about it. It is not only important to respect and consider all perspectives for the formation of a pluralistic and multivocal record, but to gain an intimate knowledge and understanding of a certain place.

The value of fieldwalking

In a recent publication by Historic Scotland (Barclay 1997), the state of archaeology in Scotland today is discussed, and suggestions of what future research proposals the archaeological community should concentrate on are given, in terms of the financial assistance available from state-funded archaeological organisations. This 'Archaeology Programme' touches on sites which are not dealt with by developer funded organisations and units.

One of the issues which is mentioned is the fact that there should be a more landscape based initiative: "The concept of the 'landscape' rather than the 'site' may be more appropriate in many circumstances" (ibid. 6). Indeed, in connection with the nature of lithic scatters, Foley writes that "the archaeological record of mobile peoples should be viewed not as a system of structured sites, but as a pattern of continuous artefact distribution and density" (1981a), and the same can be said of the material record left by later communities, as a large palimpsest of material has been created over a long period of time, hence stressing the need for a landscape approach.

The Historic Scotland volume also suggests that a broader picture should always be considered, "...through wide ranging projects covering large areas non-intensively, to identify regional contrasts" (ibid. 20). Finally, "...improved dissemination of information to a wider public, better grounding of archaeology in the community, and a higher national and international profile for Scottish Archaeology" is suggested.

At the Scottish Archaeological Forum held in Edinburgh in 1998, ("Planning the Future of Our Past: Scottish Archaeology After NPPG5"), similar themes were discussed in connection with developer funded archaeology and conditions affecting the archaeological resource under the planning guidelines outlined in NPPG5. Again, it was suggested that a landscape based archaeology should be attempted by a combining of works undertaken by individual bodies operating on similar private sector surveys and excavations, and that this information should be disseminated faster and wider than is happening at present.

The crux of these issues is stated in the former publication:

> The commercial pressure on archaeological units has also affected the extent to which non-professionals, particularly local people, can become involved with archaeological excavation. Small professional teams working under cost and time constraints cannot easily accommodate the voluntary input of local people. Where timing and resources allow, Historic Scotland can address this by setting contract or grant conditions, for example specifying local voluntary involvement (ibid. 15).

Obviously the last line is one solution, but in most cases this will not be possible.

Many of the problems inherent within archaeology today come about as a consequence of the divide discussed above. Well defined and organised fieldwalking programmes, such as those carried out by research institutions and some voluntary organisations, can do much to bind the diverse aspects of this community, if undertaken with care and attention. This does not solve the problems inherent with developer funded archaeology (ibid. 17), but gives a strong case for the power of field survey and relevance of field walking in today's climate.

Large landscape surveys should be seen as a continual relationship with the past environment - we will never have a 'real' picture or 'truth' about past activities and the intentions behind them, we can only interpret from our point of view. A landscape survey or fieldwalking exercise should be seen as a cyclical activity, paralleled with farming, where fields are continually worked on a seasonal basis. Fieldwalking can cover old ground - small discrete scatters will adapt and grow with the plough. New information may be gained about the physical form of the scatters, and perceptions of the place and space marked by fieldwalking. In a way, what we are creating is not a picture of prehistoric activities, but a relationship between ourselves and the landscape. An understanding of our environment may be gained throughout the practice of archaeological field survey.

This abstract way of illustrating the possibilities of fieldwalking has a strong connection to the fieldwork undertaken by local groups and societies. Intentions behind their acts may differ from those composed by other sectors of the discipline. It is the participation and physical 'doing' of field-survey which creates the awareness of archaeology and brings the realisation of the time-depth of the environment. The creation of scatters and upstanding monuments throughout prehistory was bound up within social relations between people and the land, the two fed off each other, and the permanency of these scatters and monuments feeds into the lives of archaeologists and people from all spheres today. The relationship we have with our landscape is constructed partly through the relationship we have with the archaeology we are striving to find during field survey.

These points should be considered when any fieldwalking is to be undertaken. The aims and intentions of the work should fit in with larger scale objectives; a fuller picture should be taken into account. The ease with which fieldwalking can be carried out and the scale of survey creates an ideal situation to get others involved. Work which is to be carried out in an area unknown to the researcher should be assessed in terms of the human resource and community in that area, as the possibilities of help and invaluable experience to be gained is great, for all parties involved.

> Historic Scotland has urged the extension of 'regional' umbrella organisations in Scotland, using the Tayside and Fife Archaeological Committee (TAFAC) as a model, to enhance communication, particularly in the light of recent Local Government reforms. Such a committee provides a forum for communication between local authority archaeologists in planning and museum services, educationalists, local societies, non-affiliated local amateurs, the representatives of national organisations currently working in the area (e.g. the Area Inspectors of

> Ancient Monuments, or field staff at RCAHMS), researchers currently working in the area, and interested members of the public. TAFAC runs a very successful annual conference to make current archaeology work available to a wider public, has co-ordinated the provision of educational material to schools in its area, has recently started a journal and is to begin to publish its own monograph series. This sort of forum is the natural seedbed for the creation or enrichment of locally relevant research frameworks.
>
> Barclay 1997, 17.

This quote gives an example of the amount of invaluable work which can be created from a typical forum under which separate organisations or parties can operate. Fieldwalking is the ideal way to create a similar union between researchers, local volunteers and the wider public. With the correct aims and objectives, this type of survey can go extremely far.

The above section has outlined the value of fieldwalking, as an ideal method of bringing together many factors within archaeology to undertake a large-scale survey of the landscape. It is not only the interpretation of scatters which is relevant to our understanding of the past, it is the activities involved in doing so which give us an understanding of the past in a present landscape.

Conclusion

This chapter began by looking at a paper by Richard Bradley that was concerned with the recognition of natural features and the role they would have played in prehistory. He argued that this concept, and the process of walking through the landscape, has a direct connection with the publics perception of place. Bradley recognises the powers of being situated in and walking through a landscape, and how our perception of the landscape has something in common with the concerns of people throughout prehistory. If we accept that people in prehistory may have understood and placed meaning on locations within the landscape through recognising lithic scatters, a link is made with the experience of recognising and giving meaning to lithic scatters today.

The way we understand a specific place comes from experiencing it and becoming familiar with it. As we work over a field and spend time in it, we gain a structure of feeling which creates the locality and an understanding of our world. As we discover lithics within the field, significance is given to that location. The process of fieldwalking over a specific locale, and understanding a place in terms of the lithic scatter which defines it, can be paralleled to the understanding and significance within certain points in prehistory, such as when the scatter was initially made and when it was (possibly) discovered afterwards through natural or mechanical manipulation of the soil. The production of locality in both instances act as a link, a governing telos. The intimate knowledge gained through the practical application of fieldwork creates an understanding of our world and the objects within it, and this understanding brings us closer to the way people may have related to and understood the same locale at times throughout prehistory.

A variety of meanings and experiences are created through these understandings of place. It has been argued that local people have a more intimate knowledge of certain locales, and are in a better situation to outsiders to document experiences and memories of that place. They also have a different perspective of that place, allowing a fuller and more pluralistic record to be created.

Practical way finding is based on habit, on a quotidian level of visiting fields. The local archaeologist will have stronger practical mastery of their environment than a professional who visits the area infrequently, although his/ her experience will build up over time. The difference between 'outside knowledge' and 'inside knowledge' is stressed; although the outsider comes into a location with specialist knowledge and training (even the support of an institution), the insider has a more intimate knowledge of the surroundings, especially of the location of scatters. These two experiences must therefore be combined to allow a fuller understanding of place, and consequently this understanding can be related to prehistory when combined with the material result of the fieldwalking process.

The divide between the local voluntary archaeologist and the professional has long been apparent. The attitudes concerning material culture, identity and rights of ownership have been demonstrated by a variety of letters to the author. The value of the local archaeologist has been seen, given their more intimate knowledge of landscape, and when situated in a framework of archaeology which attempts to eliminate bias in the future of the past, a multivocal and pluralistic record is suggested. Fieldwalking can be seen to act as a common factor to these agendas, bringing together the two communities.

From this analysis of the significance of fieldwalking and an understanding of the way the process of fieldwalking must be combined with the data within the database to produce interpretations about prehistory, we can move to a practical example of how this may be achieved. The following chapter considers the experience of fieldwalking, and the knowledge gained from it when set against the information already known for a specific scatter. The study of the lithics from a scatter which has been fieldwalked on a regular basis over the past century gives us only part of the story. We need to situate ourselves in the field to fully understand the place, and how activities my have formed there in prehistory.

Post-note on fieldwalking

My edition of the Chambers Dictionary (reprinted 1994, thumb indexed version), does not contain the word 'fieldwalking'. It should be in there between 'field vole' and 'field work', but it's not. The word is so specialised and peculiar to archaeology that it does not enter into this compendium. To walk a field is the basis upon which the majority of prehistoric sites have been discovered, whether through a farmer's serendipity, a local enthusiast's quest for the past or a researchers' desperate claims for some knowledge. Fieldwalking plays an active role in the discovery of new sites, and should be given credit for that fact alone. But it is not just the functional practicality which is important about fieldwalking. It is the process of discovery which makes it so appealing.

Figure 5.4

mud. Discovery.

Venturing out on a crisp February morning, grappling with the gate, striding out onto furrowed soil, with the intention of looking for traces of a past long gone (but so strong), fills one with a feeling of mystery and excitement. The prospect of discovering residues of a culture which have not been touched by a human hand for thousands of years creates a mystical link with that past. As the walking commences and each slow stride breaks the frozen shell of soil over which it passes, the mind is fixed to such a degree that the present dissolves and gives way to the imaginative past. The painstaking walk over hundreds of metres of sterile field may lead to a distracted consciousness and for a brief moment the present may snap into view, but as soon as a piece of the past is discovered, hair stands on end from the spark of imagination, and it seems like a connection has been made. With mind locked, I walked...

Chapter six

Dryburgh Mains

I had wanted facts, nothing but cold, hard reality, and now I had understood the most important fact of all - that reality doesn't exist without the imagination to see it.

Auster 1997, 416.

Introduction

The following chapter moves on from the argument presented in chapter 5, and shows how the experience of walking a field from a personal perspective, increases greatly the knowledge from traditional enquiry. The process of fieldwalking is outlined, a record of experience throughout is highlighted within the text. The data we create must be understood in terms of its construction through a variety of processes. Research acts should always be taken into consideration to situate the data within a social, cultural and historical network of contexts. This is achieved by recording the process of fieldwork, and allowing several opinions and experiences to be considered.

In addition to noting the processes at work in the construction of the data, we can perceive similarities between our actions and experience of the landscape, and those in prehistory. It was argued in the previous chapter that the process and experience of fieldwalking creates knowledges related to a sense of place and structure of feeling, and it is through being in the field for the duration of a fieldwalking excursion, that allows us insights into other relationships with the same place. The experience of fieldwalking can be used to create interpretations concerning the locale and activities within it when combined with the specialists training and specific knowledge of the lithic scatter.

The experiences from one fieldwalking incident are related throughout this chapter. It is attempted to show that just as much information concerning the past can be gained from the experience of walking than the material itself. Preconceived ideas about the scatter were formed before entering the field, and these led to prejudices concerning the activities there in prehistory. It became clear through being in the field and becoming familiar with the space of it, that it is more than just the artefacts and study of them which contributes to an understanding of place. The social landscape cannot be seen through the artefacts themselves, it is the process of 'being social' which allows interpretations to flourish. A combination of the two methods is necessary to gain an understanding of processes and meaning given to the place in prehistory.

The text throughout this chapter is divided between the traditional voice of the professional archaeologist, and the personal narrative of myself as fieldworker.

I had always been aware of the divide between theory and practice within archaeology, but it really only hit home as I engaged in the processes for myself, with my own agendas and goals already defined before mud stuck to boot. As the mud rose to about chest level, this theoretical divide became a personal practical reality, and I understood that the process of fieldwork and reasoning during this is constantly fluid and influenced by many undeterminable factors. To pretend otherwise would be to seriously undermine the process.

I also came to realise that what I had been 'feeling' in the field while walking and recording these scatters, was in part linked to their morphologies. A tight cluster of artefacts no more than 10 m^2 but with a large number of lithics appeared to be 'fresh' and 'new'. Indeed, after *enquiring about the number of times the field had been ploughed, or deep ploughed, the farmer would usually give a detailed account of the ploughing regime, supporting my theory that the land was not ploughed that often, and had only been deep ploughed once in the farmer's memory (since the 1950s).*

On other occasions, a widespread scatter of lithics would be recovered, seemingly evenly spaced across the large field. Sometimes a wide band of material stretched across the field, other times no dense clusters would be apparent. Tillage histories suggested that ploughing occurred on a regular basis, and had done for the past century at least. If the ploughsoil was lighter than other soils in the area, it suggested a shallower topsoil, and so again more subsurface artefacts would be cast above. A heavier clay seemed to weigh down on any lithics, only releasing them after a more aggressive ploughing. These scatters felt old.

The experience of being within the field, of spending time on a deliberately systematic task, walking over furrows, learning the various types and textures of soils, almost led one to believe that the thickness of the topsoil could be felt beneath your feet. The number of times I would stop, bend to peer at a stone or pick one up to wipe off some mud, catching a fellow walker out the corner of my eye doing the same, all created a rhythm which had its own unique pattern for every field. Sometimes this rhythm would pick up, as little was found, or people became bored, other times it would be extremely slow, yet exciting, as every second step pointed to a piece of chert or flint.

The practical reality, the physical mastery, learnt unconsciously through the practice of fieldwalking in different situations, added up to the 'feelings' which are hard to describe verbally. Indeed, the differences between each form of scatter was most likely understood to some degree, the practical recovering and recording lead to this knowledge. The more fields walked, the more scatters recovered, added to the weight of practical knowledge from which conclusions were drawn. This knowledge gained was experienced consciously by way of 'feelings' which were impossible to define at the time. These added up to more than any *expectations I may have had before entering the field. This was certainly true for Dryburgh Mains Farm...*

Desk-top assessment

Dryburgh Mains Farm (NT 59 33) situated near Newton St Boswells in the Scottish Borders, has numerous entries within the lithic scatters database. Many collectors have walked the fields around this farm over the past century (figure 6.1).

Figure 6.1 Fieldwalkers at Dryburgh

Site name	Map number	NGRE	NGRN	Donor	Date of work
DRYBURGH	NT53SE	59	32	ROBERTS, J	1901-27
DRYBURGH	NT53SE	59	31	CORRIE, J M	1924-26
DRYBURGH	NT53SE	59	31	UN	1927
MONKSFORD	NT33SE	58	32	UN	1927
DRYBURGH	NT53SE	59	31	MUNRO, A N G	1933
MONKSFORD	NT33SE	58	32	MUNRO, A N G	1934
MONKSFORD	NT33SE	58	32	STIRLING, T L	1935
DRYBURGH	NT53SE	59	31	MUNRO, W A	1936
DRYBURGH	NT53SE	59	31	UN	1936
DRYBURGH	NT53SE	59	31	CORRIE, J M	1937
DRYBURGH	NT53SE	59	31	UN	1947
DRYBURGH	NT53SE	59	31	MUNRO, W A	1950
DRYBURGH	NT53SE	59	31	UN	1951
DRYBURGH	NT53SE	59	31	CORRIE, J M	1951
DRYBURGH	NT53SE	59	31	LAMB, A	1951
DRYBURGH	NT53SE	59	31	BROWN, C J	1952
DRYBURGH	NT53SE	59	31	MUNRO, W A	1962
DRYBURGH	NT53SE	59	31	UN	1962
DRYBURGH	NT53SE	59	32	BROWN, C J	1962
DRYBURGH	NT53SE	59	31	FORSYTH, J	1964
DRYBURGH	NT53SE	59	32	FORSYTH, J	1964
DRYBURGH	NT53SE	584	322	ELLIOT, J W	1967
MONKSFORD	NT53SE	584	322	ELLIOT, J W	1967
DRYBURGH	NT53SE	59	31	ELLIOT, J W	1974
DRYBURGH	NT53SE	59	31	ST MARY'S SCHOOL, MELROSE	1974
DRYBURGH	NT53SE	59	31	MUNRO, W A	1975
MONKSFORD	NT53SE	5871	3248	MACKIE, E; MULHOLLAND, H	1975; 1970
DRYBURGH	NT53SE	59	31	BROWN, C J	1977
DRYBURGH	NT53SE	59	32	UN	1981
DRYBURGH	NT53SE	588	326	ELLIOT, W	1996

This history gives the site an elevated status within the lithic scatters database. Analysis of the lithic records for the site showed that there was certainly a mass of material from the site, suggesting large palimpsests of remains from occupation, or continual activity.

The earliest reference to the *archaeology* of the area refers to a mound called the Bass, situated on the north side of the river directly opposite the footbridge (Erskine 1836).

> Numerous interments of human bodies were found, all of them regularly placed, and many of them in Gaelic sarcophagi of four pieces of thin stone.
>
> NMRS NT53SE 5

Erskine continues with

> A stone hatchet was found the same year, on which Lord Buchan has put the following inscription:- 'Found on the Bass hill of Dryburgh, the place of ancient sacrifice and internment, amongst ashes, A.D. 1812 (signed) Buchan.'
>
> ibid. 170.

Lacaille includes Dryburgh in his discussion of the Stone Industries of Tweedside (Lacaille 1954, 161-167), and states that

> The principal assemblages of the relics of the Early Post-Glacial colonization of the Tweed Valley come from the farm of Dryburgh Mains...composed chiefly of artifacts turned up by the plough in 12 inches of sandy clay resting upon gravel on the fertile haugh-lands, about 20 feet above the river and barely 300 feet above sea-level.

The earliest reference to any *flaked lithics* in the Dryburgh area is given by T. Scott in 1894, who describes a flint object (of unspecified type), seven hammerstones, and a glass bead, all from Dryburgh (NT 591 320; NMRS number NT53SE 61; Scott 1894). The grid reference refers to Dryburgh village itself but suggests that the finds were from surrounding fields, rather than this specific grid reference.

In 1916, J.M. Corrie stated

> I desire to direct attention to some of the more interesting objects that I have myself obtained, at intervals during the last four or five years, from the ploughed lands of a restricted area in this parish.
>
> Corrie 1916, 311.

He in fact picked up the first lithics on Christmas Day 1911 (ibid. 311).

> The objects...are the industrial products of man's manipulative skill.
>
> ibid. 312

He accounts for numerous chert, flint, quartz and pitchstone flakes, spalls, "...which are the most numerous relics..." (ibid.307), cores, some of which are burnt, scrapers - "...of manufactured flint-like implements, scrapers are by far the most abundant." (ibid. 308), notched flakes, "It has been suggested that such tools were used in the making or straightening of arrow-shafts or in the fabrication of bone pins and needles" (ibid. 308), two small barbed arrowheads, and, 'pygmies' (ibid. 309), or as they are more commonly known today, microliths.

> These delicate little implements were believed to be the work of a pigmy race, and although the characteristic smallness of all the Dryburgh flints may appear to make

> the pigmy series all the more complete, I do not think it necessarily implies a relationship between the size of the implements and the size of the makers.
>
> ibid. 311.

Corrie also describes finding several hammer and anvil stones, made from river pebbles and which have signs of working -

> ...the pittings and abrasions are so distinct as to leave no doubts as to the purposes for which they had been utilised.
>
> Ibid. 312.

Implements dating to a later period were also uncovered: stone, sinkers, polishers or smoothers and stone "chipped wholly or partially round the edges from one face only" (ibid. 312), which are suggested as being pot lids, but Corrie feels they would be more useful as some form of large scraper.

Another fairly generous paper was written by J.G. Callander in 1927, titled "A Collection of Tardenoisian Implements from Berwickshire", and he describes a similar assemblage of Mesolithic lithics. He states that

> ...the implements are found in goodly numbers over a considerable part of the haugh land and on two restricted areas on the upper plateau.
>
> Callander 1927, 318

The article goes on to describe the implements and materials, again there are microliths, scrapers, flakes, blades and other waste chunks; made from

...flint, many of a green or green and brown chert, and others of chalcedony, quartz, jasper and even of baked claystone.

ibid. 318.

to which I assume he is describing mudstone.

The lid of the cardboard box felt tight due to a slight vacuum effect taking place inside. Once the air sucked in, the bottom thudded onto the table - the contents grinded like broken glass. I hesitated, hoping no-one in the room had noticed.

There were five clear bags inside, each containing a good handful of flints. I lifted one out, the lithics settled inside. It was much heavier than I expected. The faded, hand-written label said 'Flints from Dryburgh Mains, Borders'. That was all. Mind you, at least there was a farm name, most of the stuff I'd looked at so far had a provenance to 'Scotland' only, and that's when there was a label at all!

The plastic seals pulled apart easily, and I fingered through the contents. Some thumbnail scrapers, shiny and polished through years of handling, a sharp looking blade, with an edge which would slice through paper. I was surprised it hadn't made a bid for escape through its polythene prison. The lithics were pleasant to touch, smooth, cold surfaces where deliberate working had occurred. The dull grey reminded me of painting 'Air-fix' models as a kid, it had that same matt texture and shade.

Another bag had some paper wraps inside. I unfolded them and found three beautiful pieces of flint, reddish-brown and much smaller than the stuff in the previous bag. They were long and thin, needle-like, with rounded edges which had obviously been worked, little facets catching the electric light. I picked one up between my thumb and forefinger, it was so delicate, yet strong. The working on it was minute, it was difficult to comprehend the skill behind its creation.

Other subsequent references to collections which were either purchased or donated to the National Museum in Edinburgh, and are taken from these fields are:

> Collection of Tardenoisian implements from Monksford Field, Dryburgh Mains...four crescentic implements, 7 triangles, one trapezium, nine trapezoidal implements, 4 obliquely pointed implements, a curved blade dressed on one edge, 13 needle-like implements, 9 battered backs...
>
> Anon 1934, 19.
>
> Three notched Flakes of Flint and one of green Chert (encoches), broken across the notch, possibly in the making of micro-burins, measuring 13/16 inch, 13/16 inch, 5/8 inch and 7/16 inch in length, from Monksford Field, Dryburgh Mains, Berwickshire.
>
> Anon.1936, 16.
>
> ...two [notched flint flakes] from Dryburgh Mains, Orchard Field, Berwickshire.
>
> Anon 1936, 21.

There is then a jump of fourteen years to the next recorded findings:

> (1) Flint and chert Mesolithic artifacts from Dryburgh Mains, Berwickshire...Presented by W.A. Munro, D.Litt, FSAScot.
>
> Anon. 1952, 227.

and

(1) Collection of Mesolithic flint implements, flakes, and cores, also anvil stones, from Dryburgh, Berwickshire. By Adrian Lamb, Inverdunning House near Perth, through Mrs M. E. C. Stewart, FSAScot.

Anon.1953, 183.

In 1967 J. W. Elliot found "...many flint and chert tools...together with a great number of waste products. Two arrowheads were found; one a crude leaf-shape and the other a barbed and tanged type", (Elliot 1967, 49), adding to the growing volume of lithics which have been found from the fields.

I put the remaining flints into the bag and sealed it up, squeezing the air out by pressing the bag between my forearm and chest. I placed it on top of the others in the box and pushed the lid back on. I had compiled a summarised catalogue of the contents for the curator, as there had not been a record previously. I glanced down and saw my red pen scrawl across the paper - forgot to put it in the box. Lifted the lid again and stuck it inside. Someone's precious work thousands of years ago had been reduced to bits of stone in a box. The dusty room turned me to gloom...

I reckoned I knew the lithics fairly well, and had a good idea of what we'd find in the field. No doubt not much would turn up, there seemed to be so much already collected from the past century.

The next time the area is mentioned, is by Helen Mulholland (1970) where she refers to the Mesolithic and possibly Neolithic lithics "fifteen pieces of" at Dryburgh within her review of the Tweed Valley Mesolithic assemblages. Assemblages from Dryburgh are comparable to other Mesolithic sites in the vicinity.

A renowned Borders collector, Walter Elliot, has undertaken a considerable amount of fieldwalking along the rivers of this area, and he states that , "practically any field near the river-banks have some evidence of flint and chert workings", and that at Dryburgh Mains, "Mesolithic and Neolithic tools and waste [were] found in the river haughs in large quantities, barbed and tanged arrowheads not uncommon", (pers comm).

All this amounts to a vast body of material, deriving from the Mesolithic and later, represented by Neolithic and Bronze Age finds. Most of this material is housed in the National Museum in Edinburgh, with a small amount in the Hunterian, Glasgow and Hawick. There may possibly be even more bits and pieces lurking in dusty store-rooms elsewhere in Britain, one chunk of flint provenanced to Dryburgh was found within the James Roberts collection (dated 1901-27) in Perth museum by myself, and there must be a vast amount of material sitting on collectors and their offsprings' mantelshelves across the whole of Scotland, never mind the Borders.

A hoard of seven bronze socketed axes have also been found in the vicinity to the west of Eildon Mid Hill, (O'Connor & Cowie, 1987), and these were uncovered in 1982, adding to the other socketed axes from Berwickshire, Roxburghshire and Selkirkshire, of which there are over 35. Evidence from the Bronze Age in the fields which I was to walk was possible, simply due to the proximity of a possible burial mound on the north side of the river directly opposite the footbridge, as mentioned above with the quotes from Erskine (1836). Certainly the "numerous interments of human bodies" and their deposition in "Gaelic sarcophagi of four pieces of thin stone" (ibid) alludes to the Bass mound, as it is now called, having been constructed in later prehistory. What was it that made this field so attractive to so many over such a long period ? I assumed it was due to the wealth of material, ready and waiting to be picked up by collectors. But perhaps it was something else...I decided to check it out for myself, adding my name to the long list of walkers...

Fieldwalking

On a cold Monday morning in March, Andy, Hannah and myself drove in the white van (which was being a bit erratic - I kept having to fill the radiator water up - there must have been a small hole in the system somewhere) up to Wallace's Statue, so we could get a view over the *fields from the ridge on which the monument stands adamantly. It was one of those clear, crisp winter mornings, with deep shadows cast by the golden light. Wallace was basking in it. The light painted his sandstone flesh and dress with a living hue. As we approached him, the valley which had been obscured by the edge of the ridge suddenly came into view. We stood beside the Scottish hero and admired the expanse of land which stood at his feet. I remembered a moment from a book, 'The Cultivated Wilderness' by Paul Shepheard, where he came across a similar statue in Glenfinnan - "It has the oddness of an urban thing in a wilderness landscape" (Shepheard 1997, 100). Wallace epitomised the museum bust, set overlooking a wild landscape which had other potential museum pieces within it. Our shadows leaned towards the Eildon Hills in the near distance, three proud massive bodies, which seemed to cut through the stratus clouds lining the sky (figure 6.2).*

Figure 6.2 Pointing to the Eildon Hills

The view was framed by isolated Scots Pines, crooked and battered over centuries of wind-twisted growth. Below us lay the fields of Dryburgh Farm, nestled into a crook of the Tweed. I imagined looking down on a group of hunter-gatherers setting up fish traps across the widest part of the river, bracing themselves against the current. Some children watched earnestly as their parents instructed them with precise movements. They seemed excited to have a go *themselves. A woman knapped in privacy, her back turned to the sun to shade her work. The high pitched 'ting' of blades peeling off a well shaped core could be just made out from our vantage point. Some kids imitated the noise, running around the knapper with glee. They interrupted her rhythm, and she scowled at them as they ran on their way. She tossed the prepared core of chert away, and picked up another chunk from inside the bag next to her.*

My imagination was cut short as I noticed a man in waders, casting into the slow moving water with concentration. A seven thousand year jump in five seconds (figure 6.3).

Figure 6.3 Fisherman in the River Tweed

In a Peninsula of 52 acres, formed by one of the great windings of the Tweed, commonly called the Crescent of the river, in the south west nook of Berwickshire, stands the venerable Ruins of Dryburgh Abbey - the towering peak of which forms a very conspicuous object in the landscape, from the post road leading from Edinburgh to Jedburgh - from the former of which it is 36 miles distant and 10 from the latter. The Tweed in all its course is not the boundary between England and Scotland; here, it only divides Berwickshire from Roxburghshire, and it abounds with salmon, trout, eels and fresh water fish of every kind.

Erskine 1836, 1.

The 'haugh-lands', as they are described by J. M. Corrie (1916, 307) of Dryburgh are situated about 5 km south east of Melrose, and about 1 km east of Newton St-Boswells. The fields nestle into a bend of the Tweed river which runs north to east at this point. The fields are also enclosed to the east by a steep incline which rises from 70 to 181 mOD near to Bemersyde House. Wallace's statue, erected in 1814 by the Earl of Buchan, dominates the ridge.

4 km to the west can be seen the Eildon Hills rising from the relatively flat surrounding land. These hills are composed of igneous trachytic rocks, and are surrounded by a large area of post glacial deposits consisting of boulder clay, made up of "grey or red stony clay, sandy in places, containing cobbles of greywacke and sandstone" (Ordnance Survey 1983; 1985).

The Drift edition of the Geological survey map sheet describes the past geological history, and states that during the "...last glaciation, the district was entirely covered by the Southern Uplands ice-sheet..." and on retreating deposited alluvium which lies in most valleys. The haughlands at Dryburgh show various levels of plateau, the back of the fields closest to the river (which were ploughed) had a rise of 2 m and the soil grew progressively stony at this point. This represents a terrace of post glacial alluvium which has subsequently been cut through by the river. A second dip in the field, closer to the river, seemed to mark out an old river course.

The anticipation of discovery pulled us away from the view and we returned to the car, with fieldwalking at the front of our minds. It wasn't the actual 'fieldwalking' which I was looking forward to, but the possibility of coming across prehistoric remains. That moment of discovery, when you see something you think is genuine, bend down, pick it up and touch an element of the past. For a split second it is as if the person who had owned that thing has reached out and passed it on to you.

We drove back down the way we had come, into Dryburgh village, and on along a single track road which ran parallel to the river. It stopped at the foot of Bass Hill, Dryburgh Mains farm was on the right and the river to the left. I wasn't sure whether to leave the van here, *and walk the few hundred metres to the ploughed fields, or whether to drive through the farm buildings and along a track, which looked pretty muddy, although the puddles were frozen solid. We reckoned the best thing to do would be to go and ask the farmer, and I wanted to tell him we had arrived. I had called into the farm the day before to check it was OK for us to walk the fields. The farmer was fine about it, and knew a bit about what had been found before by various enthusiasts. He said that there were people coming to walk across the land almost every year, and they always seemed to find something or other. He wasn't quite sure how much or what had been found recently, but told us that we may be lucky because no-one else had been around since he had ploughed a couple of weeks ago. There were two fields open, the rest had already been planted, and he preferred it if we didn't walk them. Oh - and yes it was all right to park on the verge of the track, the puddles weren't too deep.*

His toddler daughter waved us goodbye as we scurried back to the van. Her red boots stomped around the muddy yard, and I kept a careful eye on the wing mirror as we drove away. After parking on the verge he had mentioned, we jumped out and looked at the fields. The first one lay on our left and looked BIG. This field was the one next to the field in which the Bass Hill sat, squat like a sleeping dragon curled up into a neat, round ball and covered by a blanket of trees. It certainly seemed like a good place to have a burial mound, in a secure, sheltered but prominent position. This location was ideal for a camp or settlement: a sheltered place with lots of room, and plenty of light. Although sheltered in the nook of the river, it was also possible to gain a grand vista from the ridge where we had stood earlier. No wonder the place was so popular with fieldwalkers today.

Scanning the furrows of the field, which seemed so alive in the glow of this low sun, the green and brown conifers in the distance marked out the edge of the river, and the peaks of the Eildons bobbed up beyond this pine belt. The sky was clear and fresh, dabbed with occasional cirrus. Behind us was another cropped field, and rising up from its far edge was the stage on which Wallace stood gazing down on us. This south west facing ridge curved round and met the river ahead of us, the two appearing to seal us into an island of flat fields.

There were seven fields in all, and the largest and third largest had been ploughed about two weeks ago, so the rain and frost had weathered the biggest clods down and hopefully exposed more material. It was decided to walk the largest field first, knowing that previous find-spots lay here, and no lithics had previously been recorded from the other field. A fence ran straight along the track side of the field, and this was taken as the base line for the grid (running approximately NNE). Ranging rods were then marked out every 50 m with bamboo canes every 10 m between them.

It was decided to walk 5 m intervals, and so canes were placed down the left hand edge of the field every 5 m, so as to orient each walker during the course of the survey. Each walker was given a letter, sequentially from 'A'. The furrows were relatively straight, and it was agreed to walk along them. Every time a lithic was found, it would be bagged, and rather than marking the spot for subsequent surveying, the position would be marked on the bag there and then, along with the relevant letter of the walker. This position would be within a 5 m square, so had a 5 m accuracy.

Andy suggested this technique, as he had used it before and it seemed fast and efficient, while staying fairly accurate. It proved to be really good, as long as decent enough measurements of the field boundaries were made and tied into a map.

We set out and stopped at each bamboo cane, letters A, B, C. I was C. Didn't know what we would find but was hopeful to uncover the old scatter. The farmer had said there was stuff in the field, too, and that no-one had walked it since he ploughed this year. Expectant. Excited. Beautiful fresh March day. Even if we found nothing it was still exhilarating being outside in this gorgeous valley, surrounded by

reds auburns yellows greens browns rusts maroons oranges olives

and to hear the various sounds of the valley *gurgle*

whistle

tweet

crunch

of my footsteps as I stared with a determined intensity at the soil, which seemed to hold some clue to the past of this space we were studying. It was cold, very cold and biting, especially when the wind built up now and again, I forgot to bring my gloves, and so stuffed my hands into jean pockets. I remembered I had my great big oilskin waterproof trousers with me that I had bought in Shetland last summer at this great fishing store, but they were in the van - I would wait until we stopped for a break. They would keep the wind off. My mind came back to the soil, different patterns, here and there, clumps of earth thrown up into a stark relief from the sunlight which hit one edge and cast the other into dark shadow. A good 20 minutes past, although it may have been only 2, my sense of time had warped. I was starting to think that maybe there wasn't anything in the field at all, and that we had somehow made a mistake. Or maybe I just wasn't seeing anything, and there was lots of flint and chert which I kept walking past, or that I'd completely missed as my mind kept wandering around different thoughts. I looked nervously across at the other two. They hadn't found anything either, and I felt less paranoid. Anyway, I knew from past experience that this doubt always crept into the psyche when nothing was found. If there is anything here, we will see it, I thought to myself. Chert and flint give themselves away, their shine shouts out. I kept my head bowed and studied the soil, my eyes bouncing from one thing to the next.

TWIG SOIL BROWN HORSESHOE DOWN GLASS TWIG

EARTH MUD CARCASS PEBBLE FROST SOIL

STONE FEATHER PLASTIC SOIL STONE LUMP LEAF

WIND CRUNCH STICK SOIL RIDGE BRIGHT HOLE

TWIG SOIL BROWN MUD GREY DOWN GLASS TWIG

EARTH MUD CARCASS PEBBLE FROST SOIL STRAW

STONE FEATHER PLASTIC SOIL STONE LUMP LEAF

BONES LEAF STONE SOIL **CHERT** *TIN SHARP GREY*

WIND NECK STRAW SOIL RIDGE BRIGHT HOLE

EARTH MUD CARCASS PEBBLE FROST SOIL STRAW

CHERT *STONE FEATHER PLASTIC SOIL STONE*

BONES LEAF STONE SOIL TIN SOFT GREY SHELL

LEAF STICK SHADOW SHIVER SOIL SAND TWIG

EARTH MUD CARCASS PEBBLE FROST SOIL STRAW

STONE FEATHER PLASTIC SOIL STONE LUMP LEAF

WIND CRUNCH STRAW SOIL RIDGE BRIGHT HOLE

TWIG SOIL BROWN HORSESHOE DOWN GLASS TWIG

EARTH MUD CARCASS FROST SOIL SOIL TIN SOFT

BUMP COLD CRISP STONE SHADOW SOIL **CHERT**

Wait a minute, I saw a piece of chert there, something sharp. I scanned back quickly, there it was, I bent down to pick it up. Yes, it was a chert flake, excellent. I shouted to the others, "got something !" and they ran across. I felt like a kid who'd discovered a lizard or something new and special. Except this was a new old thing. I wiped the mud off the flake and saw it had some retouch along one edge...right hand side of the ventral...good bulb...small bulbar scar...prominent ripples...small platform with facetting...it was a retouched blade, removed with indirect percussion, and...I realised this analytical process which I was running through was making the chert blade into something completely different. I was putting my own labels onto the object , and it quickly lost it's mystery as my initial excitement diminished I was losing the sense of place suddenly, as if knocked into a lab. But it was still pretty amazing and the nervousness and paranoia I had felt while walking before was eased, I relaxed and started looking for more.

That moment though...that moment of discovery...the sudden glance at an object and excitement as you bend down to pick it up and clear the soil from it...that is what it was all about. Once the piece had been bagged and given a number, it changed it somehow. How was it possible to hang onto that moment and take it home ? Photograph...what if I photographed each piece as it was spotted, before it was even touched ? And then I would have a record of each moment. Each moment in time when a material element of the past was cast into the present to reawaken a long lost culture or activity. So that's what I did, every time one of us found a piece, I ran across and took a photo of it, lying there on its canvas. It would be possible for me to reconstruct the scatter in photographs...or deconstruct the scatter, as it wouldn't be the true scatter, but a new scatter...the old scatter in a different light, put into a new context, the context of my thesis. I could scatter these images throughout my finished work... (see figures on each title page of thesis) The idea left my head as I found another piece...

We started to find a lot of stuff, it all seemed to be in one area near the end of the field. Mostly blue chert, blades and flakes, a lot of waste, but some flint and a couple of cores. Andy found a scraper, a real beauty. It all appeared to be Mesolithic stuff, which would *confirm the previous reports. This was great, we had found the scatter which had been continuously walked since the beginning of the century. I had started to doubt our abilities before.*

It struck me that we were removing another skin from the life of this scatter, we were skimming off another layer of archaeology as amateurs and enthusiasts had been doing for the past hundred years. It didn't quite seem right. Would it not have been better to leave the lot in the field? Could we not have recorded it all there? I considered this for a while, as I had done before, the same thought came back to haunt me frequently.

A rock is not independent of its surroundings. The way it sits tells how it came to be there. The energy and space around a rock are as important as the energy and space within. The weather - rain, sun, snow, hail, mist, calm - is that external space made visible. When I touch a rock, I am touching and working the space around it. In an effort to understand why that rock is there and where it is going, I do not take it away from the area in which I found it.

Goldsworthy 1985, 4.

I decided that in this case, our destruction of the scatter was totally justified, as I would be studying each piece separately in the lab back at Glasgow, and would be compiling a detailed catalogue on the whole assemblage. This material would then be useful as a comparison to the previous assemblages collected from the same field, and further information may be gained from it. Specific research questions would be answered by detailed analysis.

And we carried on, until hunger took over and we walked back to the van for lunch. The rest of the day carried on in the same vein, with over a hundred pieces having been found, and by the time the light started to fade, we still had the bottom end of the field to walk. It had been slow going because of the intensity and accuracy of the grid on which we were recording. We decided to call it a day and continue in the morning...

Field One NT 587 324

There were 96 pieces in total from this field. The majority of the assemblage was chert (77.1%) with the remaining pieces flint. Most of the lithics were waste flakes, blades and chunks, with 5 cores showing signs of working on site. Finished tool types were represented by 23 retouched pieces (24% of total), 7 of these being notched blades and flakes (30.4%). There were also 2 microliths and 2 scrapers. Only 3.1% of the assemblage was made up of decortical pieces, which does not suggest a great deal of core preparation on site, and the large number of inner flakes (86.5%) suggests that blades and finer reduction took place here. These assumptions are very hesitant however, as a fraction of the overall material record has been collected during this field walking exercise due to the state of the scatter and its dispersal. As is always the case, any hypothesis drawn from an analysis of the material within a surface scatter is possibly irrespective of the whole; and this should be considered in any subsequent interpretation. However, this must never limit what is said about the material record.

Distribution

Looking at the plan of field one (figure 6.4), the densest concentration of lithics lies at a point to the far right of the field, approximately 60 m across (through hedge line SE - NW), and 10 m wide. This is made up of 38 pieces (40% of scatter) and is cut by the hedge dividing this field and the middle one. The largest part of this scatter is possibly in this central field, which was not walked. This concentration may be taken as a central point of the scatter, from which long-term tillage effects have spread material, (A in the plan). An alternative suggestion is that the concentration may have formed *subsequent* to the deposition of the lithics, and may not be a

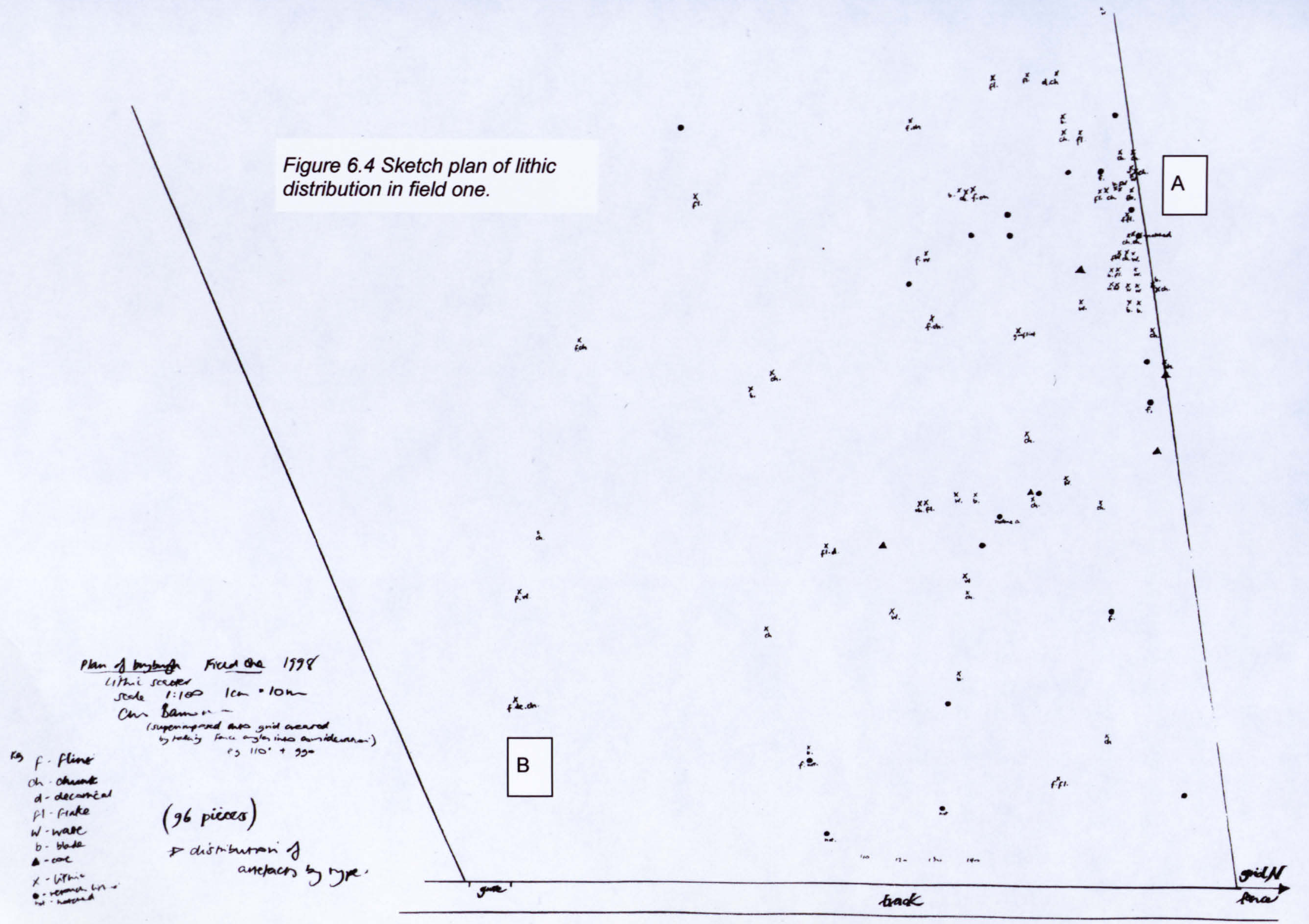


Figure 6.4 Sketch plan of lithic distribution in field one.

direct indication of dense activity. It may be a result of artefact displacement due to tillage processes. Turning to Boismier, he reveals that in a terminal state, the last state a heavily tilled scatter will experience, "little or no surviving behavioural content" will be present on the surface (Boismier 1997, 241), meaning that little relationship between surface position of finds and subsurface features will be present. Given that this scatter is in or near to a terminal state, it may be assumed that the concentration we are seeing in the field may have formed through tillage processes over a long period of time.

However, if we do take **A** as the hypothetical central point of the scatter, we can note that the furthest piece from here is approximately 220 m away (**B**). Distribution is spread fairly evenly from the central point, the concentration of pieces drops off the further away from the centre.

A spatial analysis of artefact types shows that 11 retouched pieces (48% of all retouched pieces) are close to or within the densest concentration, and the rest are spread from here north eastwards to the track, (marked on the plan as triangles). One other piece lies closer to the river. The cores are spread evenly throughout with no clustering evident, as are the rest of the assemblage, made up of waste, flakes, blades and chunks. There is no apparent distinction between the artefact types within the concentration and those spread throughout the rest of the field. Material type is also distributed evenly.

This scatter can be described as being in a terminal state, using Boismier's terminology. There are three main factors which contribute to this theory:

1. the field lies on *intensively farmed land* and has therefore been under crop on a regular basis for a long period.
2. lithic material has been collected on a regular basis *at least* every ten years (since 1901 at regular intervals, the longest gaps being between 1937 - 1947 (Second World War: much ploughing but little walking), 1952 - 1962, and 1981 - 1996: see figure 6.1) showing that the scatter has been substantial for the past 100 years.

3. the shape of the scatter is typical of a terminal one, being evenly spread with oval morphology, and having disparate edges. Other diagnostic factors of a scatter in a well mixed form are a good mixture of tool types and association with topographic features, in this case the river (Boismier 1997, 241). Both are true, with tool types well mixed and a linear band having formed parallel to the river (or old river course).

The next day was just as cold, and I made sure to wear my waterproof trousers. As I put them on, I somehow managed to rip the plastic buckle which kept them from flapping around as they were really wide at the top and needed to be held in a bit tighter around my skinny waist. I was kind of proud of them in a way, they were good quality and had seen a few digs and fields since I'd bought them. In some way this damage symbolised my impatience to get them on, and it felt as if I had initiated the ruin of this garment, as it would now experience a slow decline over the coming months and years.

I convinced myself it wasn't that bad, just a bit annoying because it meant they were very baggy now, but at least they would keep the cold out. I also found a wee charcoal hand warmer which I had stuck in my bag while packing at the last minute. It was a bit impractical given that I had to keep picking things up, but it reminded me of Rachel as it originally belonged to her granddad. In a way I was holding her hand as I clasped the warm case.

We finished off the end part of the first field, and only found a couple more bits. We were closer to the river, and it did seem as if there were less lithics in this area, although my eyes may have been deceiving me and the light was changing. It was possible, however, that there was an old river course which separated the lithics from this area. I pondered this as we finished the last section. We walked back along the edge of the field and took down all the canes and ranging rods on the way (figure 6.5).

Figure 6.5 Pondering Dryburgh

The second field had a rise at the end nearest the track, and dipped down quite considerably onto the flat area which stretched to the river. It was smaller than the first one we walked, and we decided to walk it on a 10 m interval, as we only had that day to complete it. The same methodology was used despite this change. The base line was taken along the fence which ran down the left side of the field. I didn't actually think that there would be much in this field, certainly not as much as we found the day before, but that forethought probably came from my knowledge of a previous paucity in the scatter record for this field.

We started walking and walking with heads bent down to the ground and backs rolled over twinging the muscles which had been tested the day before our heads pendulating, scanning the earth, each bump and each hump every shadow cast. Step slowly forward a metre or so to each side. Left then right, right then left, eyes expectantly eyeing to see if there was anything, a clue - a material residue - poking its abstract head to the surface of the muddy clods of earth brown and rich with life and forward slowly head still swinging. Stop for a moment and look around. Stretch those strained muscles. Take in the view. The sounds of the landscape snap into hue. And then continue along the furrow keeping the same distance from the others so as not to cross or fall off course, and keep a mental note of where in the field, which position, where we are, which cane was closest, and going back to the ground and scanning again and walking each step at a time and burying hands in pockets as the cold wind blows stronger and holding Rae's hand. Looking up SUDDENLY AS A TORNADO JET ATTACKS US FROM ABOVE. Then instantaneously disappears. .. Probably training for the Gulf. Hope they don't go in; what was it *that drunk Yeltsin said? A Third World War? there must be more to it than meets the eye you know. And then snapping back to the task at hand, mind wandering and annoyed by the ripped off toggle on my oilskin, waterproof trousers, which are flapping about and was that one? No just a bit of slate looked like chert hands back in pockets and looking at the others and checking my position and continuing on shaking clods off my feet which feel like lumps of meat - beginning to get quite heavy but must just keep a look out for those wee bits of the past which have been tossed into our time by the plough as it crashes and grinds over the land and rips past activities into the present. I think about beats: and the pace; of the walking; and the edge; of the field; comes close.*

And we swing round and continue. A new line now. And back along the field again and stepping on like this is that a bit YES and I bend down and pick it up. The rhythm of the walking stops momentarily as I examine the stone. I get a bag from my pocket. Wrong one, other side. Where's that pen? There it is. Damn. It won't write. Come on, heat it up, and there we go and I write on the bag, what's my letter again, and I'm starting to lag due to this pen, and where am I? count up the line of canes and that's it and write on the bag place in my pocket stand up and stretch and get those hands warm exposed them for too long and wonder about this methodology. Is this the best way to be recording the scatter?

And wonder-and-wander-and-plod-and-clod.

We found a lot of material along a wide band, half-way down the field. It was like walking across a bar after a Western brawl: everywhere you looked there was broken glass which had to be cleaned up. Our synchronic tempo slowed as we passed over this barrier; and we could tell when the band of lithics waned from our increased speed, as if a blockage in a water pipe had suddenly been cleared.

The assemblage of roughly three hundred pieces followed the same pattern as the collection we uncovered from the first field. The band lay to the front of a dip in the field, which on further examination appeared to be the old river course. My pondering had been correct. The soil became much sandier here, which added weight to my theory.

When we reached the bottom of the field on the first run, I spoke to a fisherman who was standing by the river. He was very interested in what we had found and hadn't realised that the lithics we were finding were so old. He worked on the estate and told me that this part of the river was one of the best parts of the Tweed for fishing. Opposite where we were standing was a shallow ford which had been constructed by Premonstratensian monks in the 12th century, and who had artificially raised the bank on which we were standing, to create a deeper pool at this point in the river meander. This had enhanced a natural pool which formed here, and made fishing with baskets and nets more efficient. The man chuckled and said that this spot had obviously been used for thousands of years as an ideal fishing ground. He seemed proud to be part of that history, aware that he reinforced it as he cast his fly onto the slow moving water.

Field Two NT 585 328

The second field had a total of 339 pieces. 41 (12.1%) of these were flint; 5 (1.5%) jasper; 3 (0.9%) quartz; and the majority of 290 (85.5%) were chert, of varying quality and colour ranging from light blue to blue/grey and darker blue/black. Mottled red stains occurred on many of the darker pieces. The lighter blue chert appears to have a much more plastic character, and conchoidal fracturing is more pronounced on these pieces. The darker fabrics tend to have a higher percentage of natural fractures along fault lines, which is common to radiolarian chert (Finlayson 1990, 44).

There are many natural pebbles represented, 11 of which have had flakes removed which may indicate that these pieces were tested for their quality. This represents approximately 12% of all the chunks and pebbles from field two, many of which may be natural but which were not overlooked during this fieldwalking exercise. The amount of natural material lying in the soil and along river edges is great, and access to this would presumably be straightforward. Indeed, Lacaille states that "...river and drift pebbles were employed" in his discussion of Dryburgh and other scatters from the area (Lacaille 1954, 163). It seems that nodules and lumps would have been deliberately taken from these occurrences, rather than quarried from outcrops. Windblown trees, river banks and hill erosion would no doubt accommodate raw materials, specific places being returned to within the daily cycle of movement through the landscape.

There are a large number of cores (32, 9.4% of total assemblage), suggesting knapping on site, and the amount of waste, especially of inner tertiary flakes and blades, is also indicative of this. It would also be apparent that secondary core working was carried out over initial core preparation, if an interpretation is drawn according to the proportions of primary flakes to inner ones. 6.2% of the assemblage was made up of primary cortical flakes, compared to 20.1% and 73.7% of secondary and tertiary flakes respectively. There will always be a larger number of secondary and even more tertiary flakes however, as a core is reduced. Retouching was seen on 59 pieces (17.4%) of the assemblage, with 27.1% of these being notched (figure 6.6). There seems to be a large number of notched flakes from this collection as well as the assemblage from the previous field, and this holds true with previous findings (Mulholland 1970). It is possible that these tools were therefore used to work wood or other material connected to fishing. The notches may be associated with hafting techniques: situated in the context of a riverside location, renowned for its fish stocks throughout history, it does seem a likely explanation.

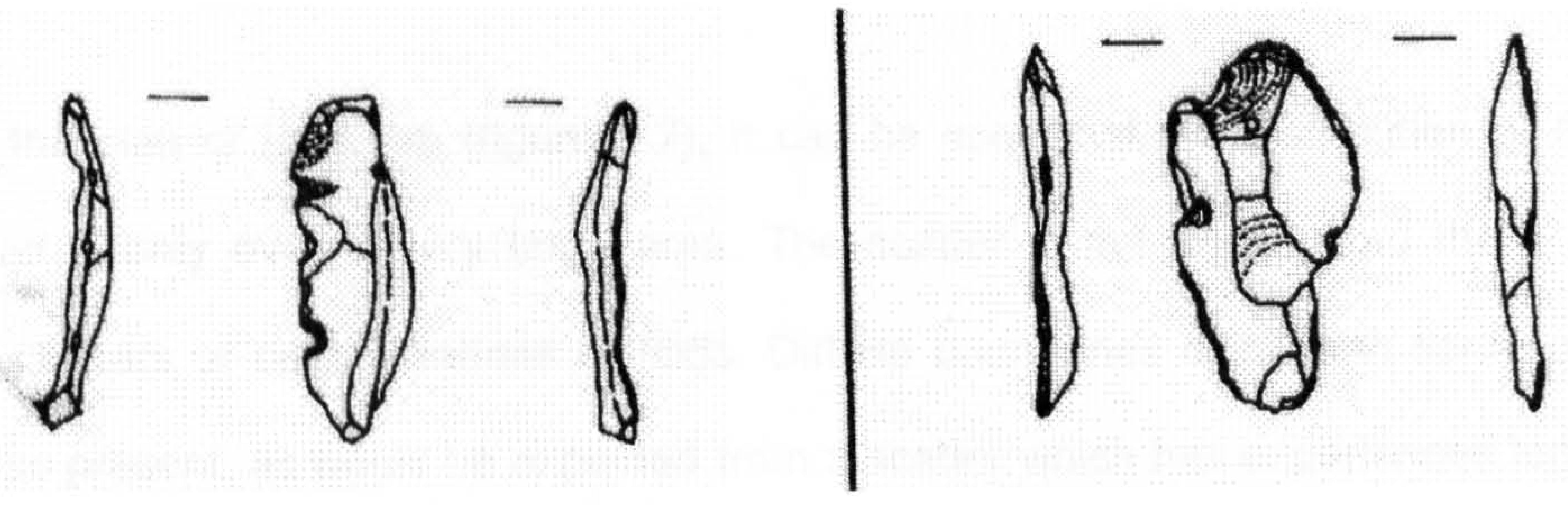


Figure 6.6 Notched flakes from field one (actual size)

Comparing the statistics with those from field one, we can see similarities:

Type	**Field One (% of total)**	**Field Two (% of total)**
Cores	5.2	9.4
Blades	19.8	17.7
Flakes	39.6	42.2
Chunks	34.4	27.1
Primary	3.1	6.2
Secondary	10.4	20.1
Tertiary	86.5	73.7
Retouched	24	17.4

The two assemblages have similar numbers of lithic types and therefore the hypothesis that they are of the same, larger scatter extending into the central field and spread throughout the three fields, is supported. Alternatively, similar activities, producing the same structure of tool assemblages, may have occurred over time at a number of locales spread along the river bank. However, mixing of this material would presumably have been carried out by tillage activity prior to the erection of the two present field boundaries.

Distribution

Looking at the plan of field two (figure 6.7), it can be seen that the distribution of finds is again spread evenly over a very large area. The scatter is not dense, and there are no discernible clusters or concentrations of finds. Diffuse boundaries exist, with some outlying artefacts also present, as would be expected from a scatter which has experienced long-term tillage (as above).

Artefact types are equally well mixed. The majority of cores are spread in a linear band roughly parallel to the fence line, and 20 m away from it. There are also a number of retouched pieces in this area, but these spread to the north and any clustering is ephemeral. Flakes, blades, chunks and waste are spread throughout the scatter area. Notched pieces are spread across the width of the area, as are the other diagnostic tool types, such as the scrapers (i.e. 325 rough end; 515 thumbnail, figure 6.8). Material type may indicate some patterning. The five jasper pieces (one retouched; others are waste, marked with a **J** in the diagram), are situated within approximately 80 m of each other in a band 40 m across, to the bottom right hand corner of the scatter area (north east). This may suggest that these pieces originated from the same spot. The flint pieces show no signs of patterning and are spread throughout the whole scatter area.

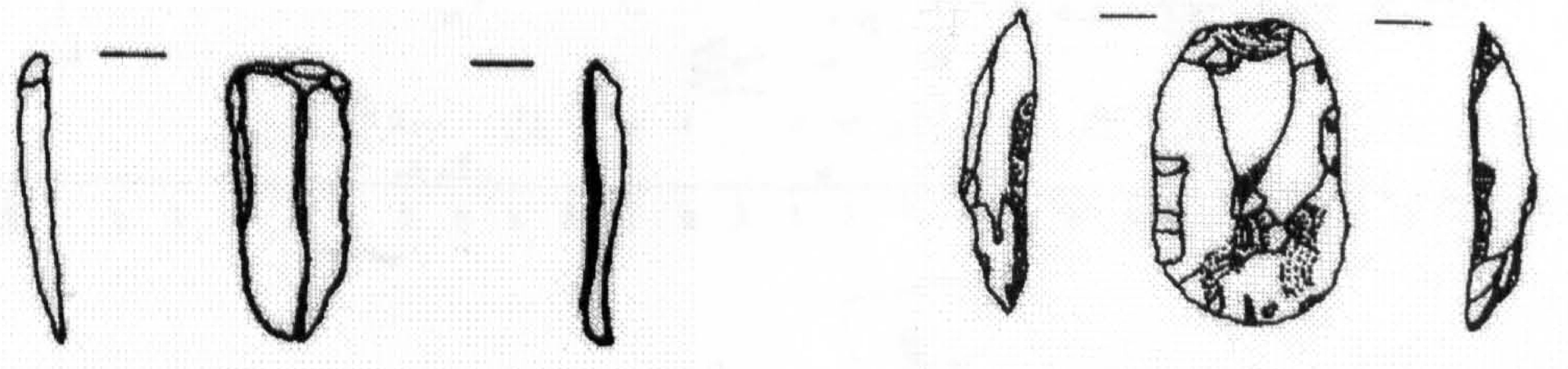


Figure 6.8 325 rough end scraper; 515 thumbnail scraper.

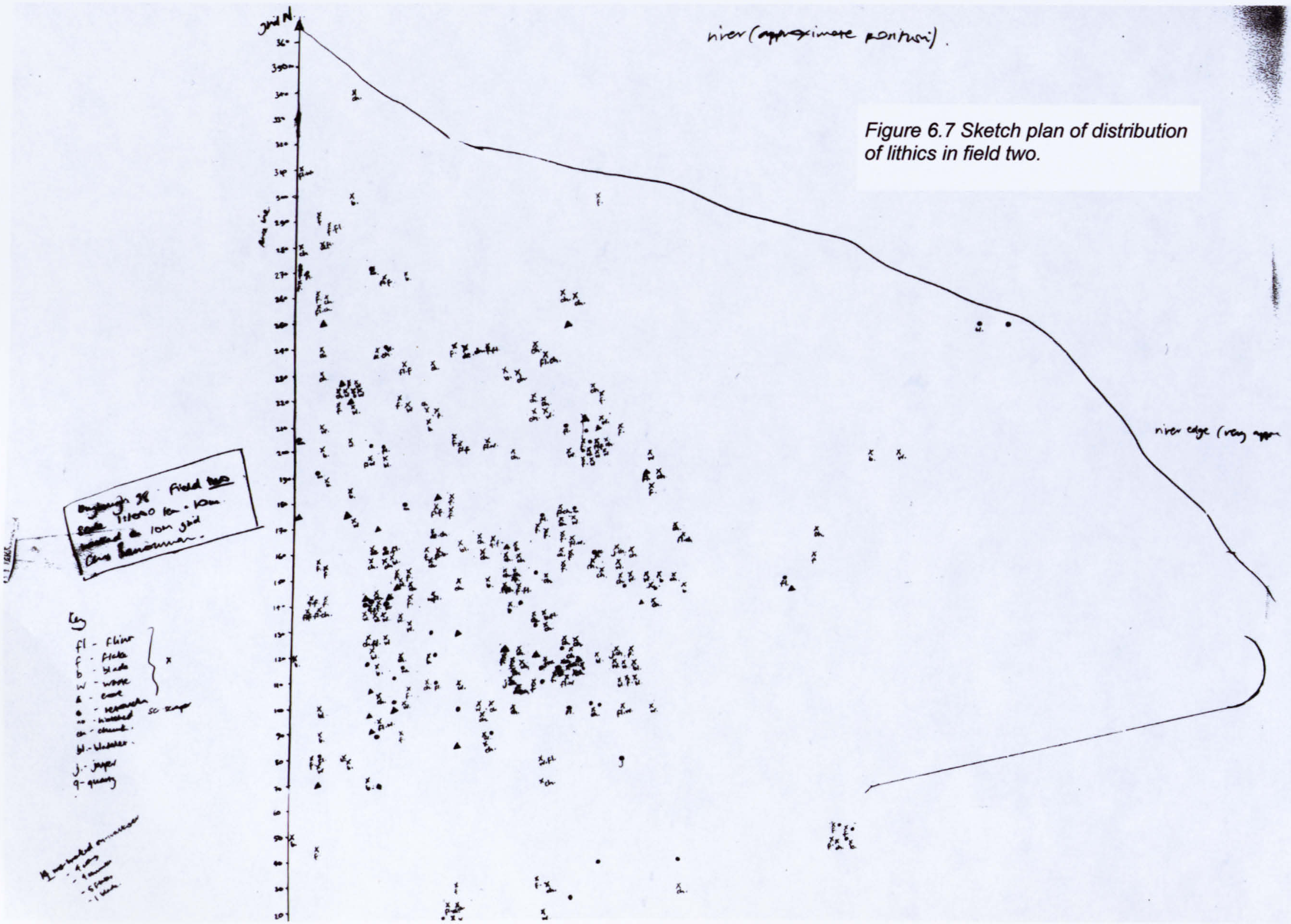


Figure 6.7 Sketch plan of distribution of lithics in field two.

The scatter has obviously been heavily influenced by tillage processes, and has a uniform circular shape, although if the expansion of it into the middle of the field is considered, a more oval or linear band may be apparent. The scatter lies at the foot of a glacial dump to the top of the field, at the north east side nearest the track (figure 6.7), and is bounded by the old river course represented by a linear dip approximately 0.5 - 1 m deep, which has a much sandier soil within it. This dip lies towards the rivers present day position. There is a spread of artefacts into this dip and onto the higher land at the top of the field, and it is suggested that these are patterns induced from tillage and natural processes, rather than activity spots. There will undoubtedly be a migration of artefacts into the dip due to soil creep (Allen 1991, 45) and tillage processes will contribute greatly to this.

Although the physiology and confines of the scatter probably reveal the history of tillage characteristics rather than any original prehistoric contexts, the topographic nature of the fields and the scatters relationship to this may reflect a more prehistoric dimension. If we take the evidence as representing a Mesolithic hunting camp or series of camps, for example, we can see that they are positioned next to a river course which is renowned throughout history and today as having great fishing stocks, and we can therefore postulate that this is one reason why they may have stopped here in prehistory. There is the possibility that the scatter began as one discrete patch on the edge of the river, and subsequent generations of people shaping material created a palimpsest on the same spot. A century or more of mechanical tillage effects have spread this along the river bank and created what we see today. Boismier finds that terminal scatters will tend to associate themselves with topographic features through tillage effects (Boismier 1997, 241), and an alignment with the river may be interpreted as this. It may also be the case that the scatter represents a series of already mixed and overlapping activity zones strung out along the edge of the river, which have consequently been mixed and merged further, and ultimately scattered in not only an expanded linear form, but a wide one too. The ploughing direction of this area would almost certainly have switched several times, and so material will have moved in all directions, as occurs under an orthogonal or cross cultivation tillage pattern.

It may be possible to postulate areas with *no* activity from looking at blank parts of the scatter pattern. A band along the river of approximately 60-70 m is void of any material, and this confirms the suggestion that the material originated from the edge of the linear dip which represents an old line of the river. Subsequent tillage action has moved the material down into this, but the majority still lies on the edge.

Driving back to the cottage in the van, I felt warmed now that I was out of the biting wind. My face glowed. I looked forward to getting back and starting a fire.

My assumptions from before the fieldwalking had been completely wrong. I doubted there would be any lithics in the fields at all, thinking that most stuff had been picked up already. I certainly never imagined such a beautiful spot when I had been stuck inside the museum, looking at some previous findings from the field. The reports I had read had given limited information on the actual situation and aspect of the landscape, and only referred to the lithics themselves. And we had found many more flakes and waste than I thought would be there, only ever having read about and looked at the nicer artefacts from these fields.

And the colours of the lithics as your eye catches a glimpse of them ! Not just the "greens" and "browns" that I remember being described by the previous collectors, but really "GREEN" and "BROWN" - vividness enhanced through the thrill of discovery and being there in the field amongst these artefacts! Amazing! How wrong a picture, how far off reality I had been.

Summary of scatter morphologies

Comparing fields one and two, it can be assumed that the majority of the artefacts will be situated in the middle field, as there are diffuse edges on either side of each scatter. The two field boundaries cut right through the respective scatters. As has been mentioned no walking was undertaken in the middle field - permission had not been given as it had recently been sowed. A search for lithics from the wrong side of the fence was undertaken, but none were spotted amongst the new shoots. Previous findspots are located within this field, and so it can be confirmed that both scatters continue into this field, but whether they join or not is impossible to say accurately. As has been mentioned above, it is probable that any linear spread of artefacts will have been induced by the effect of tillage processes mixing an existing line of prehistoric activity areas alongside the original river course.

No subsequent analysis of the fields were carried out. Information that would have been gained by undertaking geophysical and geochemical analysis may have added to the small amount of information already drawn. Test-pitting and trial trenching may also have revealed subsurface archaeology or denser artefact distributions within the topsoil, although the information that would have been gained would probably have been minimal. The history and morphology of the scatter suggests that any surviving subsurface archaeology will be badly damaged, if present at all. The number of artefacts which have been collected from these fields over the past 90 years is great, and continues to grow. Any further material which is uncovered through test-pitting would no doubt be a reflection of the patterns visible on the surface, as the ploughsoil and its contents have been churned around so often.

It is very probable that all the contexts have now been destroyed, and test-pitting may reveal nothing. Geophysics may indicate deeper deposits which have been untouched by the plough, but the large amount of material cast up over the past decades suggests that the archaeological contexts were probably fairly shallow and are now destroyed. Only deeply cut features remaining, albeit heavily truncated (Lacaille gives a measurement of 12 inches as the depth of the "sandy clay" ploughsoil here, (1954, 162)). Only a large area excavation over the scatter site would confirm the hypothesis that the subsurface archaeology has been transformed into a scatter distributed throughout the ploughsoil, parts of which will constantly be revealed on the surface after every future ploughing.

Conclusion

Much information concerning the lithic scatters was collected through the walking of the fields at Dryburgh Mains. A number of lithics were collected, and surveyed into a grid. The morphology of this scatter was investigated and, given the agricultural history of the land, it was assumed that the scatter was in a terminal state. The variation in artefacts may indicate that settlement and a variety of activities occurred here throughout prehistory. The scatters situation suggested that fishing and processing may have been undertaken.

Now that's quite good, but much more was gained from the *experience* of the fieldwork. People were met who lived on the land and understood it in a different way to us. Some of their knowledge was imparted to us. They told us about the ploughing, about the previous walkers whose quest for a piece of the past had come before. We learnt of the fishing along this part of the river, and understood the love that these people had for this valley and all it's beauty.

The presence of the natural environment came alive. Frustrations felt throughout the fieldwalking process were acknowledged, and accepted as part of the process of enquiry. Memories and pangs of emotion were recognised. Doubts were discerned. The motion of walking, through space and time, was perceived. In essence, the 'data' collected and presented as dull tables and lists of percentages mean nothing, without the experience to support them. They were formed from that experience, and recognition of it should be made.

I had looked at some material, read everything there was to read about it, studied the reports. I knew exactly what was going on. Then I walked with these (unknown) prejudices set up in my mind. They fell away at my feet as I experienced the space of the field. I didn't find lithic reports or data. I found traces of past lives and activities, people experiencing the same hillside, river, rain, wind and everything else which was there. In effect the lithics I found were inconsequential to the ability to know the presence of past lives.

It was the experience of walking, of being in that landscape, which connected us to the lithics, to the scatter, to the creator(s) of that scatter. My expectations dissolved as each step made history.

Is it then possible to gain the same ground with the data in the database as it stands ? What of the faceless people behind the information which can only be hinted at (chapter 3) and not fully recognised? Ultimately it is the author who interprets the process and the data: it is *my* experience which is communicated through the telling. The data must thererfore be accepted as it stands, and combined with the experiences of the author to present and create interpretations of past events.

The following section of the thesis will run through the whole process of enquiry which has been set out over the previous six chapters. The information contained within the database will be investigated and analysed within a specific landscape setting. This limited and biased information will then be combined with the author's personal experience from the field, allowing interpretations to be created.

Section two

The Southern Pentlands area

The thesis has so far pointed out the value of the lithic scatters resource in south and central Scotland in terms of its formation and mass of information (chapters 2 and 3). We have seen the usefulness of surface scatters when situated within a social framework, allowing landscape itineraries to be created (chapter 1).

The problems inherent with the data within the database have also been pointed out, and it was seen that the process of discovery, the acts responsible for interpretation of the data, had to be recorded and considered, placing the data within a social, cultural and historical context. There are many faces behind the creation of the scatters, these can be seen to some extent by looking at the source material, but this does not allow us to understand the formation of the information collected by each collector. The experience of fieldwalking however, goes further in that it allows us to view the process of data formation, the interpretative manoeuvres which fill the field.

Considered through a personal perspective, it is possible to intimate the processes which form a sense of place, and structure of feeling for the field and landscape. A familiarity is formed with the scatter location and surroundings. These feelings are in some way isomorphic with the ones experienced by other collectors and people in prehistory. Through an analysis of the data, and a record of the process of discovery, we can use our imaginations to intimate stories concerning the past.

The information within the database is of ultimate value in considering past activities spread across the landscape. On a large scale, which we saw in chapter 3, specific patterns of scatter remains cannot really be seen. Rather than understanding prehistoric activity and seeing people on the landscape of south and central Scotland, we see patterns of *contemporary* activity and landuse. It is necessary to look at smaller locales in more detail, to understand possible landscape itineraries.

This has been undertaken in chapter 7. The 'data' is set within a historical and social context of collection. It is situated within a landscape, and related to the topography, the rivers, the natural environment. Patterns discerned from contemporary land uses are considered, as are forms and incidences of collection over recent time. These descriptions give a fuller understanding to the formation of the data for the area, from which analysis of the information can be accepted and referred to prehistoric activity, in terms of distribution and contents of specific sites.

However, the movements, understandings, and perceptions of the people whose activities the lithic scatters refer to, are still absent. To give meaning to the stones, personal experience through fieldwalking and spending time in 'the field', is necessary, as we saw in chapters 4 and 5. The description of a more detailed analysis of a specific scatter within the area is considered in Chapter 8, allowing the process of fieldwork to be outlined and the experience of being in the field to be reiterated. Geophysical survey, phosphate analysis and test-pitting of this scatter allow more specific information to be gained concerning the activities occurring at one specific location in prehistory. There are many flaws inherent with the way we relate all these instances of analysis in final reports, the process of interpretation throughout the fieldwork process will therefore be considered throughout this chapter.

Although fieldwalking over areas of a landscape forms a sense of place within the fieldworker, more intense work at a specific site increases familiarity with that place. These knowledges gained can be reiterated in the telling of the tale; stories about prehistory can be dressed with personal experience of the fieldwork (chapter 9). Other people play a part in the fieldwork process, although their tales may not necessarily be told, at least their perceptions of the landscape and place can be considered by the author. Ultimately a multivocal and pluralistic record should be sought, by giving voice to these peoples experiences.

A year in the Southern Pentlands (chapter 9) will include a combination of the experience of this fieldwork, and the analysis of the scatters seen in chapter 7. By looking at further scatter concentrations across this landscape, it is possible to postulate and imagine social activity, landscape itineraries and taskscapes, throughout prehistory.

Chapter seven

A rock in the rain

People change

Here I am just a rock in the rain

The world is always rearranging,

And I don't know if I can

I'm just a rock in the rain...

Mark Ramos-Nishita 1998.

Introduction

The 'data' situated in the lithic scatters database will be considered for a specific area in south and central Scotland. A description of who, when and where the scatters were found, allows a social history of collection to be seen, as we saw in chapter 3 for the whole of south and central Scotland. The difference with this chapter however, is that the data is more manageable when a smaller locale is considered. Being situated in this area through the course of fieldwork also qualifies the author to reflect on the experiences produced through this work (chapter 8), using it in combination with the data outlined in this chapter to create narratives concerning life at times through prehistory (chapter 9).

The Southern Pentlands area has been defined by national grid squares NT04, 05, 14 & 15, centring on the South Medwin Valley and the southern slopes of the Pentland Hills (figure 7.1). An abundance of finds and scatters have been uncovered in the vicinity in recent years (Clarke 1989; Ward 1993, 1995, 1997, 1998) and there appears to be a concentration of prehistoric monuments within this area. A detailed study of the lithic scatters from here was therefore deemed useful in deciphering various relationships between the lithic scatter evidence, upstanding remains and modern day land use patterns.

Figure 7.2 gives a map of the area showing the main topography and rivers. The map overlays indicate scatter locations. The scatter sites have been broken down into size and period. Size is distinguished by circles of varying sizes: the smallest circle (5 points) indicates single finds; increases of 5 points at 10, 15 and 20 points refer to small, medium and large scatters respectively. An additional overlay acts as an index to the sites, referring to figure 7.2.

The periods are separated by colours on individual overlays. Mesolithic scatters are red, Neolithic are blue, Bronze Age green and scatters of unknown period are in magenta. Where a scatter has only a four figure grid reference (i.e. NT 04 48) a circle has not been inserted - the site name is given in the corresponding period colour. Size of scatter is not indicated for these less well provenanced scatters. A four figure grid reference provenance's the scatter to the nearest 1000 m, so the information is not very helpful when considering relationships between scatters and other entities, especially as it is unknown exactly where the scatters were recovered from within this area, if they were at all. Most of these have been recorded by the finder to the farm name, and so it is usually this which appears on the map. It has been assumed that they were found in close proximity to the farm. They have been included as an indication of numbers and rough location only.

General distribution pattern

Looking at all the overlays together, it can be seen that there are two main concentrations of well provenanced scatters, one covering an area approximately 6 km^2 at Weston (centred on NT 03 45) and the other across a smaller area at Melbourne (NT 08 43).

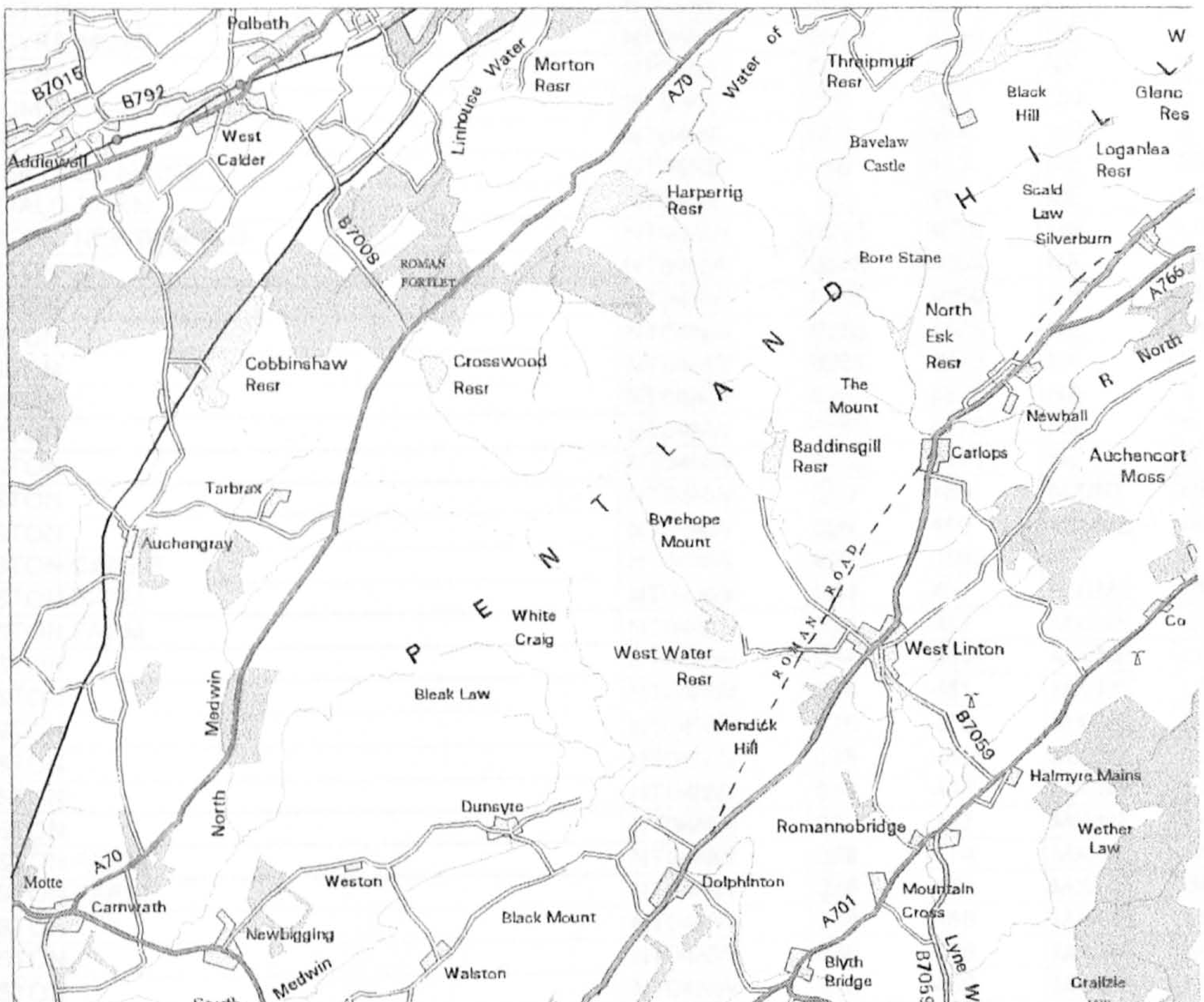
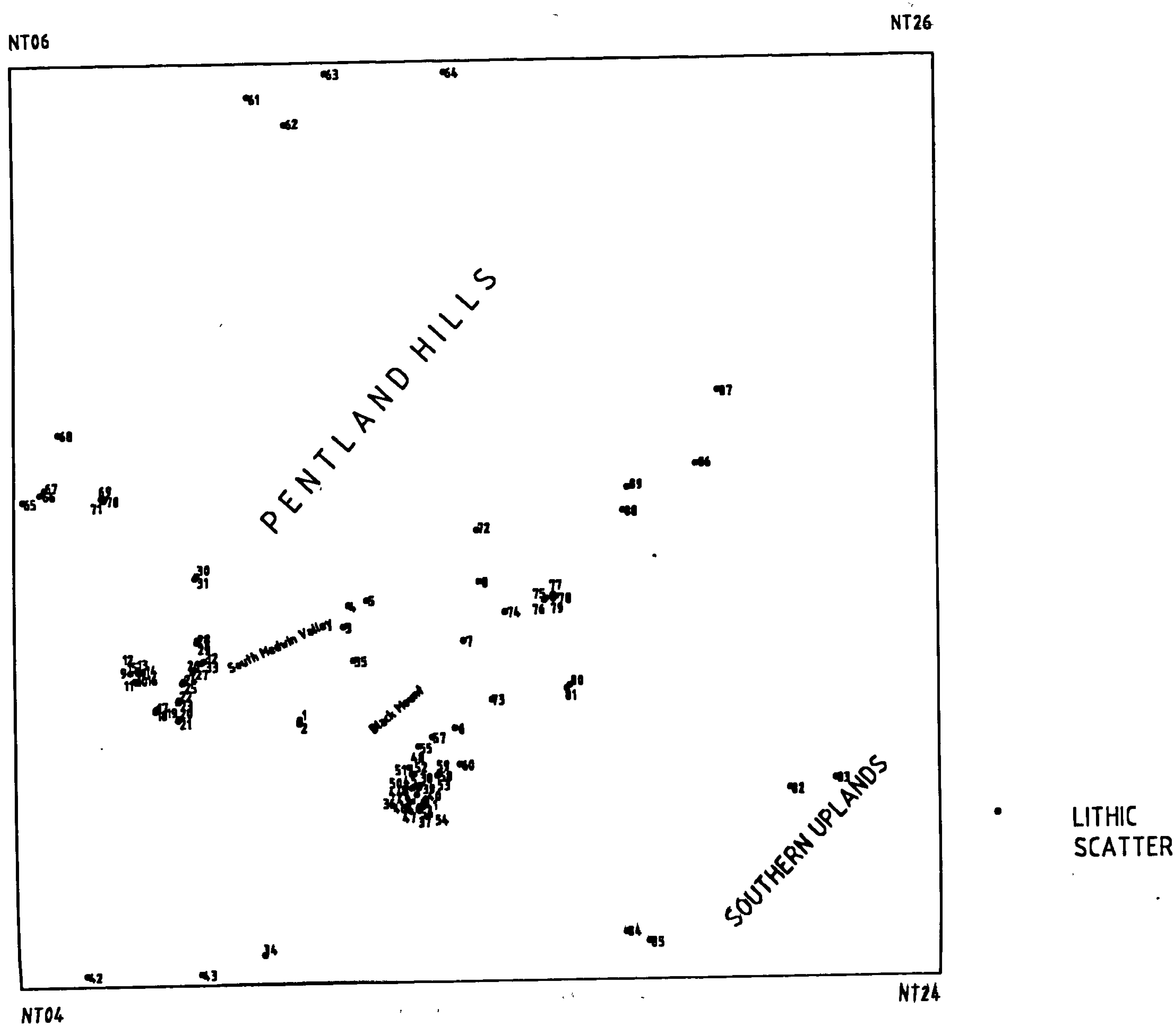


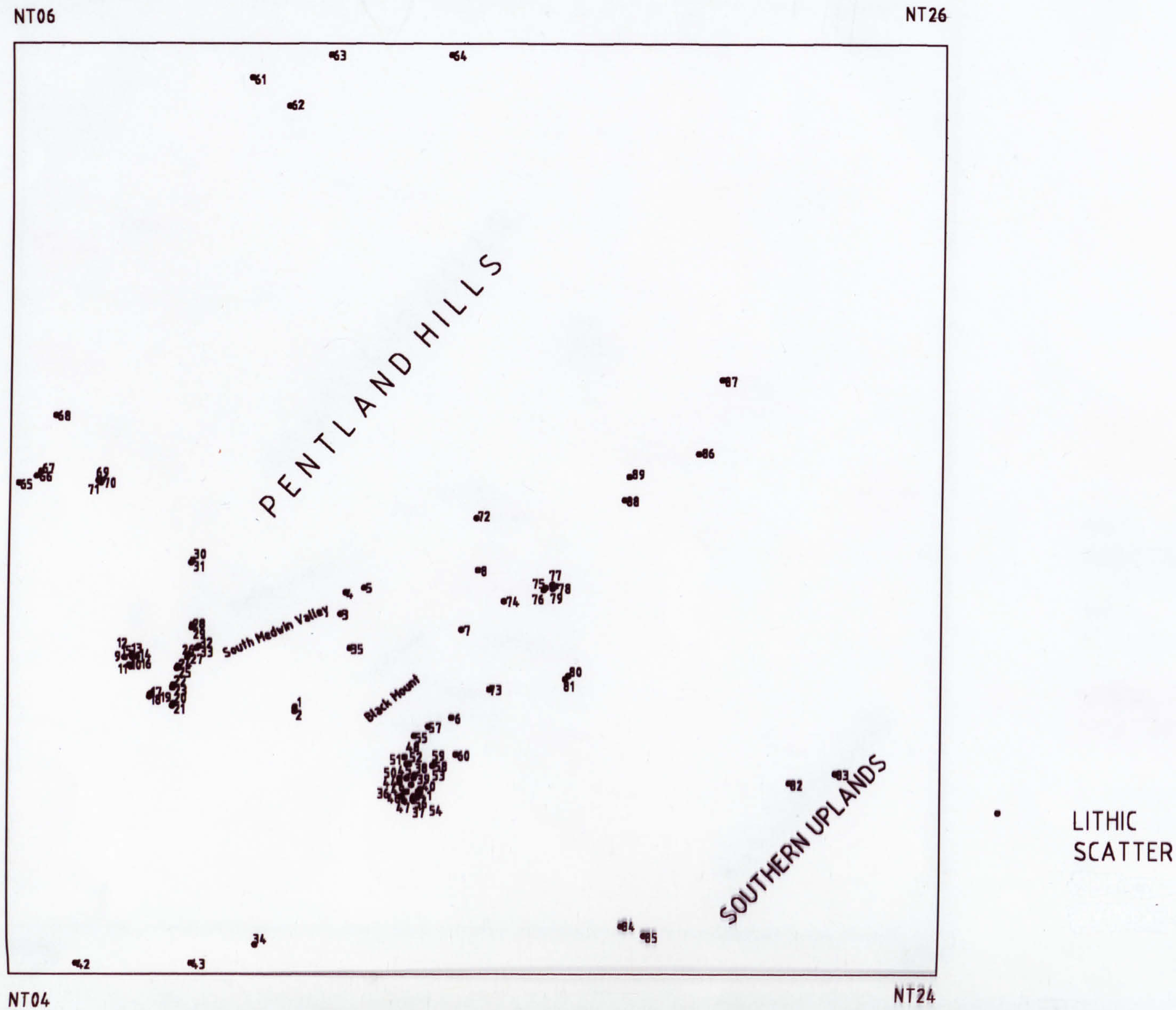
Figure 7.1 Location map of Southern Pentlands area

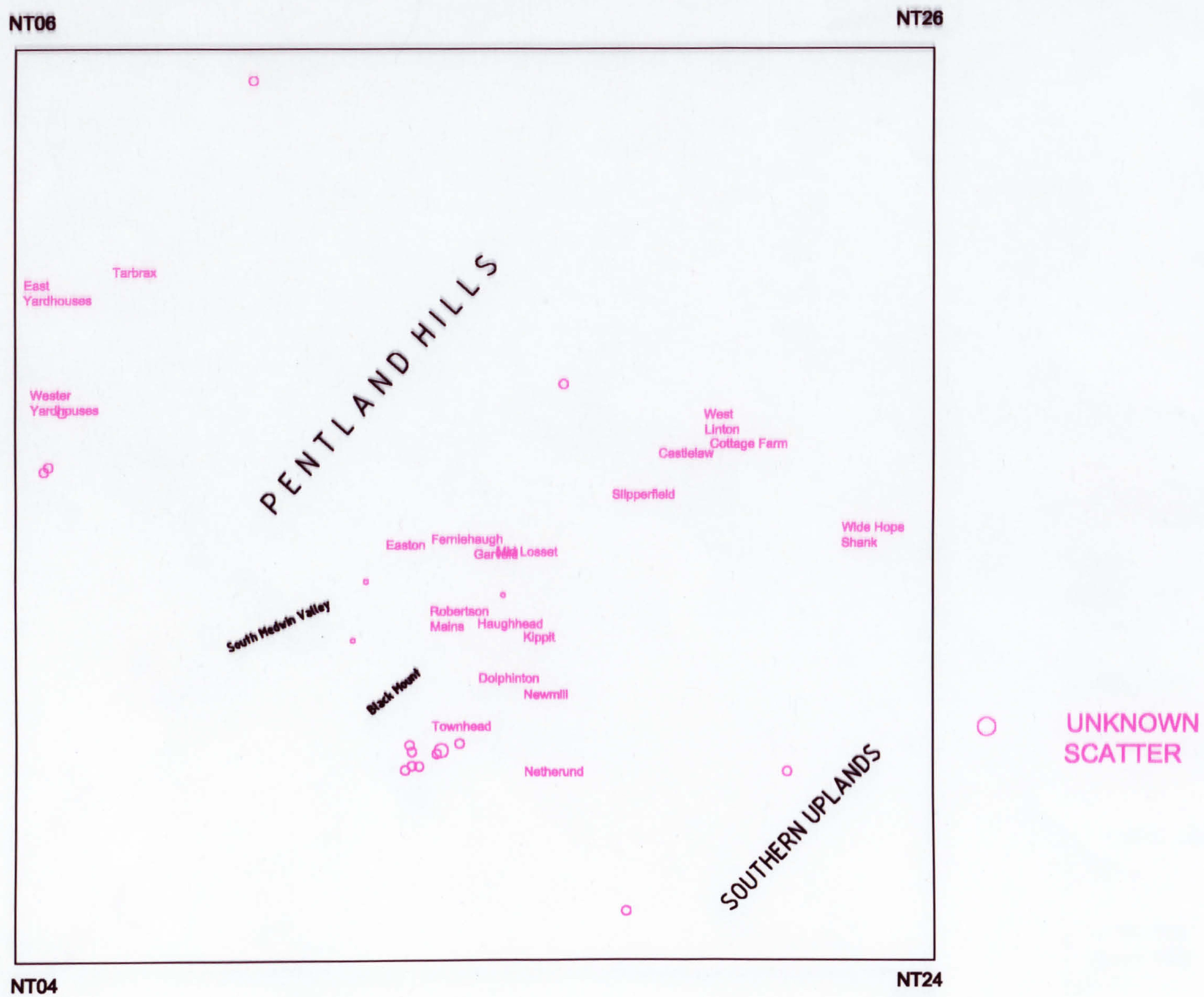
Figure 7.2 Index to scatter sites in Southern Pentlands area (accompaniment to map)

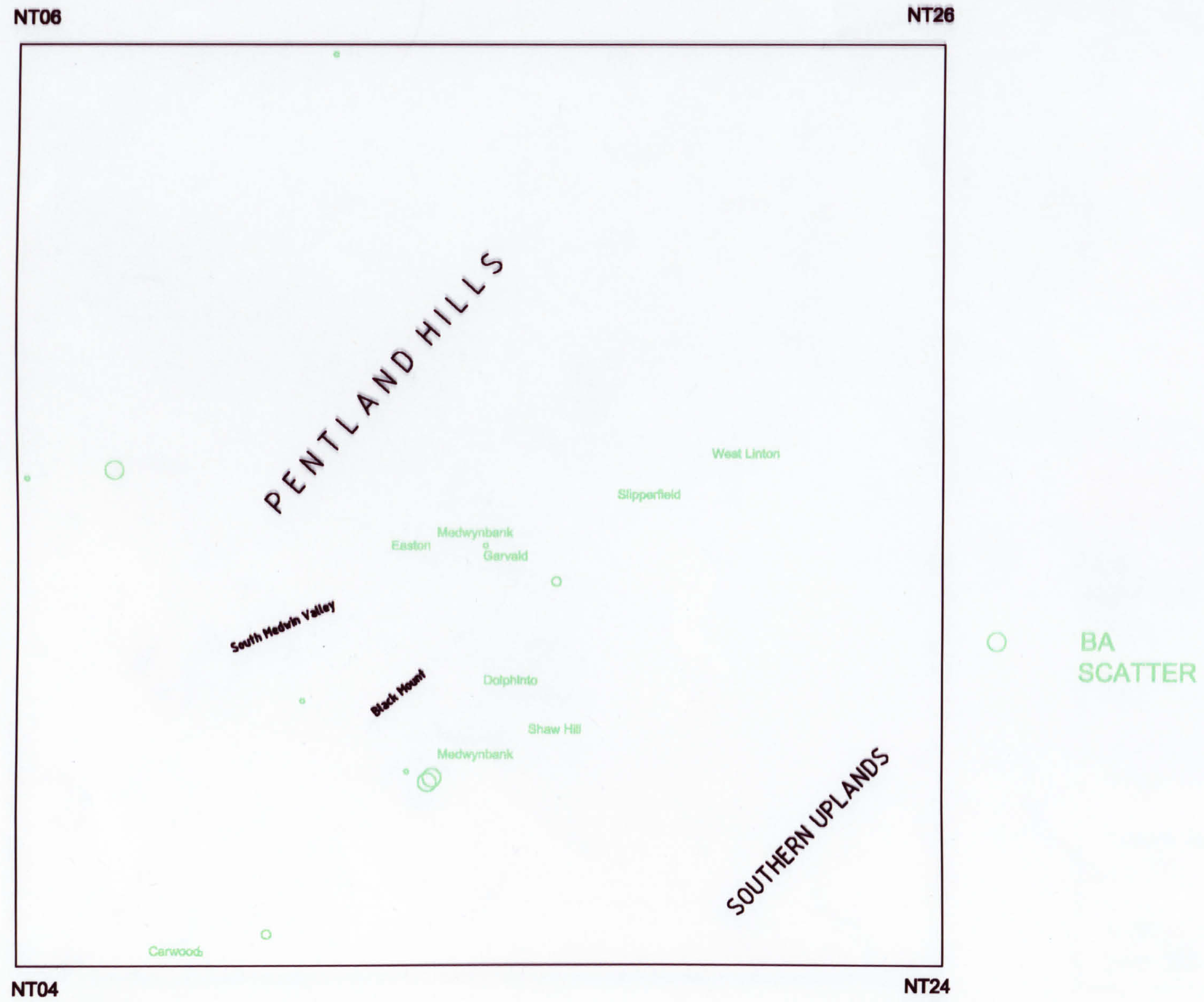
No.	Site name	Map no.	NGRE	NGRN	Period	Size of
1	WALSTON	NT04NE	060	456	EBA	S
2	WALSTON	NT04NE	060	456	EBA	S
3	DUNSYRE MOSS	NT04NE	0699	4764	NE	S
4	DUNSYRE	NT04NE	071	481	NE	S
5	BROOMIE LAW, FIELD D	NT04NE	075	482	UN	S
6	BANK	NT04NE	094	454	UN	S
7	ROBERTSON MAINS	NT04NE	096	473	NE	SM
8	GARVALD BURN	NT04NE	102	485	ME	LG
9	WESTON, NEWBIGGING	NT04NW	0235	4670	ME	LG
10	WESTON	NT04NW	0245	4653	NE	SM
11	WESTON	NT04NW	0248	4650	NE	SM
12	WESTON	NT04NW	0250	4675	NE	SM
13	WESTON	NT04NW	0251	4673	NE	S
14	WESTON	NT04NW	0252	4670	NE	S
15	WESTON	NT04NW	0252	4678	NE	S
16	WESTON	NT04NW	0262	4671	NE	S
17	WESTON	NT04NW	029	459	MX/NE	MD
18	WESTON	NT04NW	029	459	MX/ME	MD
19	WESTON CAMPS	NT04NW	0293	4592	NE	S
20	WESTON FARM	NT04NW	034	457	MX/ME	SM
21	WESTON FARM	NT04NW	034	457	MX/NE	SM
22	WESTON	NT04NW	034	461	MX/NE	LG
23	WESTON	NT04NW	034	461	MX/ME	LG
24	WESTON	NT04NW	035	465	MX/ME	LG
25	WESTON	NT04NW	035	465	MX/NE	LG
26	WESTON	NT04NW	037	467	MX/ME	LG
27	WESTON	NT04NW	037	467	MX/NE	LG
28	WESTON FARM	NT04NW	038	474	MX/ME	SM
29	WESTON FARM	NT04NW	038	474	MX/NE	SM
30	WESTON	NT04NW	038	488	MX/ME	LG
31	WESTON	NT04NW	038	488	MX/NE	LG
32	WESTON	NT04NW	039	469	MX/ME	LG
33	WESTON	NT04NW	039	469	MX/NE	LG
34	EWE HILL	NT04SE	052	405	EBA	SM
35	WESTFIELD, DUNSYRE	NT04SE	072	469	UN	S
36	MELBOURNE	NT04SE	086	437	MX/NE	LG
37	MELBOURNE	NT04SE	086	437	MX/BA	LG
38	MELBOURNE	NT04SE	086	441	UN	SM
39	MELBOURNE	NT04SE	086	441	NE	SM
40	MELBOURNE	NT04SE	087	438	MX/NE	LG
41	MELBOURNE	NT04SE	087	438	MX/BA	LG
42	HUNTFIELD	NT04SW	013	401	NE	S
43	CARWOOD	NT04SW	038	401	EBA	S
44	SCOTTISH WOODLANDS AREA WEST	NT04SW	083	440	UN	SM
45	SCOTTISH WOODLANDS AREA WEST	NT04SW	083	441	EBA	S
46	SCOTTISH WOODLANDS AREA SOUTH,	NT04SW	0835	4370	NE	SM
47	SCOTTISH WOODLANDS AREA SOUTH,	NT04SW	084	436	NE	SM
48	SCOTTISH WOODLANDS AREA NORTH	NT04SW	0840	4455	UN	SM
49	SCOTTISH WOODLANDS AREA SOUTH,	NT04SW	0845	4380	NE	S
50	SCOTTISH WOODLANDS AREA WEST	NT04SW	0845	4409	UN	SM
51	SCOTTISH WOODLANDS AREA NORTH	NT04SW	0845	4440	UN	SM
52	SCOTTISH WOODLANDS AREA NORTH	NT04SW	085	444	NE	SM
53	SCOTTISH WOODLANDS AREA SOUTH,	NT04SW	0855	4395	NE	SM
54	SCOTTISH WOODLANDS AREA SOUTH,	NT04SW	086	436	NE	SM
55	TOWNHEAD FARM NO.3	NT04SW	086	450	NE	SM
56	SCOTTISH WOODLANDS AREA SOUTH,	NT04SW	0870	4370	NE	S
57	TOWNHEAD FARM NO.3	NT04SW	089	452	NE	SM
58	TOWNHEAD FARM NO.2	NT04SW	0900	4436	UN	SM
59	TOWNHEAD FARM NO.2	NT04SW	0905	4440	UN	MD
60	TOWNHEAD FARM NO.1	NT04SW	095	446	UN	SM
61	CASTLE GREG	NT05NE	050	592	UN	SM
62	CASTLE GREG	NT05NE	058	586	MX/NE	S
63	BROOKBANK	NT05NE	067	597	EBA	S
64	WEST CAIRNS	NT05NE	093	597	NE	SM
65	WESTER YARDHOUSES	NT05SW	0003	5045	EBA	S
66	WESTER YARDHOUSES	NT05SW	004	506	UN	SM

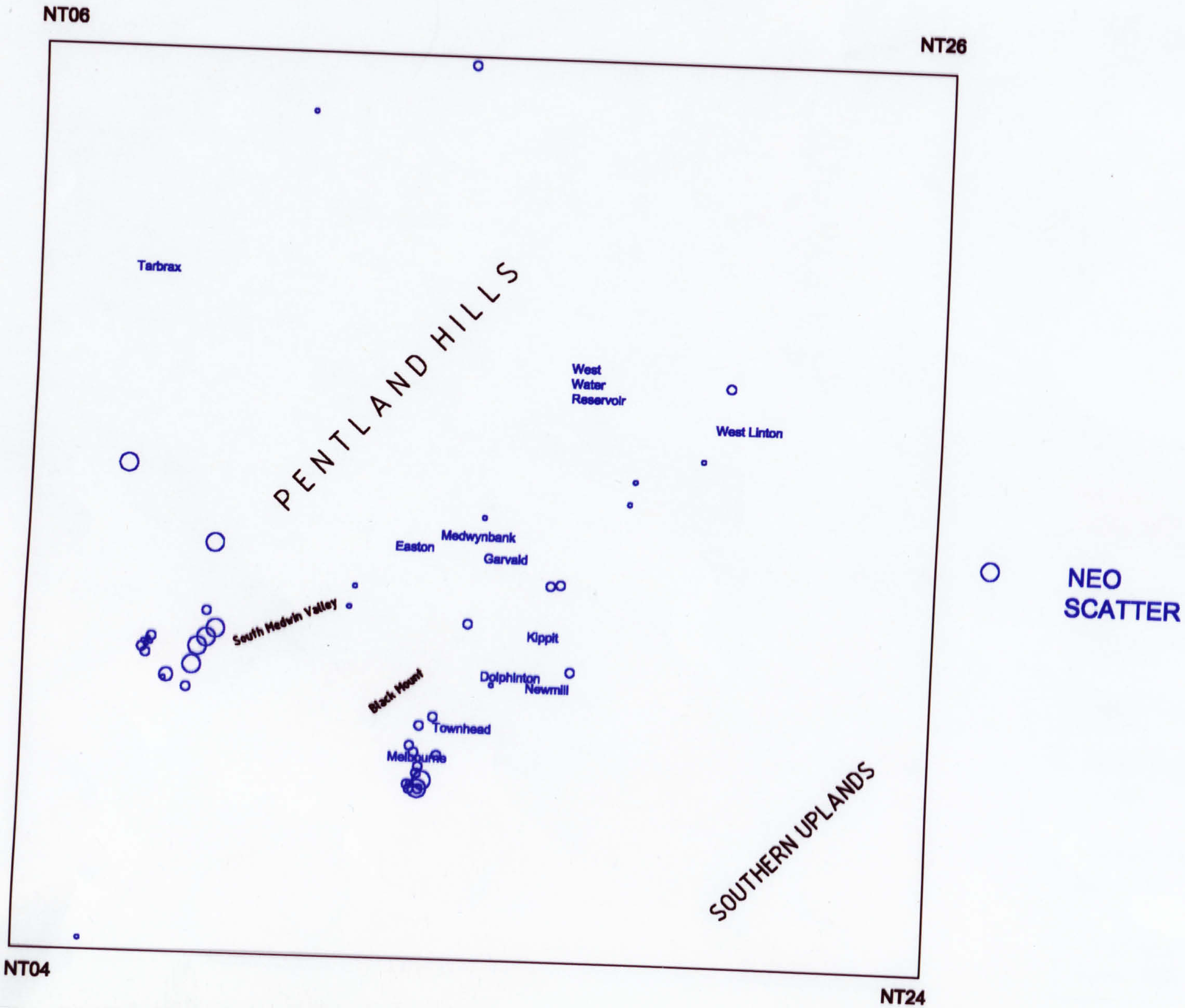
67	WESTER YARDHOUSES	NT05SW	005	507	UN	SM
68	EAST YARDHOUSES	NT05SW	008	519	UN	SM
69	CORSE LAW	NT05SW	018	505	MX/NE	LG
70	CORSE LAW	NT05SW	018	505	MX/ME	LG
71	CORSE LAW	NT05SW	018	505	MX/BA	LG
72	FERNYHAUGH	NT14NW	099	497	NE	S
73	MEADOWHEAD	NT14NW	102	460	NE	S
74	HAUGHHEAD	NT14NW	105	479	UN	S
75	SANDY HILL, INGRASTON	NT14NW	114	482	MX/ME	SM
76	SANDY HILL, INGRASTON	NT14NW	114	482	MX/NE	SM
77	SANDY HILL	NT14NW	115	482	MX/ME	SM
78	SANDY HILL	NT14NW	115	482	MX/NE	SM
79	SANDY HILL	NT14NW	115	482	MX/BA	SM
80	NEWMILL	NT14NW	119	463	NE	SM
81	NEWMILL	NT14NW	119	463	NE	SM
82	WOOD HILL	NT14SE	167	440	UN	SM
83	STEVENSON HILL	NT14SE	177	442	ME	SM
84	CLASHPOCK RIG	NT14SW	131	409	UN	SM
85	FLINT HILL	NT14SW	136	407	UN	LG
86	CASTLELAW	NT15NW	147	511	NE	S
87	COTTAGE FARM	NT15SE	152	527	NE	SM
88	SLIPPERFIELD	NT15SW	131	501	NE	S
89	SLIPPERFIELD	NT15SW	132	506	NE	S


NT06
NT26
NT04
NT24
PENTLAND HILLS
SOUTHERN UPLANDS
South Medwin Valley
Black Mount
LITHIC
SCATTER


NT06
NT26
NT04
NT24
PENTLAND HILLS
SOUTHERN UPLANDS
South Medwin Valley
Black Mount
LITHIC
SCATTER


NT06
NT26
NT04
NT24
PENTLAND HILLS
SOUTHERN UPLANDS
South Medwin Valley
Black Mount
Tarbrax
East Yardhouses
Wester Yardhouses
West Linton
Cottage Farm
Castlelaw
Slipperfield
Wide Hope Shank
Easton
Fernlehaugh
Mid Losset
Robertson Mains
Haughhead
Kippit
Dolphinton
Newmill
Townhead
Netherund
UNKNOWN SCATTER


NT06
NT26
PENTLAND HILLS
West Linton
Slipperfield
Medwynbank
Easton
Garvald
South Medwin Valley
Black Mount
Dolphinto
Shaw Hill
Medwynbank
SOUTHERN UPLANDS
Carwood
NT04
NT24
BA
SCATTER


NT06
NT26
NT04
NT24
Tarbrax
PENTLAND HILLS
West
Water
Reservoir
West Linton
Easton
Medwynbank
Garvald
South Medwin Valley
Kippit
Dolphinton
Newmill
Black Mount
Townhead
Melbourne
SOUTHERN UPLANDS
NEO
SCATTER

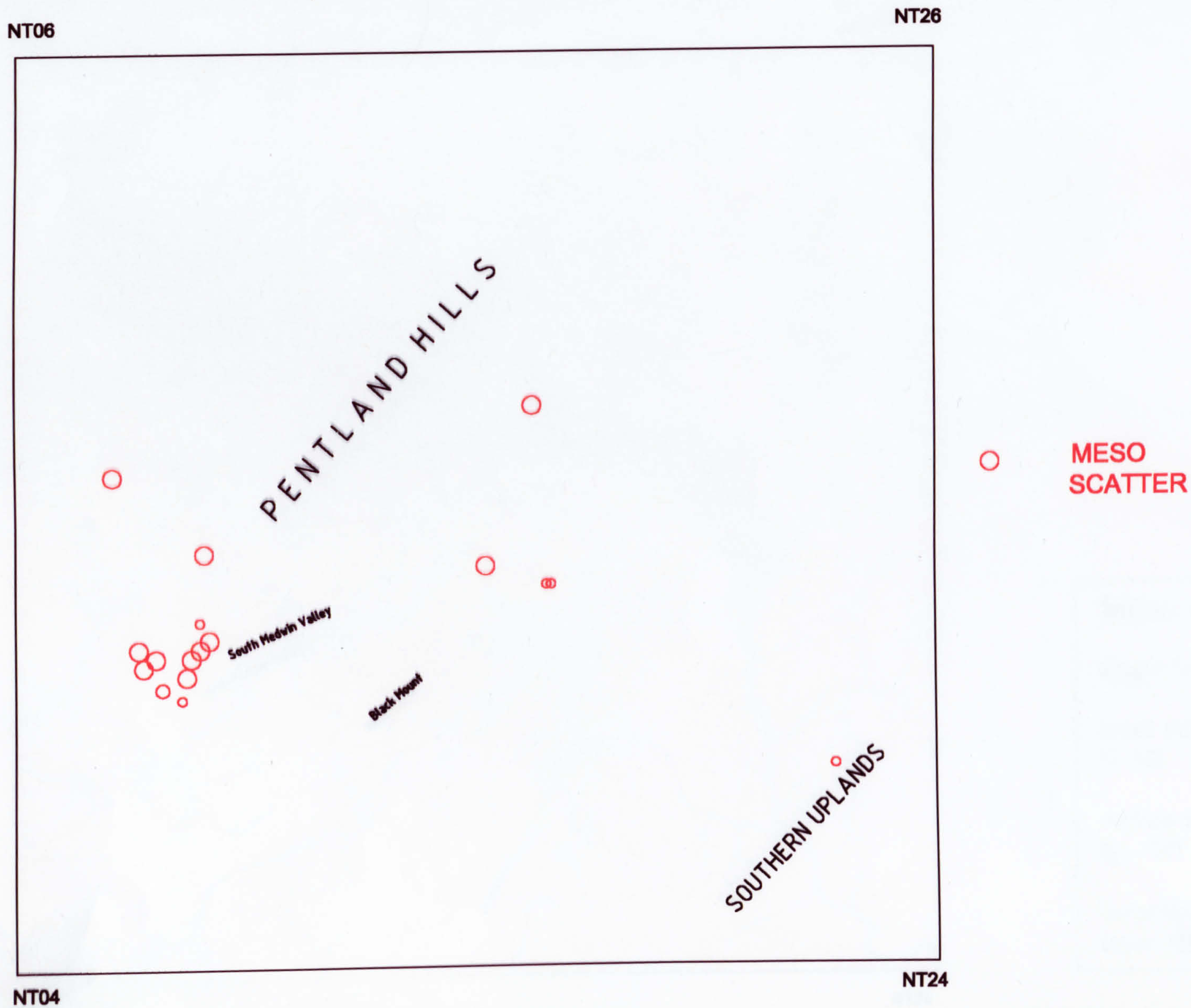

NT06
NT26
PENTLAND HILLS
South Medwin Valley
Black Mount
SOUTHERN UPLANDS
NT04
NT24
MESO
SCATTER

Figure 7.2 Map showing Mesolithic, Neolithic and Bronze Age scatters by layer

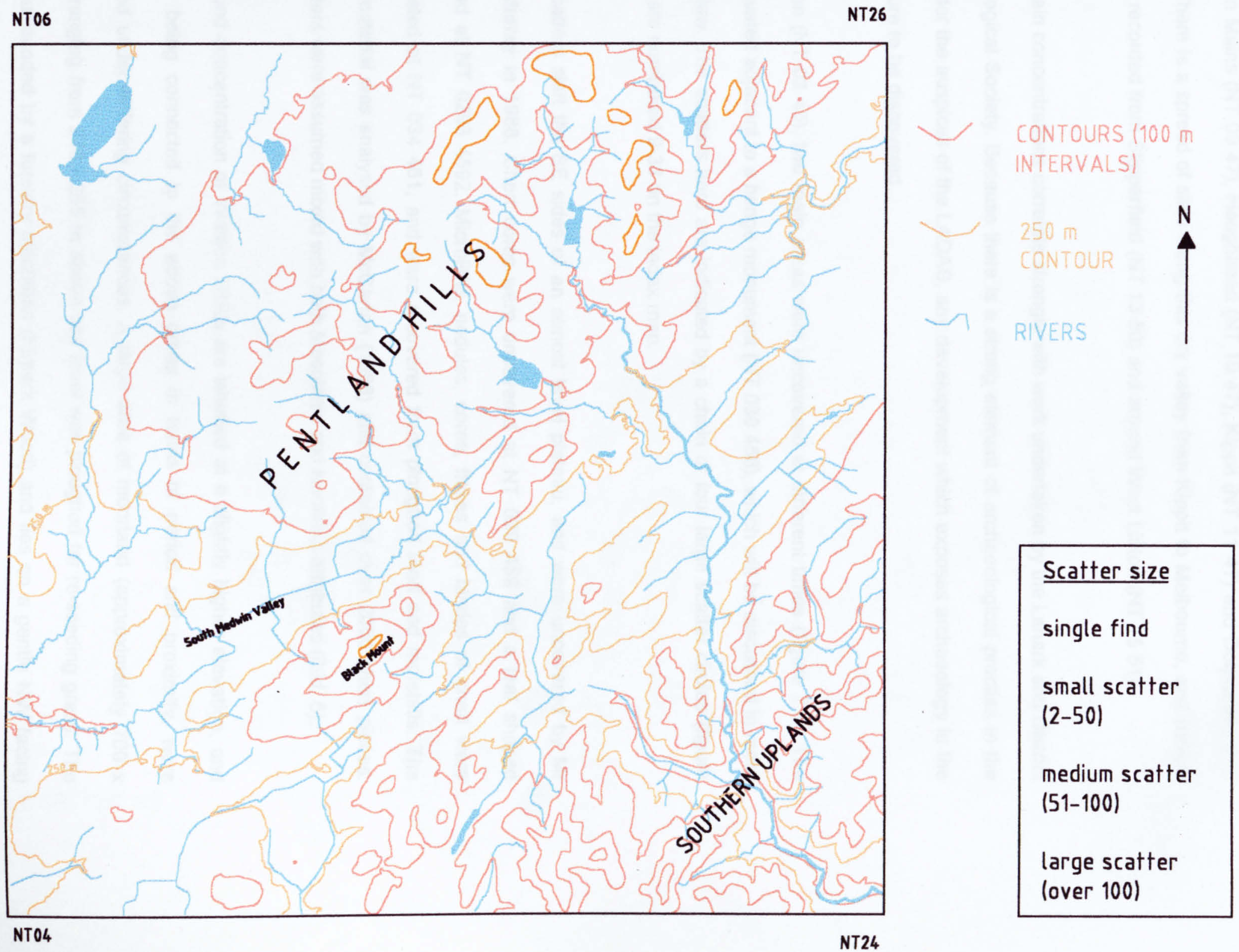
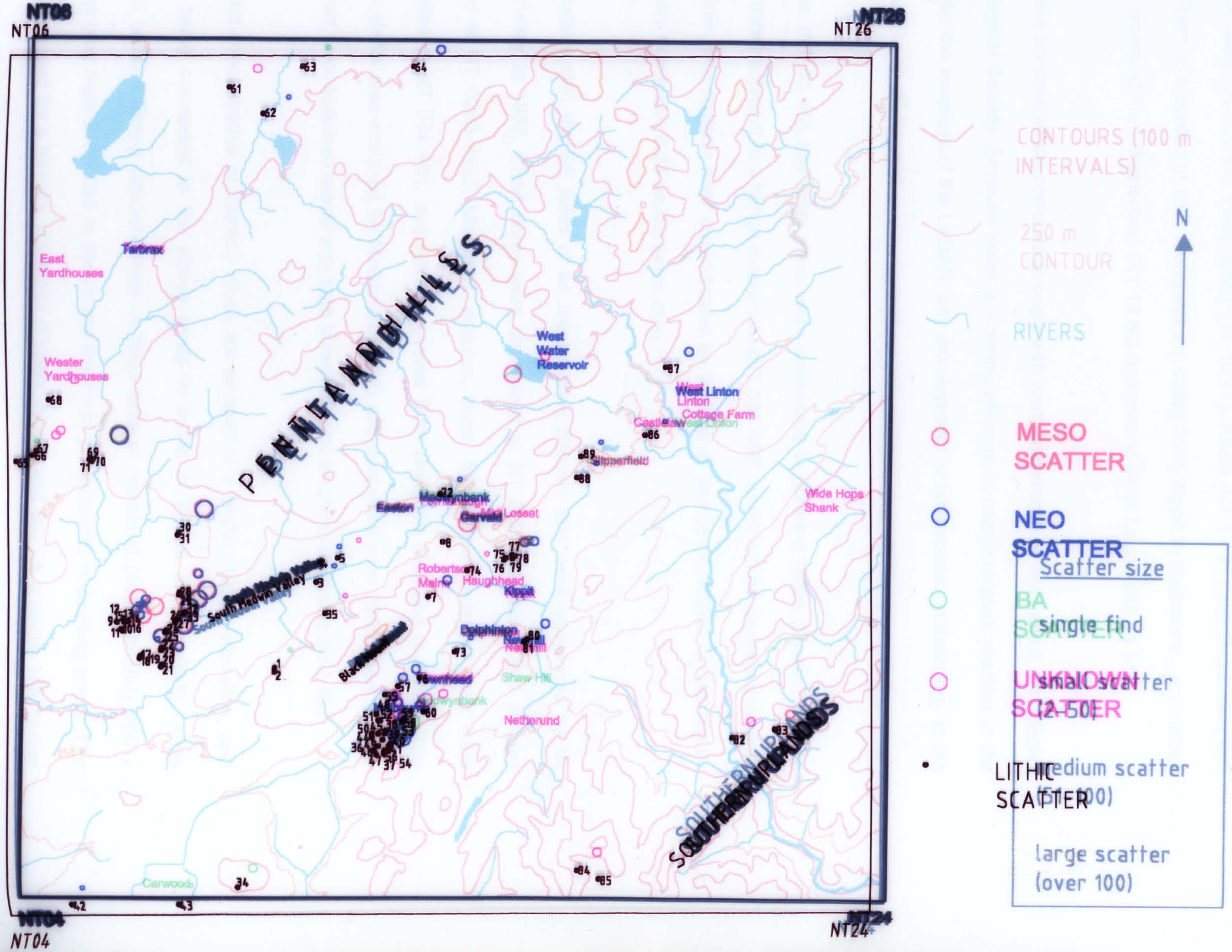


Figure 7.2 Map showing Mesolithic, Neolithic and Bronze Age scatters by layer



Less well provenanced finds cluster around the northern boundaries of Black Mount, at Robertson Mains (NT 09 47), Haughhead (NT 10 47), Kippit (NT 11 47) and Dolphinton (NT 10 46). There is a spread of sites along this dry valley from Kippit to Melbourne, and further finds are recorded from Slipperfield (NT 13 50) and around West Linton (NT 15 51).

These main concentrations correlate strongly with work undertaken by the Lanark and District Archaeological Society. Because there is a strong element of archaeological practise in the area, under the auspices of the LADAS, any development which exposes archaeology in the area is sure to be discovered.

At Weston (NT 03 45), two main areas were uncovered at different times (figure 7.3). The first is situated adjacent to a henge monument (NT 030 458), which will be discussed in more detail below. The scatters here are indicated by a chain of four large scatter circles (figure 7.2) and are numbered 9-33 on the index map.

These scatters skirt the SE sides of an almost level plateau, and were uncovered by Mr Robert Murray in 1988. Chert cores were uncovered at NT 029 459 and a leaf shaped arrowhead at NT 0293 4592. Microliths, nodules, cores, flakes and blades of chert were concentrated at NT 034 461, and were recovered from ploughed land and molehills. The surface material was analysed by McCartan (1988) and contained over 2000 chert pieces. The scatters were assumed mixed with both Mesolithic and Neolithic attributes (ibid. 6).

The second concentration of Weston lithics are situated at a slightly higher elevation, and although being connected to the above group in terms of period and proximity, were uncovered under differing circumstances. A large area of moorland (approximately 700 x 700 m), ranging from 240 - 255 m above sea level was ploughed for re-seeding grass. The area is surrounded by a forestry plantation (Firpark Wood) and lies on a gentle NW facing slope of an oval landmass approximately 4 km^2, which sits over the north side of the South Medwin valley. Newbigging village is situated approximately 1 km to the SW. Although the area is large and of

Figure 7.3 Location of Weston

relatively high altitude, it is reasonably sheltered. Green Moor, flanking the SW sides of the Pentland Hills, is visible to the north and is littered with hundreds of prehistoric monuments, including cairns and enclosures. Dunsyre Hill to the east can also be seen.

Tam Ward, leading LADAS, saw the opportunity to recover possibly exposed and damaged prehistoric remains in this large area, and set about fieldwalking on a complete systematic basis with a number of volunteers over the course of three weekends in March, 1998. Many discrete concentrations of material were recovered, which included what appeared to be simple single event chert knapping sites and more complex activity zones revealed by flint, pitchstone and chert flakes, and early neolithic pottery sherds. Diagnostic stone tools including hammer stones were also found.

This area has not been cultivated since prehistory (Ward 1998), as it has always been considered too marshy to re-seed, and therefore the material concentrations have been ploughed up for the first time. The area was split into two, with only a few finds coming from the first, these being, "A leaf arrow-head and a broken barb and tang arrow-head...four pieces of pitchstone...Isolated worked flint but more often chert, formed a light scatter of items over the entire area..." (Ward 1998, 3).

Area 2 proved to be more fruitful with over 7,000 chert artefacts, 220 flint artefacts, and 85 of pitchstone spread across the whole area (Ward 1998, table 1), with only a few concentrations, four of which were investigated further by geophysical survey, test-pitting and/or sample excavation.

The opportunity to survey and analyse a scatter which could be described as being in an initial phase, (after Boismier 1997) held great potential for the Lithic Scatters Project, and a week was taken to look at one of the discrete concentrations by the author, through geophysical analysis and subsequent test-pitting. It was crucial to record as much as possible of at least one concentration before any further agricultural activity would decrease the possibly well preserved characteristics and intrasite patterning on the surface, and the scatters relationship to subsurface archaeological features. A large rotivater was to be employed by the farmer for the subsequent soil break up, rather than a disc and harrow. This rotivater has only recently been adopted by farmers in the area, due to the size and power of tractor necessary, and the consequences for surface lithic scatters could be potentially disastrous, as the topsoil is broken up and churned around to a higher degree than is experienced through previous methods, with a light and fluffy soil lying on the surface, making any lithic material hard to see (Ward, pers comm 1998).

> ...this type of machinery has the effect of throwing all the material it turns violently up against the casing of the machine. When the material drops, all the heavier matter settles first, below a layer of fine soil, to the extent that the surface is almost devoid of any stone. This method of cultivation has great advantages for the sowing and rolling of the crop and enables the seedlings to become better established. The consequence for the field archaeologist is catastrophic and really has to be experienced to be appreciated. At Weston, hardly any further objects were retrieved from the entire area after rotivation, despite an equally efficient search. Pottery would have little chance of surviving the effects of the rotivator.
>
> Ward 1998, 13.

It is quite rare to have such a large upland area ploughed for arable re-seeding: most large scale ploughing results as a consequence of forestry or peat cutting. A similar sized area had been previously walked in 1987 by the LADAS on Corse Law, which is visible to the north of Weston (Clarke 1989). In that case chert scatters were found from forestry furrows, and no in situ archaeology was uncovered. Weston is a different case, with a large part of the landscape being *completely ploughed.*

Melbourne (NT 087 443; scatters 36-41 in key) has a further concentration of well provenanced finds, also through fieldwalking undertaken by Ward and the LADAS, after forestry ploughing had laid bare large tracts of the hillside (Ward 1996a, 100; 1997, 76; 1998, 90). Groups of chert and flint scatters, a pitchstone knapping site, early and late neolithic pottery scatters were all recovered from the area. Subsequent excavation revealed various pits and irregular features connected to vast quantities of lithics and pottery, on the terraces of this NW facing slope of Broomy Law (Ward 1996b).

The other main concentrations described above, are those around the NE sides of Black Mount. Collections throughout the initial half of this century, and individuals within the 1950s and 1960s have created this concentration. One collector, P F Dunlop, was a mason at Dolphinton (see below), and his local knowledge uncovered a large amount of material. Unfortunately, accurate locations are not given in any records, only farm, or Parish names are mentioned. As will be stressed below, it was the objects themselves rather than the context in which they were found which was deemed a valuable contribution to interpreting the past. Many of these are of unknown date, but the majority have diagnostic Neolithic traits.

There are smaller scatters to the SE of the area at Flint Hill (NT 13 40) and Stevenson Hill (NT 17 44). These were recorded by Robert Knox in 1984 and are apparently associated with chert outcrops, although a visit from the author failed to locate any evidence of working.

Single finds are the largest component in the area, and they are scattered apparently at random: if we consider the pattern of discard which occurs as a result of a continual movement by people throughout prehistory across this landscape, then that is not surprising, especially when most of the isolated finds have been found along the main river valleys and around the 250 m contour.

A wide strip running north-south made up of lithic remains lies to the north west of the Southern Pentlands area. Many of these scatters were discovered around Wester Yardhouses (NT 00 50), East Yardhouses (NT 01 52) and Tarbrax (NT 02 55), and more precise grid references are not given. The majority are of unknown date although a neolithic scatter at Tarbrax is classified Neolithic. Two small scatters of unknown date are recorded from Wester Yardhouses.

Across the North Medwin river to the east, a large mixed scatter was recovered in 1987 by the Lanark and District Archaeological Society on Corse Law (NT 018 505; numbers 69-71), which is visible from the sites at Weston (see above). A large fieldwalking exercise was carried out subsequent to forestry plantation (Clarke 1989). More than 2 200 flaked lithics of Mesolithic - Bronze Age date were found (see chapter 9).

Another isolated large scatter site, although there are many scatters from the area which are lacking a detailed provenance, is at Garvald Burn discussed in the following chapter.

Up the valley towards Ingraston to the SE, erosion at Sandy Hill revealed a large amount of lithic material deriving from the Mesolithic to the Early Bronze Age, including a pennanular bracelet from the Late Bronze Age. Work done by Trevor Cowie, Bob Knox and Craig McKean on these sand hills suggests a long period of settlement on the terraces of the valley (Cowie et al 1993a; 1993b). Cowie states from this report that the

> ...recovery of relatively large quantities of burnt flint, including several worked pieces, and a number of scrapers probably indicates that we are dealing with traces of occupation sites or encampments at some stage in the use of the ridge.
>
> Cowie et al 1993a, 1

Finds from different periods ended up mixed at this site due to erosion of the underlying deposits created by quarry work which had stripped off the topsoil in preparation for sand and gravel extraction (ibid. 2).

Across the road from Sandy Hill at Haughhead Farm lies a large depression created by Garvald Quarry, where Tarmac Roadstone Ltd have been extracting sand and gravel since

1995. GUARD were originally commissioned to undertake watching briefs and subsequent evaluation of the archaeology in the area. This work ran through to November 1996 when, "an array of probable prehistoric remains, including ring ditches, palisade enclosures and post built structures" as well as "[n]umerous lithic artefacts..." were discovered (Duncan et al 1998, 5). The discussion by Duncan in this evaluation report states that "...the site was occupied for a considerable length of time" (ibid. 13), and this is demonstrated by the combination of a lithic assemblage which "...appears at least partially late Mesolithic/ early Neolithic in character..." (Donnelly 1998a, 17), as well as possible later features in the form of large ring ditches and groupings of postholes. Ditches and palisade trenches intercut each other suggesting that the site has several phases of activity (ibid. 12).

Subsequent excavation on the site was carried out by AOC Ltd, who recovered subsequent lithic concentrations, pit features, linear features, rectilinear enclosures and curvilinear enclosures (Cooke 1988, 2) - a vast array of archaeological deposits which reveal activity ranging from the Late Mesolithic to the Early Historic period (ibid. 32).

To the north west, a flat cist cemetery was discovered at West Water Reservoir in 1992 and in subsequent years (Hunter 1992, 9-10;1993, 10;1995, 11), and this had an associated scatter of chert, flint and agate tools, flakes and cores adjacent to it on the reservoir foreshore (Hunter 1992, 10).

Scatter relationship with land use.

The low lying belt of land along the South Medwin valley to the north is composed of a high percentage of dairy farming, with occasional ploughing occurring for winter barley and vegetables. These sand rich areas have also been victim to the more destructive activity of quarrying - the largest of which lie at Garvald (NT 10 48) and Walston (NT 03 45) (figure 7.2).

Forestry plantations dominate a large percentage of the upland areas. Stretches to the north of the area on the north east sides of the Pentlands at Camilty (NT 04 58) and West Cairns (NT 08 59) surround Cobbinshaw Reservoir with smaller areas further south at Blackcastle (NT 01 53), Corse Law (NT 02 50) and Firpark (NT 02 45). To the south the larger areas of forestry are at Bowmuir (NT 00 42), The Mount (NT 09 42), Woolshears Hill (NT 13 42) and Crailzie Hill (NT 19 45). Deepsyke Forest covers approximately 4 km^2 to the north east of West Linton (NT 18 54).

The remaining areas of forest plantation tend to be represented by mixed or deciduous strips acting as windbreaks for farmland. These can be seen dotting the valleys, usually lying perpendicular to the direction of wind flow, channelled by the north-east - south-west alignment of the low lying land. Christmas tree plantations are also present within the area, large expanses lie on either side of the Melbourne cross-roads (NT 08 44), on the lower slopes of The Mount to the south, and Black Mount to the north.

All the low lying land within the study area is classified as having moderately severe limitations that restrict the choice of crops and/ or require very careful management practices (OS soil survey of Scotland - land use capability, Peebles sheet 24, 1975). All higher areas have 2 main zones, the lower hill slopes have severe limitations and are restricted to pasture and forestry, although improvement by mechanical means is practical; while the higher hilltops are suitable only for rough grazing and forestry.

There are a large number of quarries across the area, for the extraction of sand and gravel necessary for road building (Garvald Quarry, Newbigging). Obviously the effects of quarries are severe on archaeological deposits, although within today's post- NPGG5 climate developers are forced to take responsibility for their actions and any archaeology is recorded in a representational fashion (for example, see Cook 1998).

It can be seen that the majority of lithics lie on the most arable ground, as this is where most exposure through ploughing is undertaken (figure 7.4). A number of scatters are positioned within forestry plantations, another obvious result of fieldwalking on ploughed areas. Concentrations are not as high in these upland areas, but are still a significant presence. Indeed, some areas of forestry plantation have revealed large concentrations of mixed assemblages (i.e. Corse Law, Melbourne). This may have been predicted in the case of Corse Law due to the concentration of upstanding remains in the area, but at Melbourne there are no signs of archaeological remains despite the widespread concentrations of lithics and ceramics cast up by the plough. (Ward 1995).

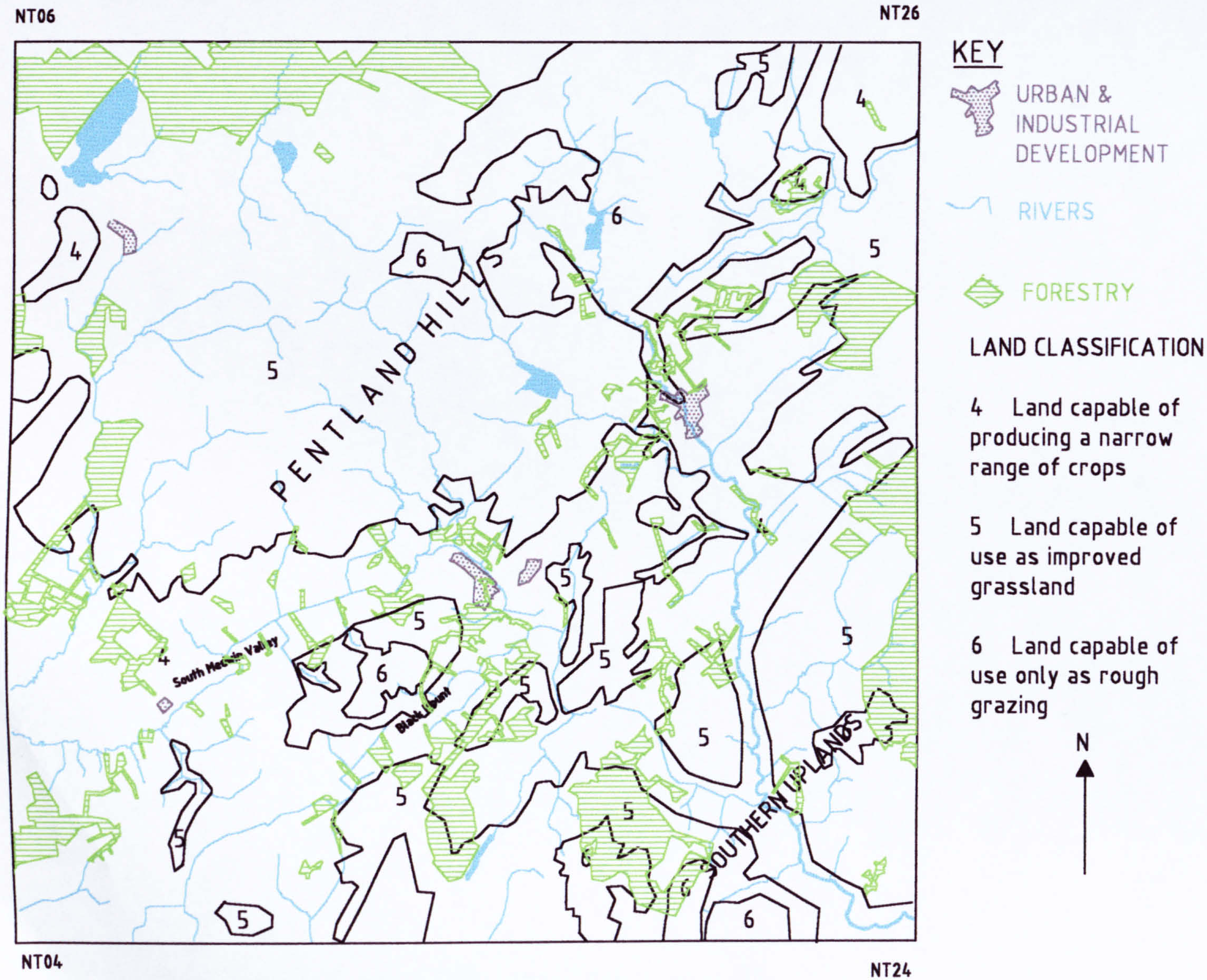
Reservoirs are common in the Pentland Hills, but only at West Water have remains been found. If the finder had not noticed anything during the period of low water, then these may have been missed completely.

What do we take from this evidence ? Is the distribution of lithics across the Southern Pentlands area a reasonable indication of prehistoric activity, or are these patterns purely a reference to the combination of modern agricultural activity and fieldwalkers' gusto?

There will probably never be a 'real pattern' of prehistoric activity in this, or any other area. The material culture we are studying is in a state of flux, it represents a dynamic human element, and that which covers thousands of years. Indeed, more scatters will be uncovered in this area in the future, fields already walked will still reveal their lithics.

Certain areas, specific locales can be narrowed down, and an idea of the extent of activity which took place in one small locale may be indicated. One example can be shown at Weston. Figure 7.3 gives a close up of the scatters discovered here. This whole area has been ploughed for the first time, but only a fraction of the material culture present within the soil has been exposed. Even so a concentration of scatters has become apparent by studying the smaller scale map. 'Sites' and 'nodes' in the landscape are seen to be present, when it.

Figure 7.4 Landuse in Southern Pentlands area



may be more realistic to see these places as areas where prehistoric material culture is noticed or becomes discovered by present day humans. This whole landscape will be covered with material elements of prehistoric remains. Over thousands of years, people moved around, they changed their perceptions concerning the places they inhabited, creating significant places for various reasons, some of which may have lived on through generations, others may have had a shorter duration and the significance will have been lost. The nature of scatters, being as they are, left marks on the visible landscape, some of which will have existed through long periods, others may have disappeared from view (Foley 1981, 170).

I am not denying that there will have been places within the landscape which were constantly returned to and inhabited, but the movement through and across the areas were also 'inhabited' and lived in, and consequently evidence of this movement and living on the landscape creates a palimpsest of material over a *long* period of time.

Returning to the land use map, we can reconsider this landscape in terms of modern development which is put upon it. As more quarries are opened up, more archaeology and scatters will be uncovered. As more fieldwalking is undertaken, more scatters will appear. As fresh hillsides are ploughed for re-seeding or forestry, archaeological deposits will be recontextualised into our lives. As water levels change and erode the peat around reservoirs, fresh archaeological contexts will become exposed. Camps and Daer Reservoirs, Loch Doon and Clatteringshaws Loch all spring to mind as parallels to West Water. These upland loch side areas are vulnerable in that they present areas which contain preserved archaeology under a blanket of protective peat which becomes exposed in various circumstances. Forestry plantation is similar in that often for the first time mechanised agricultural machinery was introduced to the area to be planted. Indeed it is the areas which are less viable to farming which are chosen for forestry plantation.

Analysis of scatters

Approximately 164 scatters are present in this area. A range of descriptive statistics will be given throughout this section, taking each field of the database in turn. As has been discussed above, the evidence and descriptions of the scatters has been taken in the majority of cases from old records and synthesised reports. As little interpretation of period has been put onto the literary evidence as possible, so as to create a complete picture of the past interpretations. In many cases these may be mis-interpretations, the author is only using information available from the Lithic Scatters Database as it stands now. No further research has been undertaken on the assemblages from this area for this discussion, save on the lithics uncovered by the author himself (Garvald Burn and Weston).

All the scatters will be looked at as one large unit, with distributions and statistical analysis taken from the database. Each period has also been discussed for each field.

Integrity

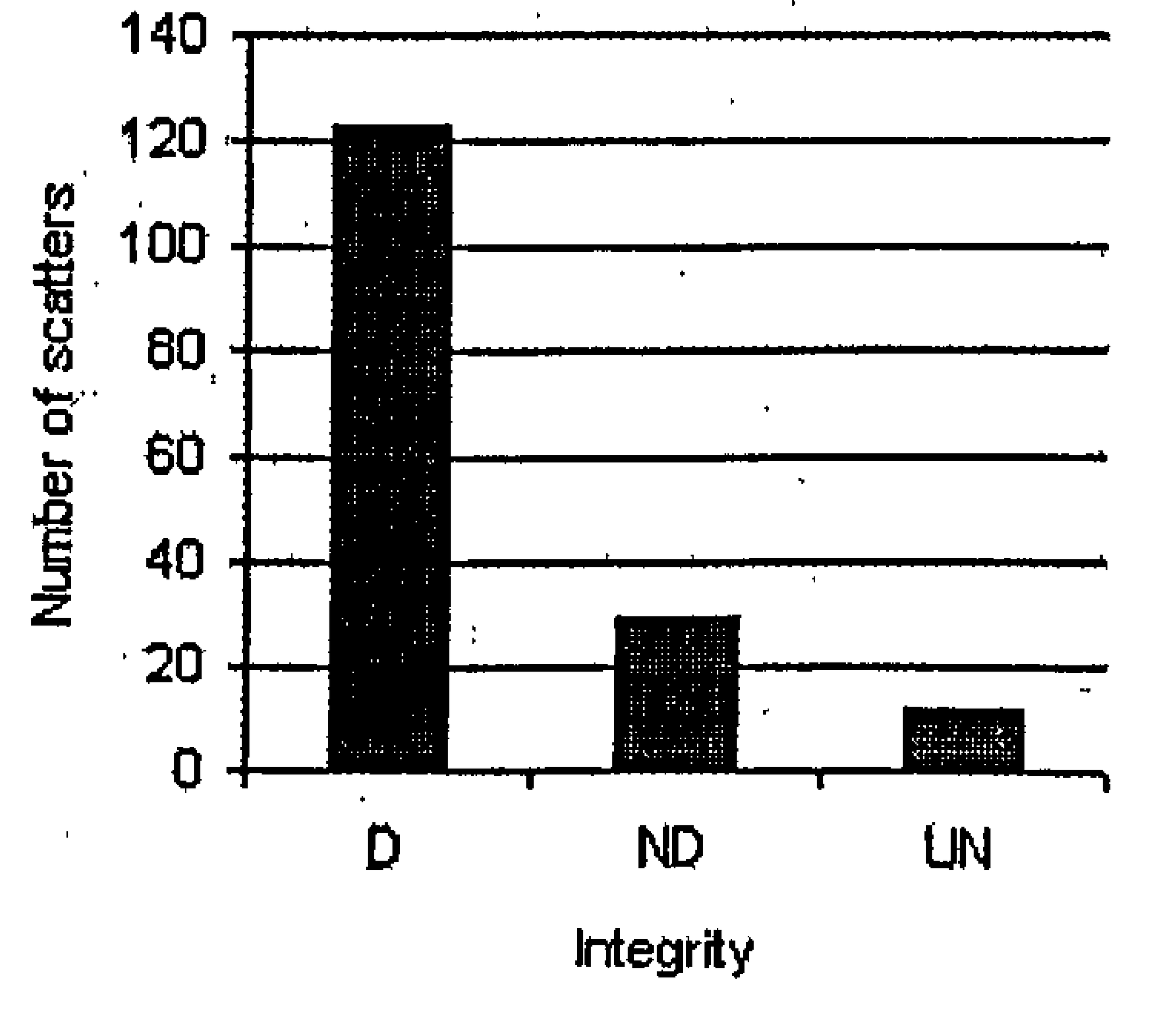


Figure 7.5 Number of scatter by integrity

The majority of the scatters in this area can be seen to fall into the discrete category (see chapter 1). Over 120 scatters are discrete, with over 20 non-discrete ones and 11 unknown (figure 7.5). This appears at first to be a very high figure for the number of discrete scatters but does not necessarily reflect the quality of the resource. A large number of single finds are present within this area, and these fall into the discrete category, creating a certain bias in the results. Subtracting all single finds from the equation would still leave a majority of approximately 45 scatters which show discrete boundaries however.

Many of these (approx. 35) are described as being small. As was mentioned above, this may be a reflection of the nature of recording when fieldwalking. If a small number of pieces are recorded, they will tend to be in close proximity to each other; subsequent lithics further away may well have been recorded as a separate scatter. In this case a dispersed large scatter may be translated as two discrete small ones. It may be more informative to look at the larger scatters and use their integrity listings as a more accurate picture of the quality of scatters in this area. Figure 7.6 (integrity by large scatters) gives a different picture, with twice the number of non-discrete scatters as discrete.

Figure 7.6 Integrity for large scatters

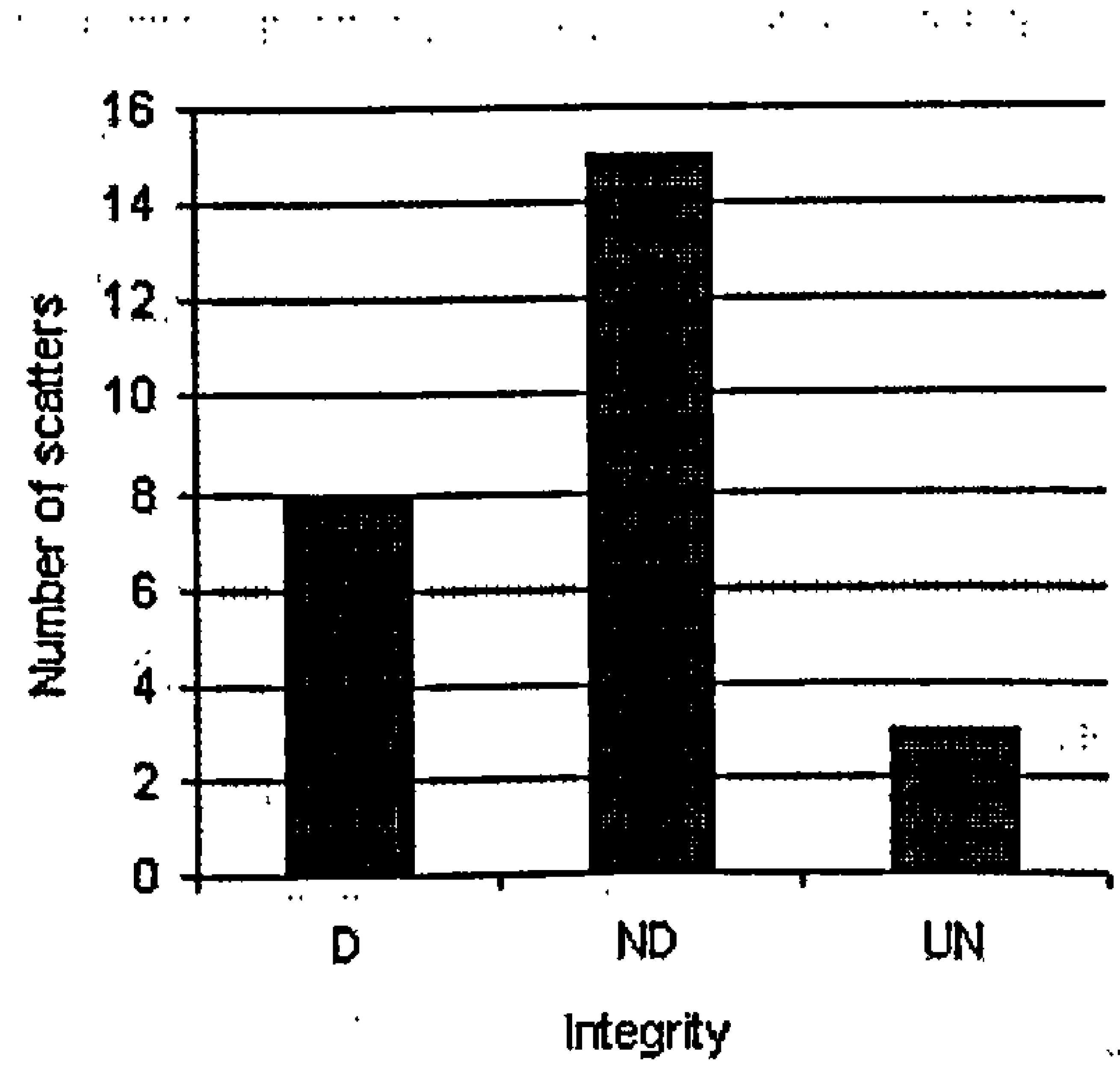
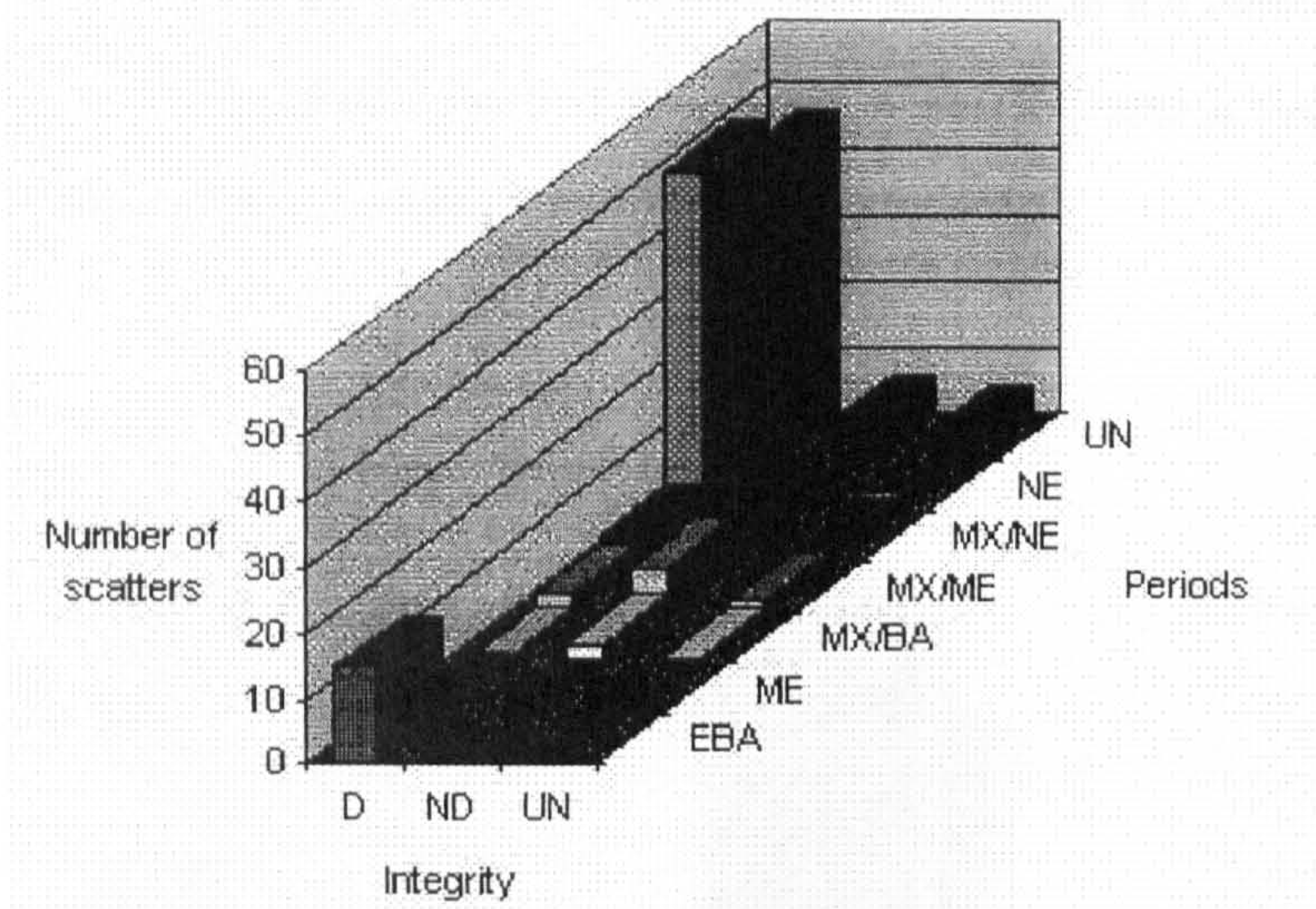


Figure 7.7 shows integrity plotted against period. The majority of discrete scatters are split between unknown date, Neolithic and early Bronze Age, giving further indications of the nature of many of these being isolated finds in the form of leaf shaped and barbed and tanged arrowheads. The large number within the unknown category refers to the number of scatters which contain undiagnostic lithics, and which have an unknown date on the records from which the information was recorded.

Figure 7.7 Integrity by period



Mesolithic scatters are fewer in number within this area, and the greater number of these are discrete Neolithic scatters. Mixed Neolithic sites - which will include Neolithic and even Bronze Age components (see distribution by period below) - have a higher proportion of non-discrete scatters.

Size of scatter

Figure 7.8 Number of scatters by size

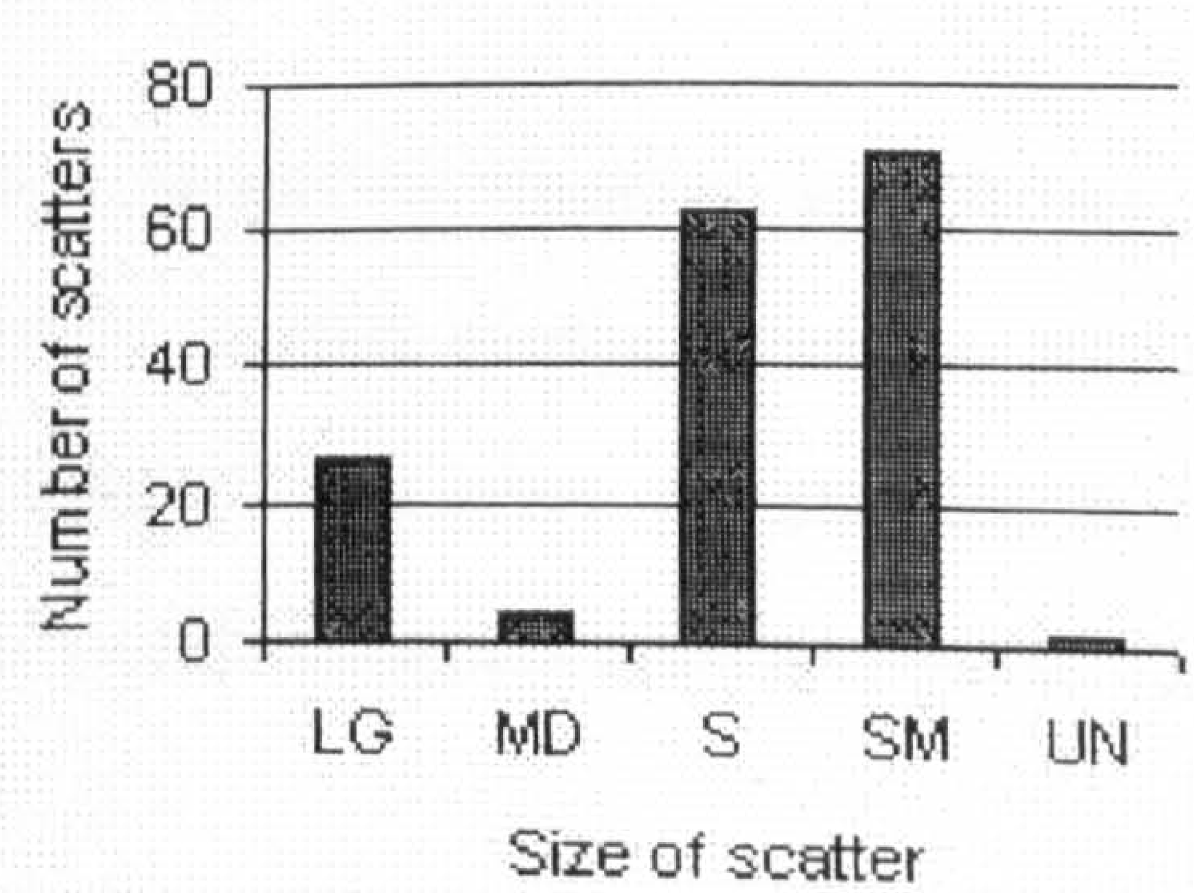


Figure 7.8 gives the proportion of different sizes of scatter for the Southern Pentlands area. Single finds and small scatters dominate the figure, with large scatters coming next (over 25), and medium last. The bias towards single finds has already been mentioned above, and

reference to figure 7.9 (size by period) reveals the large number of Neolithic and early Bronze Age finds, these being typically diagnostic arrowheads and scrapers. A further investigation into this segment of the material record (figure 7.10 date by size), shows when these isolated finds were recorded. The late nineteenth and turn of the century, by a variety of finders, as this was the fashion led by antiquarianism. There is also a large peak around the 1950s and 1960s, when a variety of individuals were working.

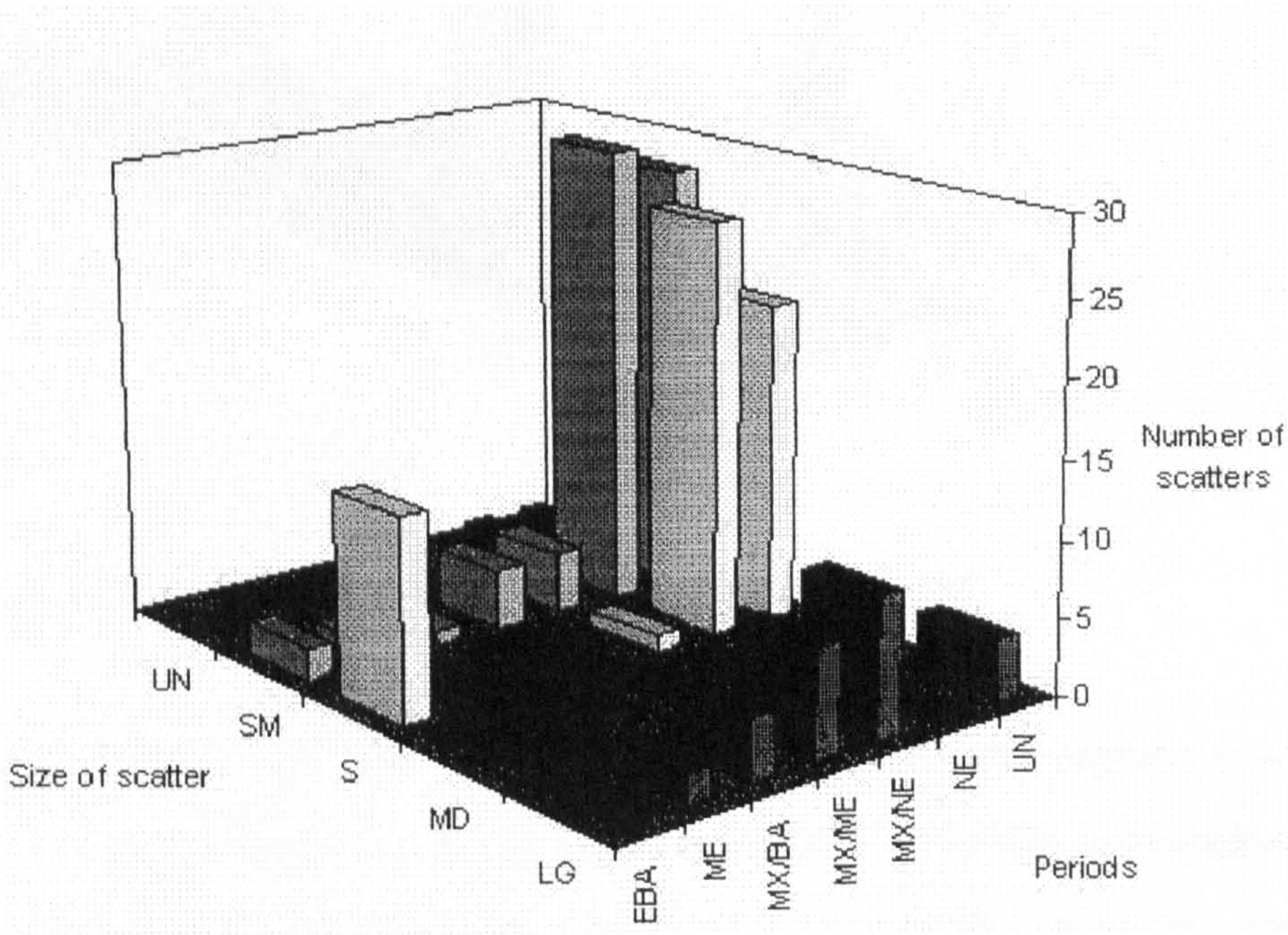


Figure 7.9 Size of scatters by period

Large scatters are dominated by mixed Mesolithic/ Neolithic/ and Bronze Age attributes (figure 7.9) with two large solely Mesolithic scatters existing within the area and one small scatter having only Mesolithic characteristics. This gives an indication to the amount of mixing and possible palimpsest of activity sites throughout prehistory in this area. This will be mentioned further under *period* (below).

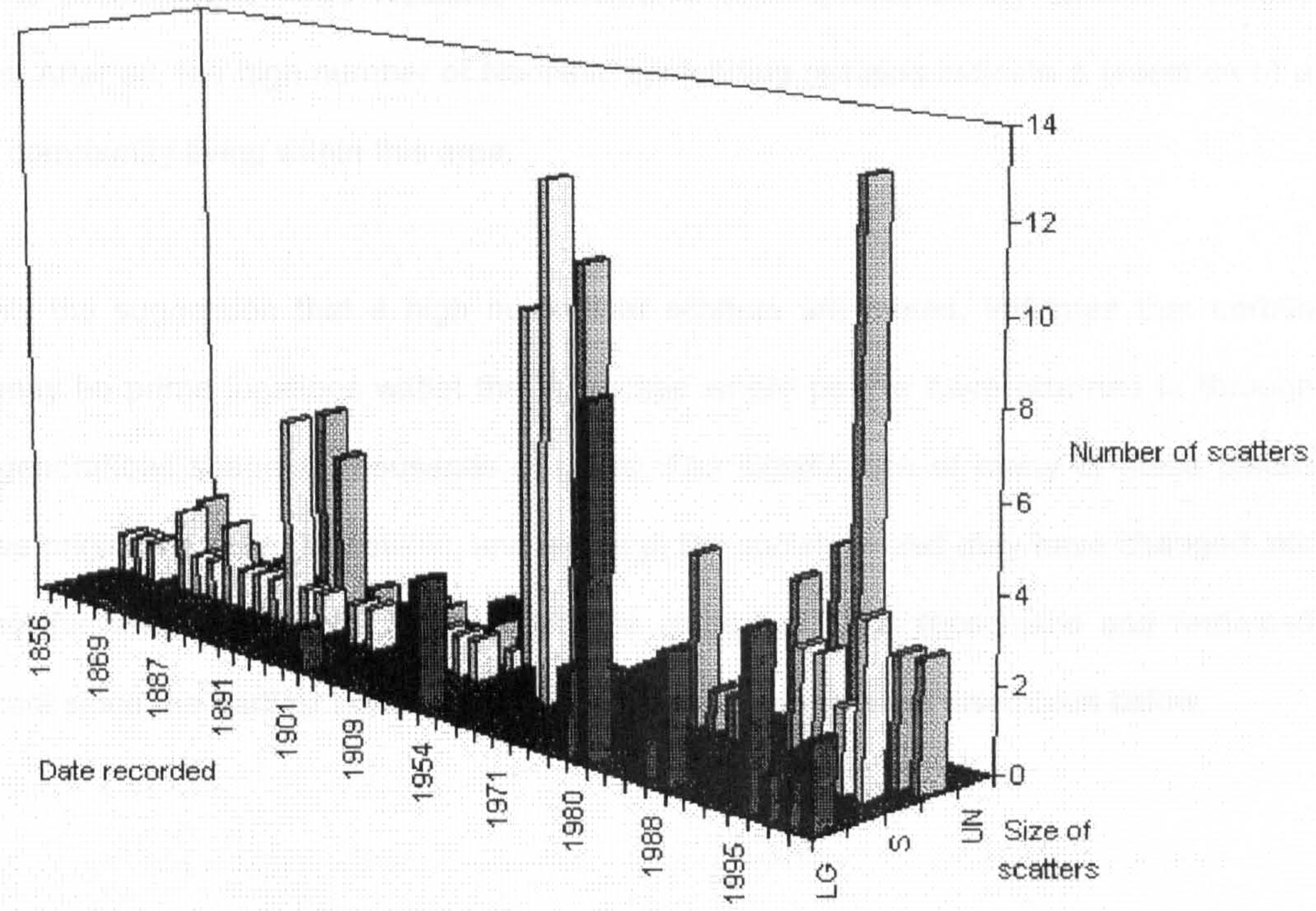


Figure 7.10 Size of scatter by date of collection or record

The lack of large Neolithic sites may at first seem surprising, but if the numbers which classify each size category are considered, and the form of collection over the past century is assessed, this result appears less anomalous. 'Large' sites are classified as having more than 100 pieces. When we consider that the form and physiology of scatter creation throughout prehistory, it is not surprising that Mesolithic scatters are mostly large. Two minutes knapping by a person in the Mesolithic undergoing some form of blade manufacture creates literally thousands of pieces through waste and debitage. These scatters in today's context are easily classifiable into our typological scheme, and so large Mesolithic sites slowly expand.

Large Neolithic sites are harder to come by. Diagnostic tools are a main indicator of Neolithic activity, and many of these seem to have been collected at the turn of the century by a number of individuals. It is possible that the frequency of collection from 'large' Neolithic scatters has created a larger number of single finds or small sites. Certainly waste and irregular flakes were left untouched, as more recognisable pieces were celebrated. In this vein it is possible that large Neolithic settlements are represented by smaller Neolithic scatters. After all, the high number of Neolithic upstanding remains indicate a presence of a settled community living within this area.

Certainly the suggestion that a high number of scatters are mixed, indicates that certain areas may be prime locations within the landscape where people have returned to through many generations spanning thousands of years. The significance of many of these places will have originated in the Mesolithic, and although the social context may have changed into the Neolithic and through the Bronze Age, the place has been recognised and remained significant since the earliest times. This idea will be expanded in the discussion below.

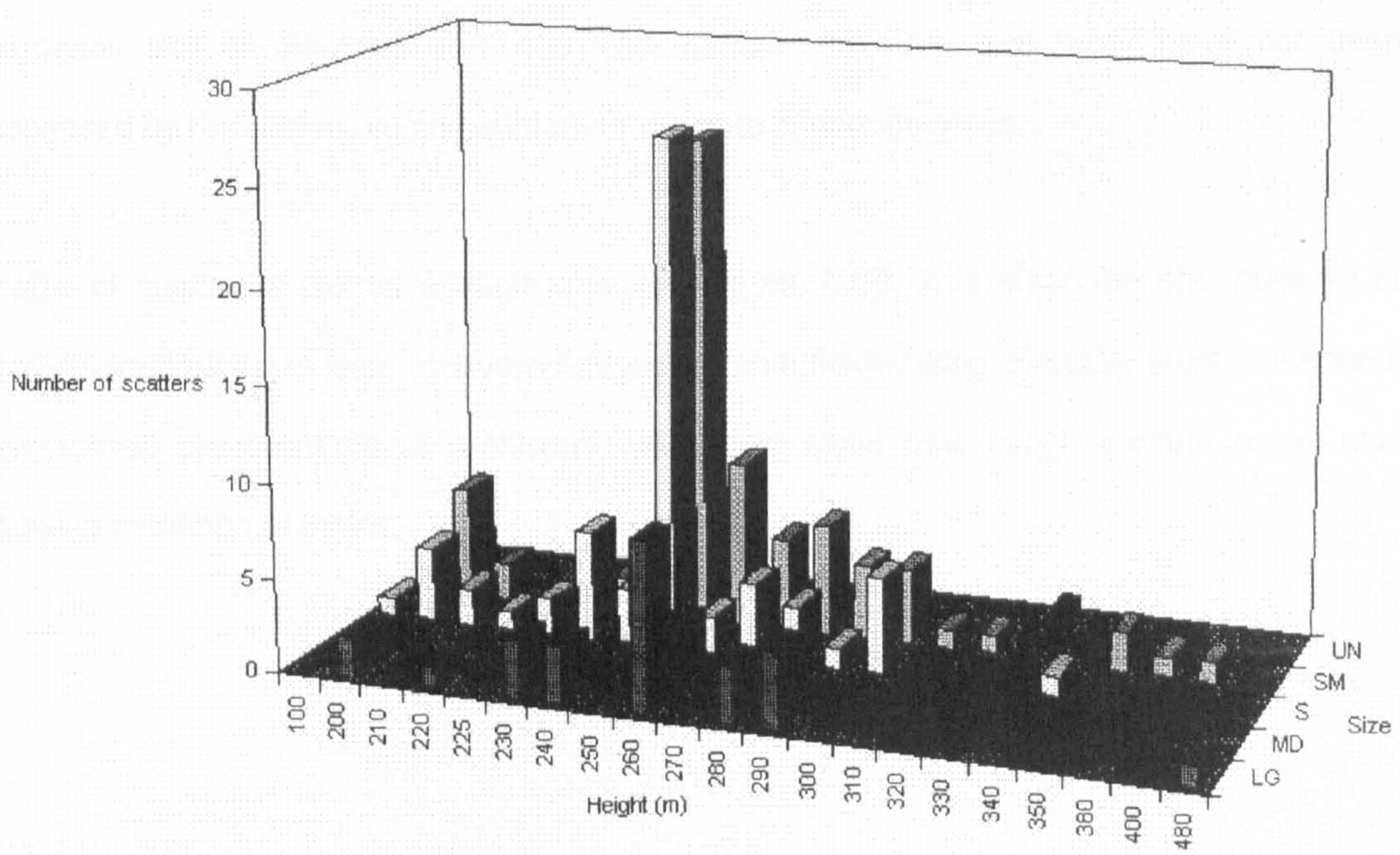


Figure 7.11 Size of scatter by height

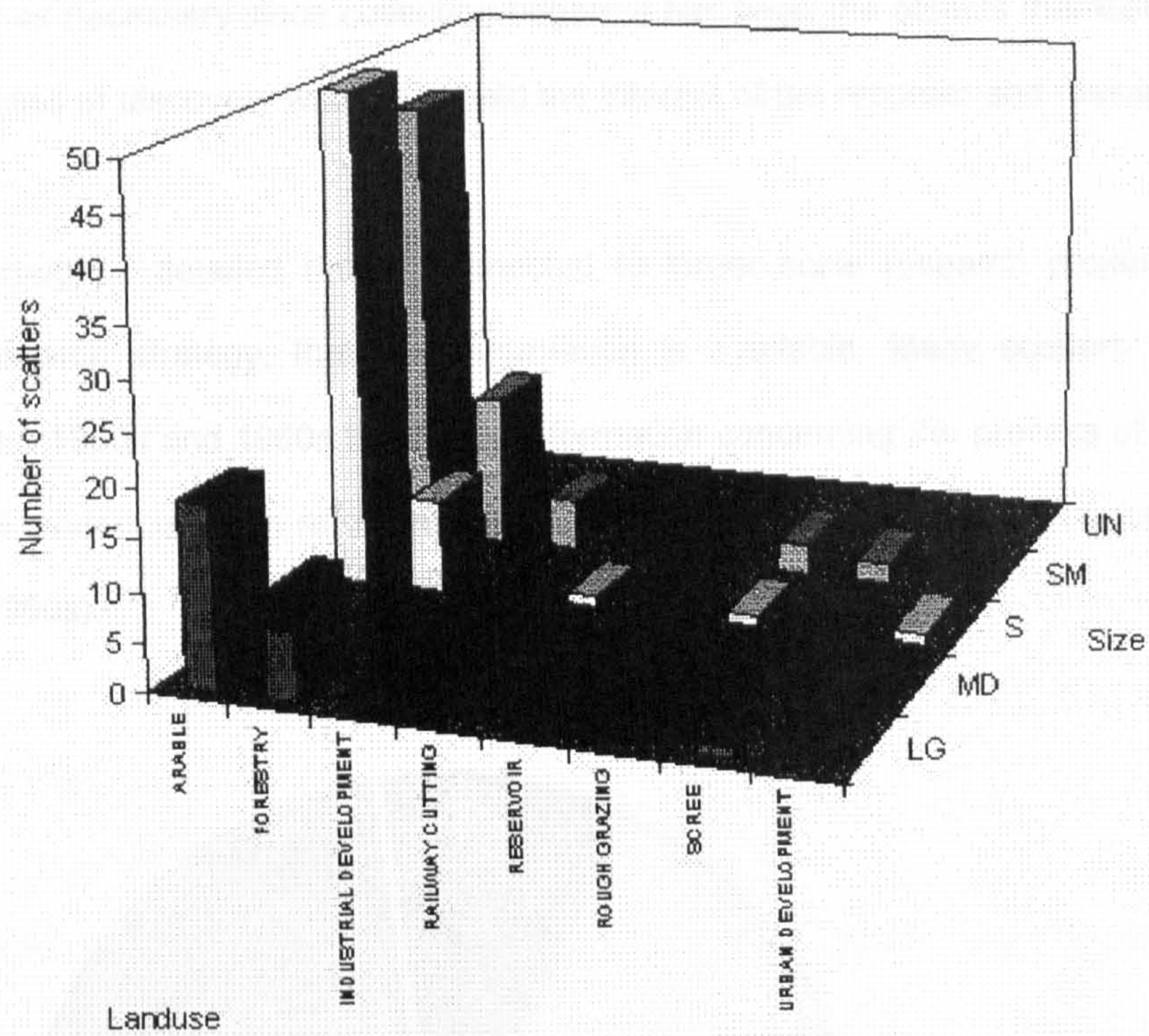
If size of scatter is plotted against height (figure 7.11), an impression of various activity areas can also be gained. Single finds are located from the lowest contours in the area at around 200 m OD, and are frequent up to a height of approximately 320-340 m OD. There is a peak at around 250 m OD, which is the contour running along the valley edges throughout the study area. The majority of the single finds from this area are arrowheads and therefore we may assume that many isolated artefacts were lost or abandoned while moving around this contour. This fits in well with a picture of the environment at the time, given that there may have been boggier low lying areas, especially around the South Medwin valley (see chapter 9).

Small scatters almost mirror the patterns shown above. The higher ground has a few small scatters, these are at Wood Hill (scatter number 82; figure 7.2), Stevenson Hill (83) and Clashpock Rig (84). These are possibly chert working areas at outcrops.

The limited number of medium sized scatters also lie on this point, as do the larger scatters, although there is a scatter which boasts the highest altitude at 480 m OD, a possible chert extraction site on Flint Hill (NT 136 407; number 85). The tool types have not been diagnosed by the author, so an estimate of the date cannot be given.

If size of scatter is plotted against land use (figure 7.12), it is clear that the majority of scatters from all sizes were recovered through arable fieldwalking. Forestry plantations have also turned up remnants of prehistory, with mole casts over rough pasture areas also showing evidence of lithics.

Figure7.12 Size of scatter by land use



Scale of Collection

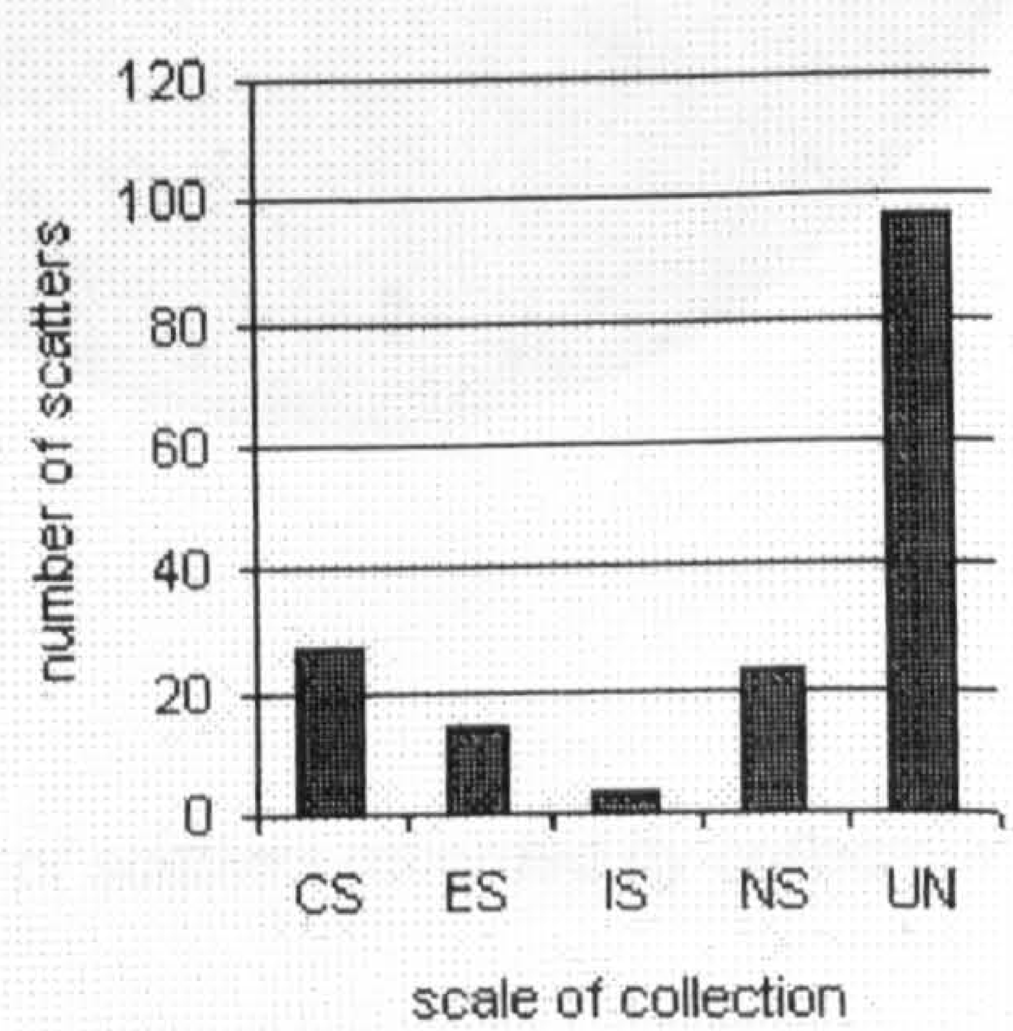


Figure 7.13 Number of scatters by scale of collection

Figure 7.13 contains a very high number of scatters, over 100, which have no information connected to the surveying technique practised by the fieldwalker(s). This lack of information is due to the fact that most fieldwalkers, when reporting their findings, have not felt it necessary to state the way in which the lithics were uncovered. This information has not been viewed as necessary since collection began: it has been the objects themselves rather than the process of discovery which has held the interest of the recorder and researcher.

It is only through a detailed record connected to larger scale research projects using a definitive research strategy, that this information is available. Many scatters uncovered throughout the 1950s and 1960s have little information concerning the process of discovery. The material evidence which represents this crux can be seen by figure 7.14 (collectors in 1950s and 1960s).

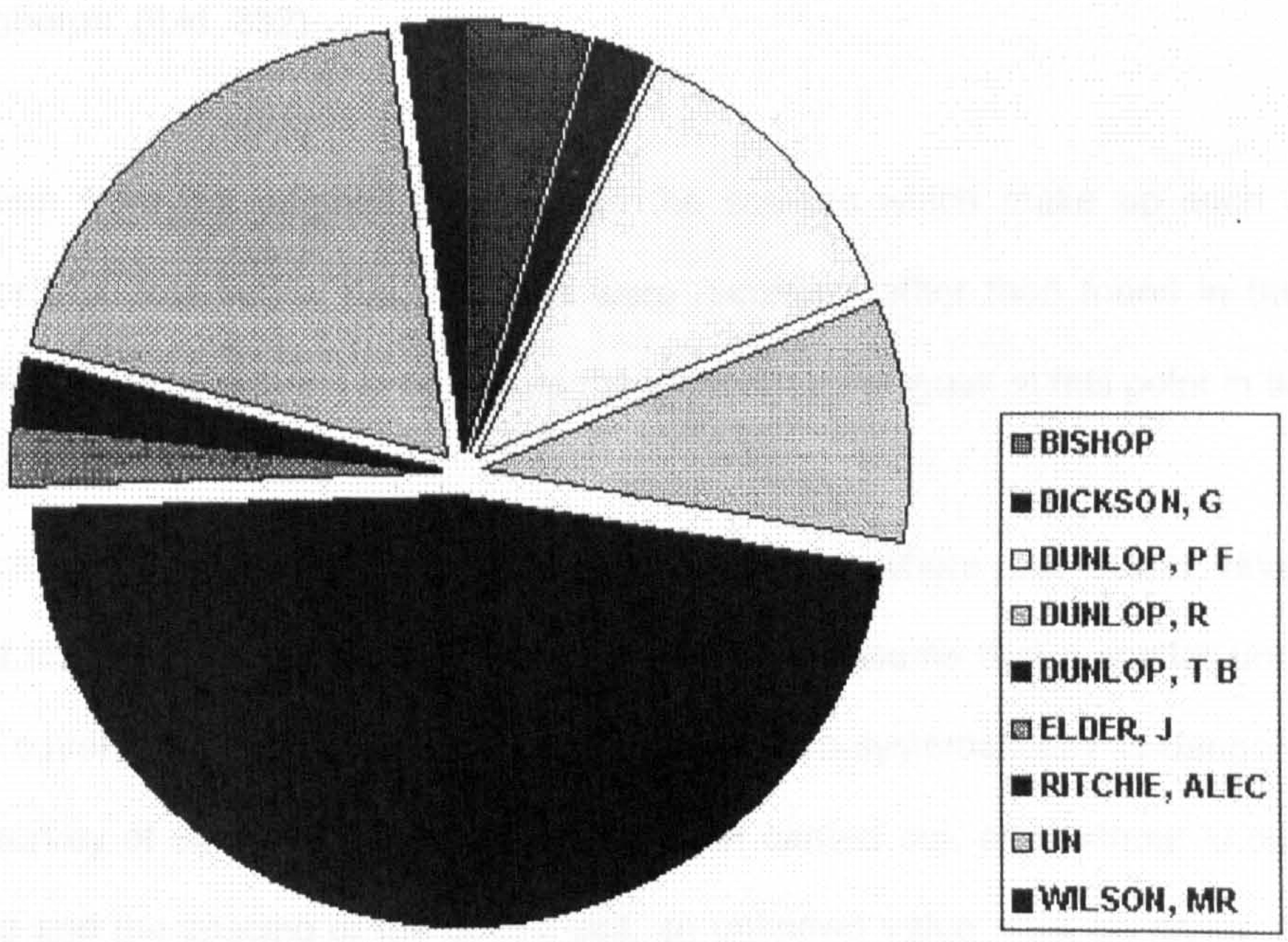


Figure 7.14 Number of scatters recorded by collectors during the 1950s & 1960s

Dunlop, T B was collecting in 1965, and Dunlop, P F in 1955. Tracing these records back through the National Museum, where the lithics are held, the 'Donations to and Purchases for' section in the Proceedings of the Society for Antiquaries of Scotland reads:

> Collection of prehistoric and later objects, mostly from the West Linton district; includes 15 stone axes, 24 miscellaneous stone objects, 89 flint and chert implements, a bronze spearhead and bronze socketed axe...
>
> 1954-6, 241.

The notes on p 228 of the same volume states that the late Peter F Dunlop was a 'mason at Dolphinton'.

In the Donations section of the 1964-66 volume of PSAS, note (7) reads 'collection of flints and stone axes from the Dolphinton district formed by the late T B Dunlop. By Miss R Dunlop, Edinburgh' (ibid. 332).

It can be seen from the original sources that the scatters which make up such a large proportion for this area within the database were *recorded* rather than found in the years 1955 and 1965, with them being entered into the museum catalogues at this point in time.

In several cases 'non-systematic' (NS) has been entered where the record reveals an unintentional find, but this cannot always be assumed. To assume that a scatter uncovered from a field covered by mole-hills has been surveyed non-systematically is dangerous - a systematic survey of each hill in turn may have been carried out, and without knowing the area covered and the spacing of the upcast soil, an unknown value must be given. Over 40 scatters have been assigned a definite scale of survey, with over 20 of these being described as non-systematic. Of the remainder, just under 20 have been extensively surveyed. Only where recent fieldwalking by the author or the Lanark and District Archaeology Society has been undertaken can there be a definite categorisation of these scatters. Extensive systematic (ES), where lines at intervals of 20 m or over are walked, has been preferred in these instances to intensive or complete. Complete systematic is then more popular than intensive, as figure 7.13 shows, no doubt as a subsequent walkover to an initial extensive survey, to pinpoint concentrations more accurately.

This can also be seen by referring to figure 7.15 where recent Mesolithic and Neolithic mixed findings have been recovered systematically. Lone Neolithic and early Bronze Age scatters, again reflecting isolated finds, dominate the unknown category for scale of collection. Again the initial assumption may be that these finds were treasures of serendipity, although a systematic survey may have been employed.

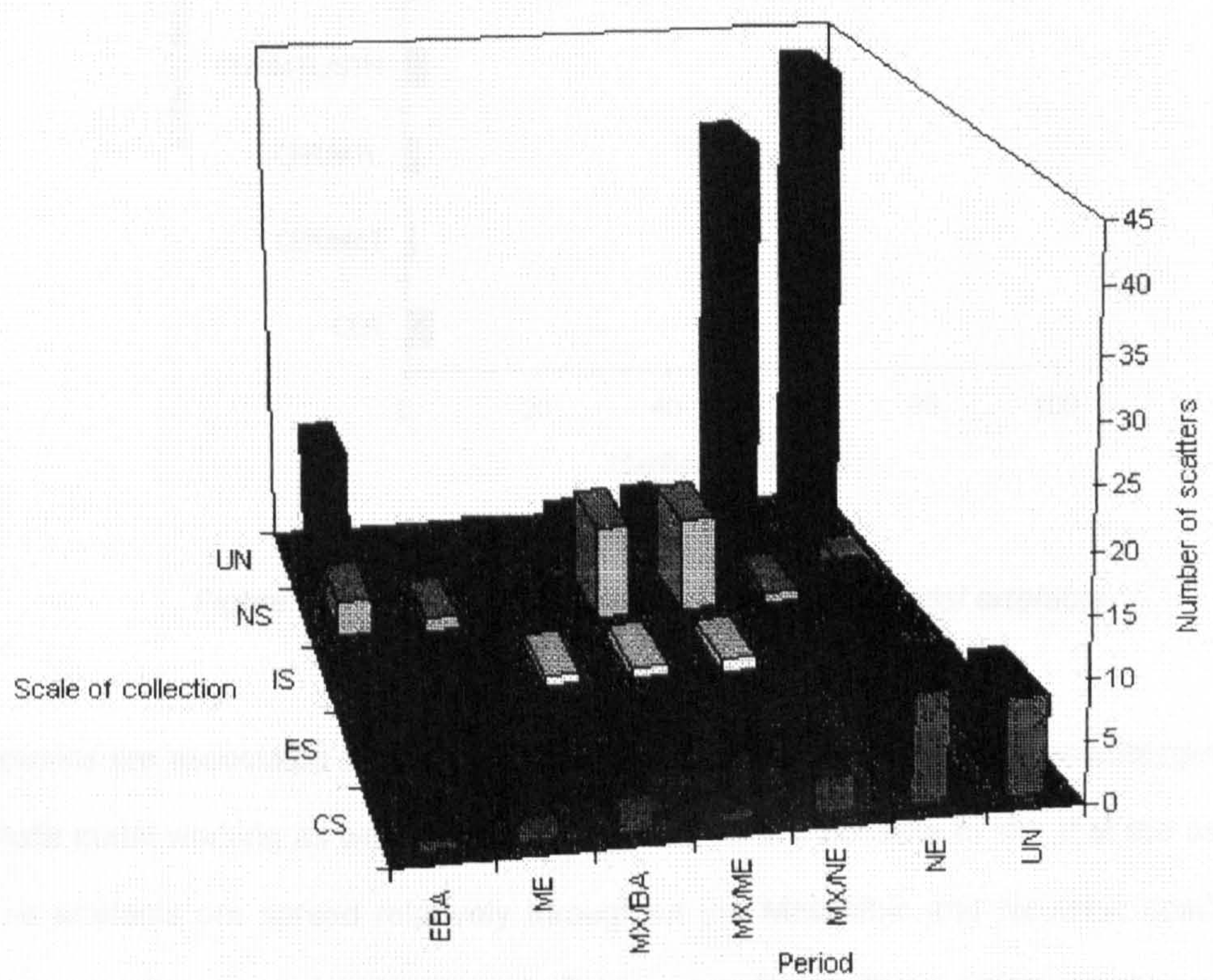


Figure 7.15 Scale of collection by period for scatters

Material Association

There is no material associated for over 70 scatters, which is the largest proportion indicated in figure 7.16. The most frequent material to be associated with lithic assemblages in the area is stone, that being coarse stone implements. This relationship exists with approximately fifty scatters. There are a high number of stone implements recorded from the area as individual finds, so a high number of scatters connected with stone tools may not be surprising (see figure 7.17).

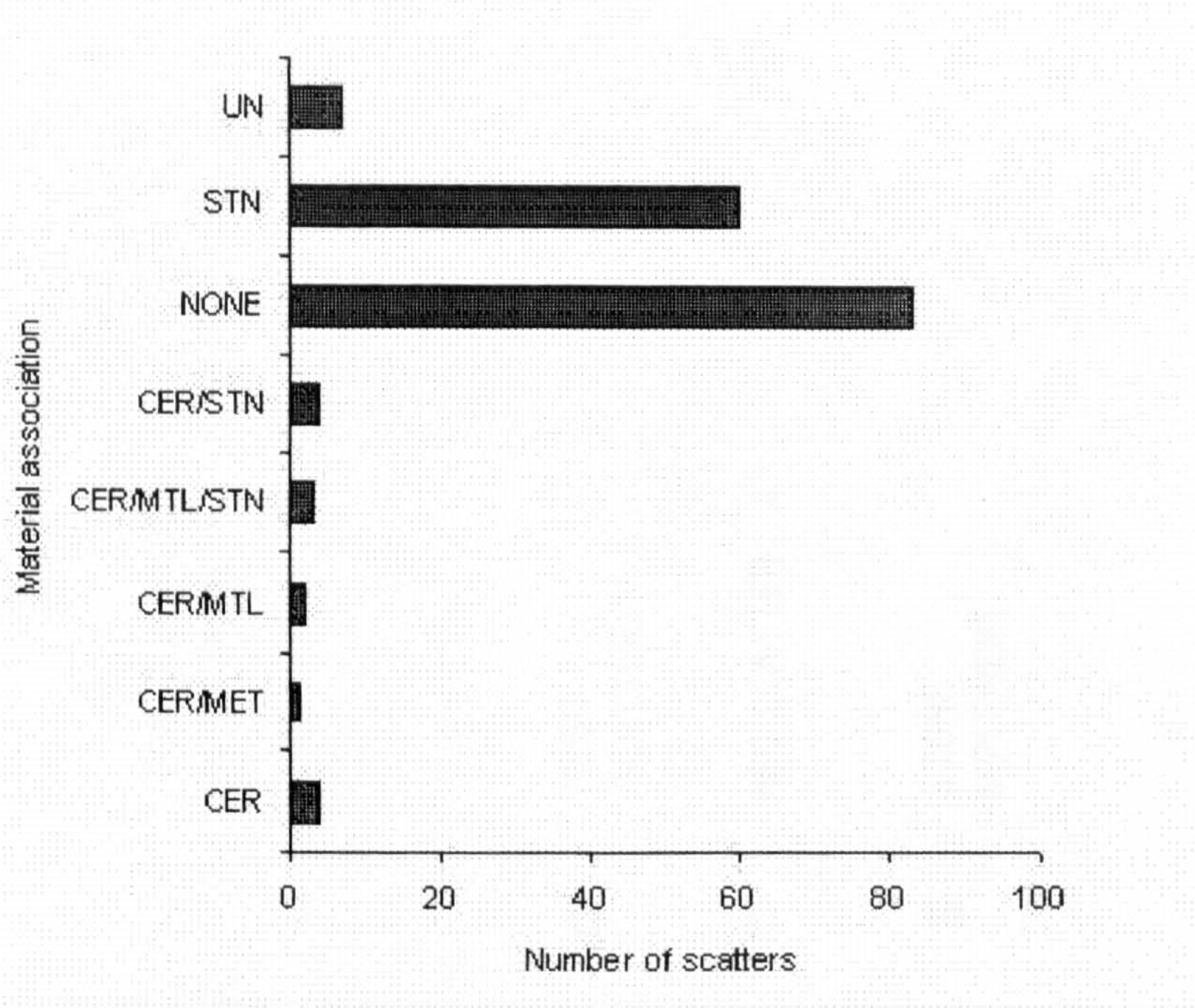
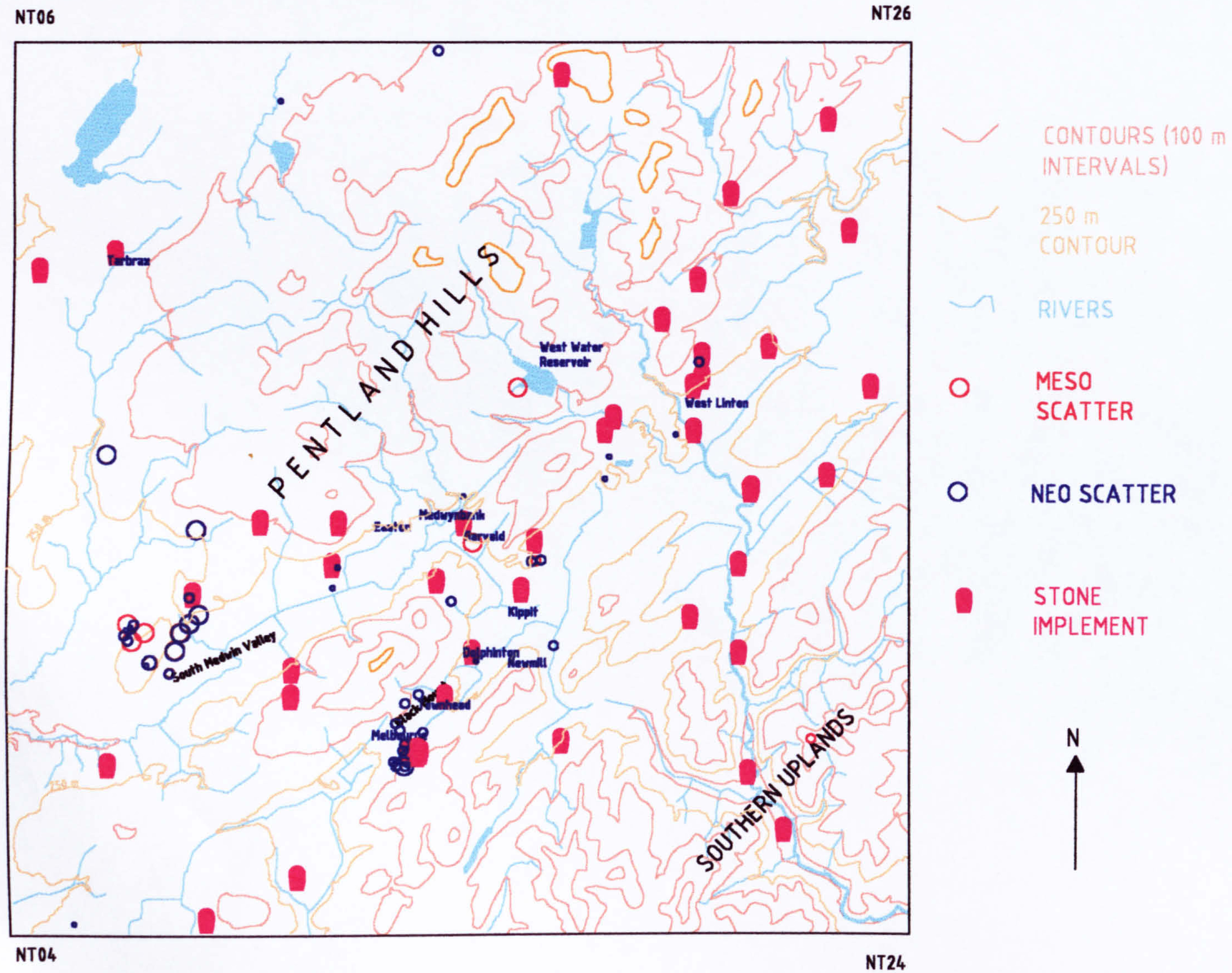


Figure 7.16 Number of scatters with related material artefacts

Ceramics are associated with a smaller number, and where there are, assemblages tend to include metal working as well. Looking at figure 7.18 it is possible to see that the associated stone artefacts are spread relatively throughout the Mesolithic and Neolithic scatters, with smaller numbers associated with early Bronze Age lithics, these being mainly barbed and tanged arrowheads. Scatters with no associated finds tend to be classed as Neolithic and early Bronze Age, these indicate isolated diagnostic lithics such as arrowheads, as has been repeatedly mentioned throughout this discussion. This strengthens the fact that the majority of scatters in the Southern Pentlands area are represented by isolated artefacts.

Figure 7.17 Relationship of stone axes to scatters



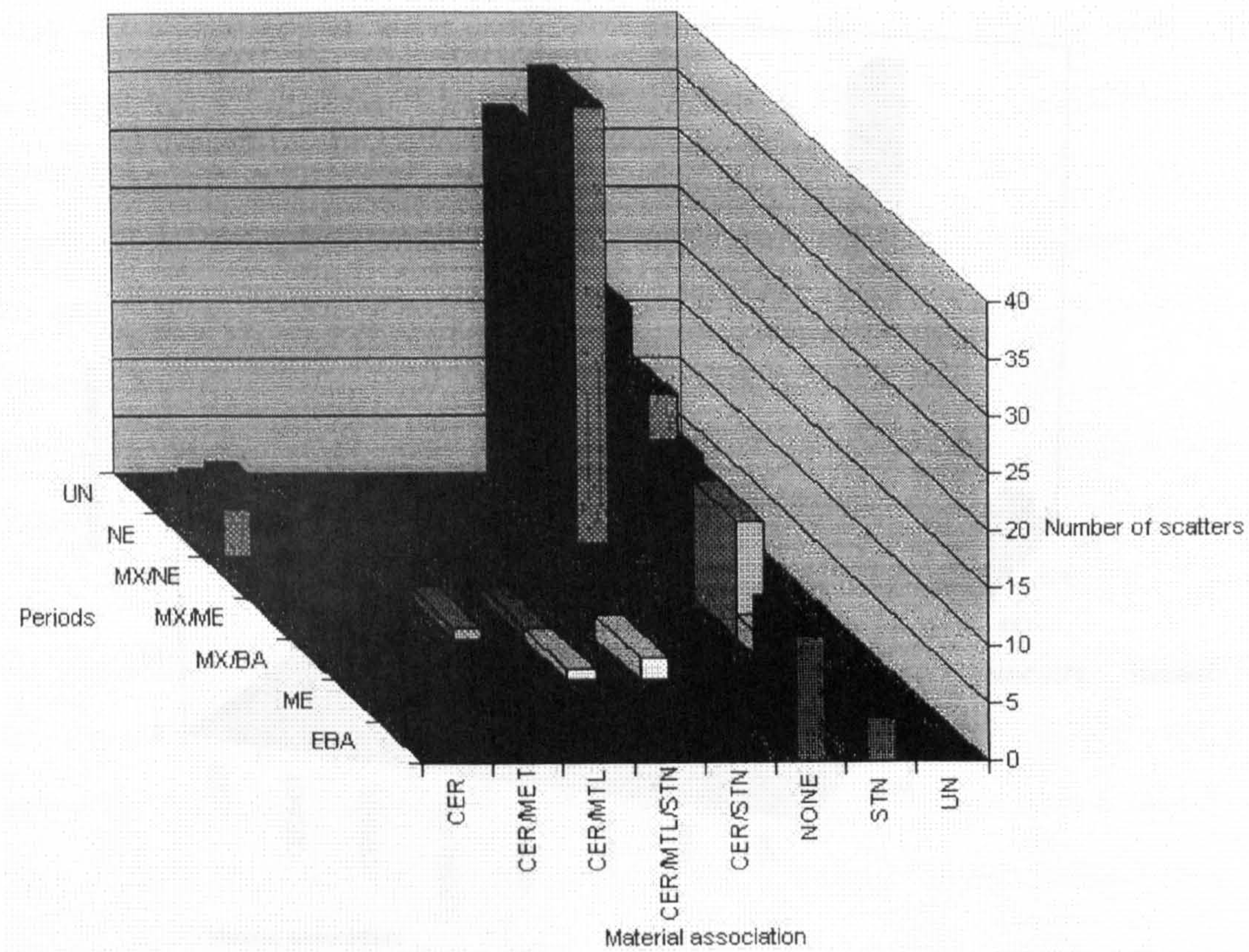


Figure 7.18 Material association by period of scatters

When material associations are plotted against the scatter functions (figure 7.19), it can be seen that stone artefacts are linked with domestic and industrial sites with ceramic material also indicated at these and specialised scatter sites. The most obvious of these sites is at Melbourne (NT 087 438) where typically 'domestic' remains such as large quantities of pottery and lithic debris were recovered on north facing hillside terraces, with no structural remains to indicate settlement. An interpretation is hard to come by given the nature of the evidence, and has hence been classified as 'specialised'. It is probably the case that a multitude of different activities have left these remains.

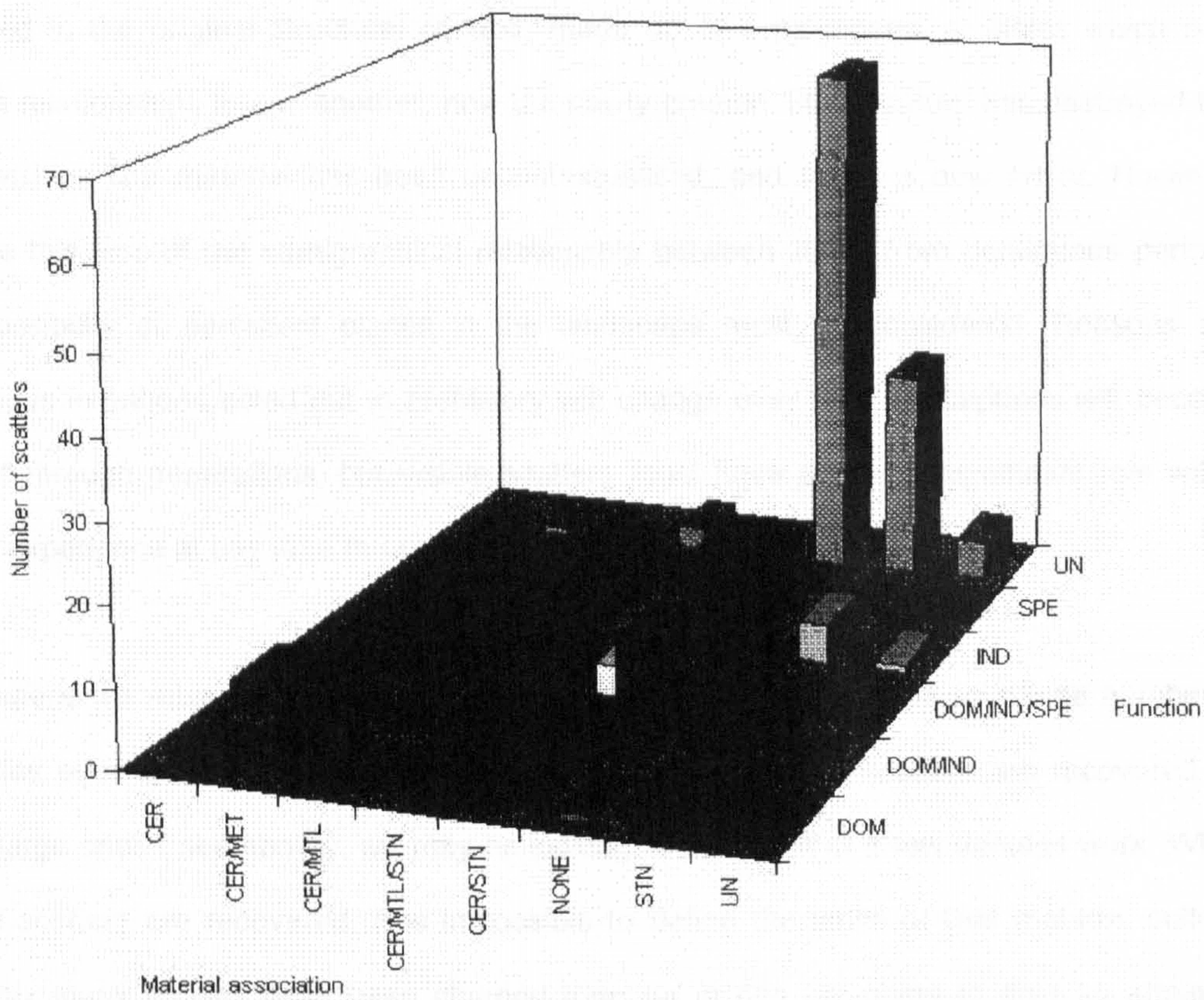


Figure 7.19 Material association by function of scatter

Periods

Figure 7.9 (size by period) gave an indication as to the representation of scatters by period. Many of the scatters have been classified as unknown and Neolithic. As mentioned above, many of these will be isolated finds such as leaf shaped arrowheads and scrapers. The bulk of the remaining scatters are split between mixed Mesolithic/Neolithic/Bronze Age, and many of these will refer to the same scatter site, as scatters in this category are repeated. This may indicate the number of sites which lie on areas experiencing a number of activities throughout prehistory, and therefore a build up and mix of artefacts - a palimpsest - forms.

It is almost impossible to tell whether the scatters are connected or not: the result of the destruction of contextual archaeology is a scatter of the material component which had a direct relationship to that context; where once there may have been a stratigraphic element attached to the original structural context, made up of a palimpsest of lithics which bore certain relationships to one another, now the newly created 'lithic scatter' has destroyed this relationship. The material has been decontextualised, and forms a new entity. However, despite this loss of the stratigraphical relationship between lithics from contiguous periods, the possibility of persistent places in the landscape must be considered. Reasons and conscious intentions acted out in prehistory will change over time, perceptions will become altered through generations, but visible scatters must have played a significant role within social experience at any time throughout prehistory, as they do now.

We experience mixed scatters as a single entity, yet it is the result of an infinite number of activities over an unknown period of time. Where single small scatters are recovered (or even large ones ! see above), we may be looking at the result of a few minutes work. When mixed scatters are recovered, it is impossible to define the limits of that material culture. Possibly many phases have been churned together in one ploughing to give an apparent single moment in time.

Function

As has previously been discussed (chapter 1) the interpretative possibilities of this field are limited due to the probable damage imposed on the original context and a similarity in shape and form between lithics within various contexts which have so often been regarded as having opposing functions. (i.e. domestic versus ritual).

Figure 7.20 reveals the number of unknown functions for the South Pentlands area, with over 100 scatters falling into this category. The other functional categories have one or more entries: domestic, industrial, and specialised are the three main choices, but combinations of these have created a range of 6 scatter types. Domestic/industrial dominates the figure (after unknown), with around 50 scatters being classified as such. This is the most frequent

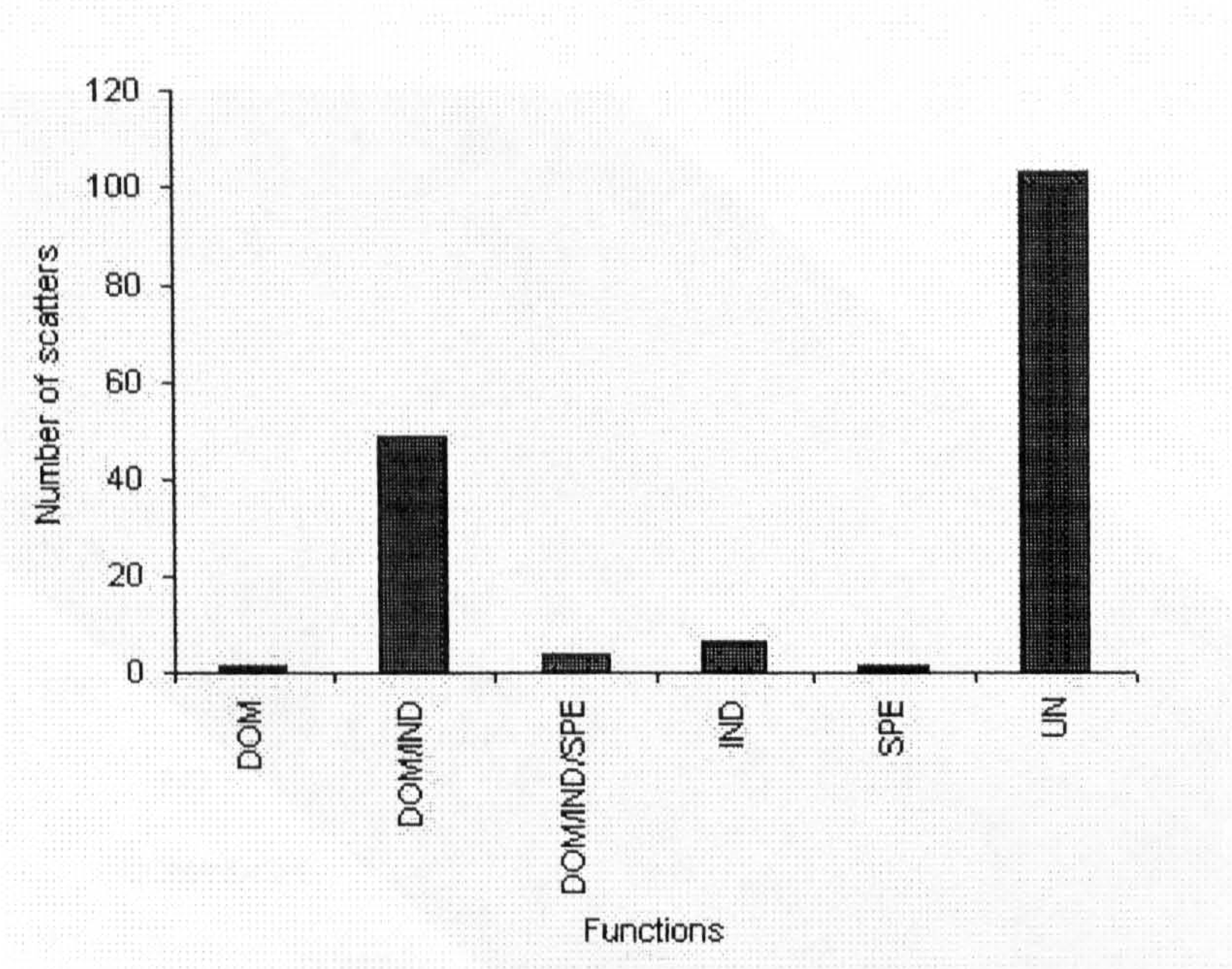


Figure 7.20 Number of scatters by function

category as the scatters there in contain a wide range of diagnostic tool types which are assumed to be connected to industrial processes, or can be found in a domestic context. This almost includes any lithic whatsoever, although it is usually only diagnostic traits which have influenced the categorisation (i.e. scrapers, awls, knapping debris). Obviously these could just as easily appear in a ceremonial or specialised context, but these labels have been allocated to lithics which are connected to a significantly exclusive role. Chert working sites at Woodhill (NT 167 440) and Stevenson Hill (NT 177 442) for instance, have been classified as industrial - for knapping has been presumably taking place here.

Crossing function with period (figure 7.21), we can once again pick out the strong single find element, within the Neolithic and early Bronze Age categories. These have mostly been left as unknown for the function field, as they are used for a number of various activities, and their contexts are not present for most interpretations.

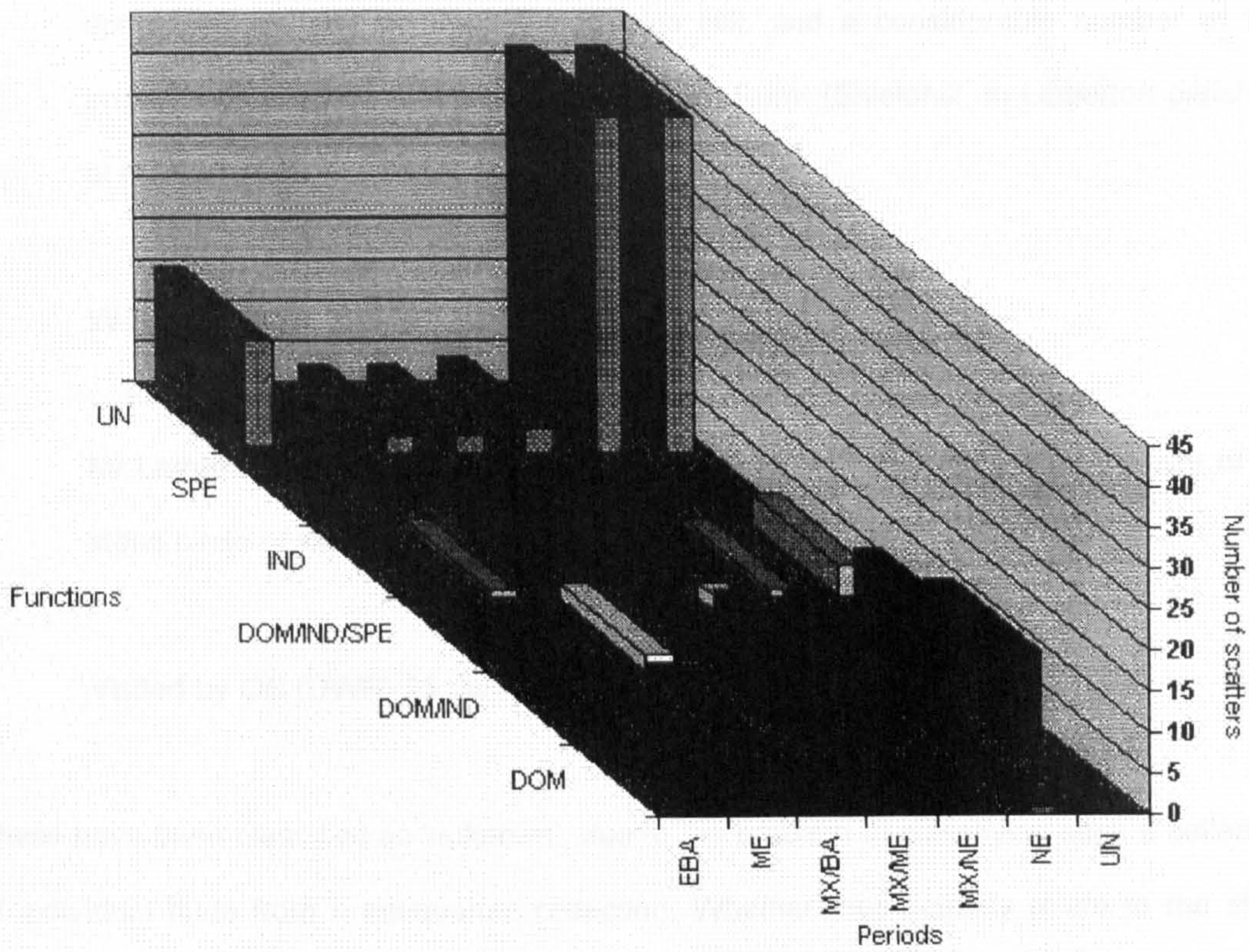


Figure 7.21 Function by period

For example, 'numerous' barbed and tanged arrowheads were recovered from a stone circle 1864 (NT04SE 7 052 405), the full reference from the NMR states:

> Four large stones, apparently the remains of a circle, stand on top of the round hill on the lands of Oldshields, now added to Biggarshields (NT 042 400) (NSA (J Christison) 1845). Numerous flint arrowheads have been found near this, several of which (four are illustrated) are in the Sim collection. This collection was donated to the NMAS in 1882, but only three barbed and tanged arrowheads were included; now listed as "from Lanarkshire" (Acc Nos: AD 548-60).
>
> G V Irving and A Murray 1864; NMAS Card Index

Probably Hunter is referring to the same site and finds when he states "Several upright stones still stand on the Shields Hill, and a considerable number of flint arrowheads have been found on the Shields farm. (Shieldhill, in Libberton parish, is at NT 006 404).

W Hunter 1867

Mr Lambie (Biggar Museum) considered Ewe Hill NT 052 405, to be the site of the stone circle of which there is no trace.

Visited by OS (DWR) 23 July 1971

These have been classified as 'unknown', due to the problem of classifying such a collection of individual finds from a antiquarian collection. Whether they actually relate to the stone circle is hard to tell, they may easily bear no relationship with it whatsoever.

The largest functional category of domestic/industrial falls mainly into the Neolithic (with over 20 scatters), with half this number in the mixed Mesolithic scatters.

As mentioned above, under *period*, figure 7.19 (material by function) gives an indication of what material associations are linked to function classification. If the bias from the unknown category is taken out the equation, it can be seen that scatters described as being domestic and industrial, have a high amount of stone associated with them, such as at Weston (NT 034 457; NT 034 461) and Melbourne (NT 086 441). The implements referred to as 'stone' include hammer stones, anvil stones and quernstones. Ceramics are also associated with these sites.

Survival

Again a high percentage of this field is unknown, as it is hard to gauge whether scatters still exist or not in many cases. It cannot be assumed that the collection of single finds has 'destroyed' a scatter, unless definite development has completely changed the environment at the scatter location. For one single find on the surface of a field, there may be one hundred underneath the surface.

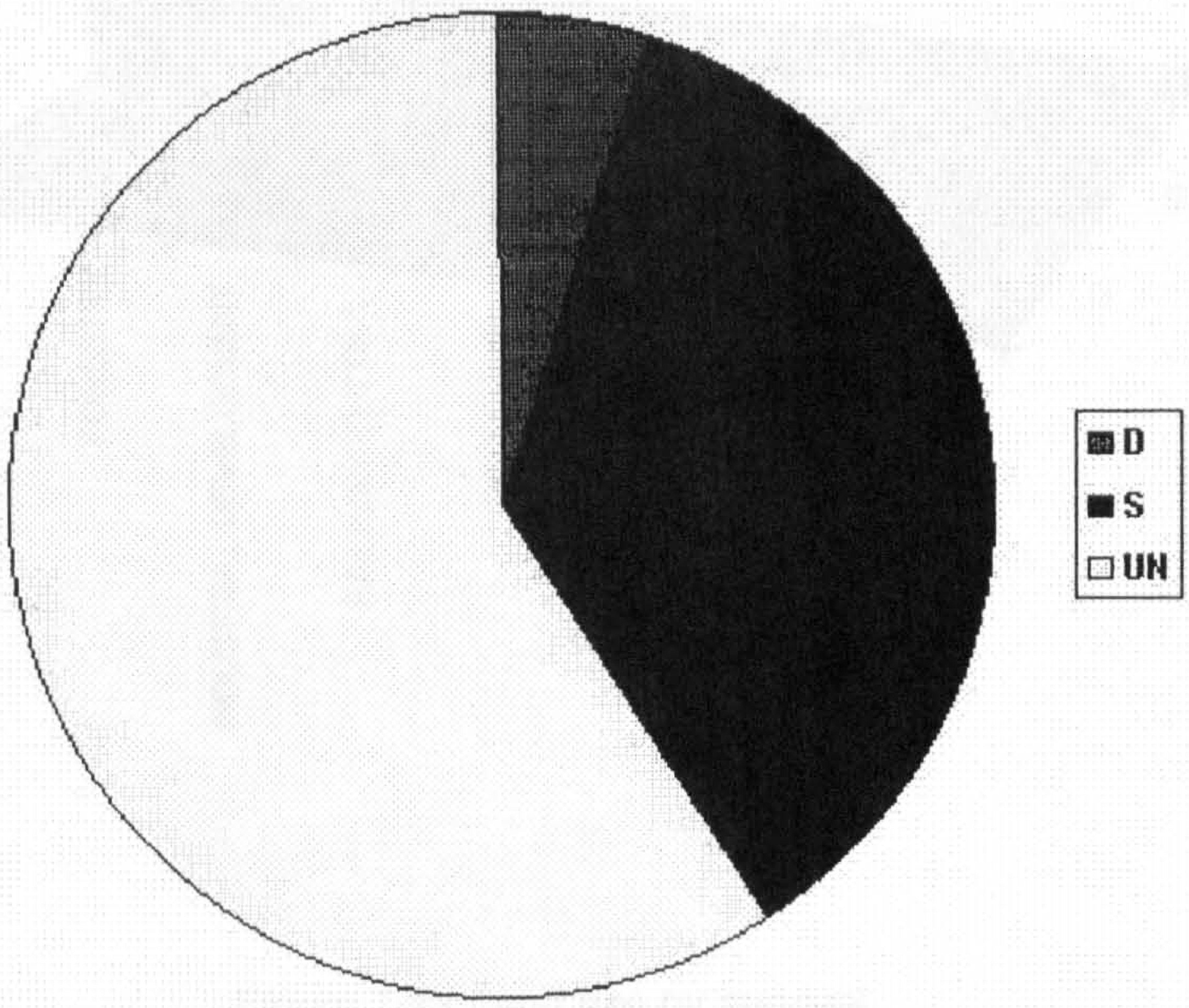


Figure 7.22 Number of scatters for survival

59 % of scatters have been recorded as 'unknown'. The majority of these represent scatters which have no accurate provenance and are tied by a four figure grid reference only. Without a more accurate location it is impossible to tell whether the land on which the scatter was found is still arable, or whether development has effectively 'destroyed' the scatter. 36 % of scatters survive, with only 5 % having been destroyed.

Land use by survival (figure 7.23) indicates an even relationship across all land uses for surviving scatters, although significantly all evidence of scatters is destroyed within industrial

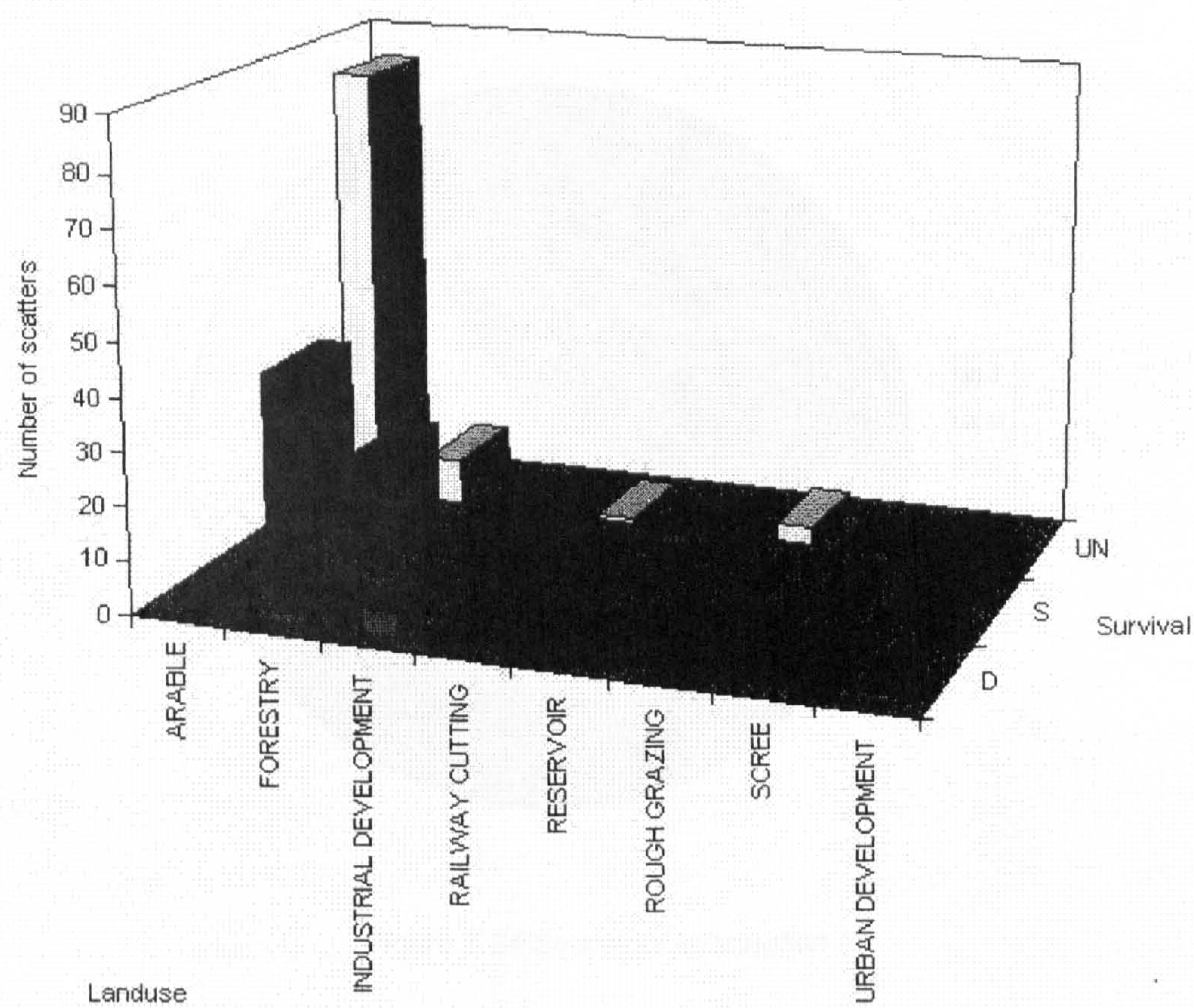


Figure 7.23 Land use by survival

developed areas, these being sand and gravel quarries. Survival is significantly higher than destroyed scatters on land managed for rough grazing.

Source of Information

59 % of the scatters were taken from information within museums, usually from their catalogues (figure 7.24 sources). Figure 7.25 (curators) shows the various curators of the scatters represented, and it can be seen that the largest collections are held by the National Museum in Edinburgh, at 100 scatters.

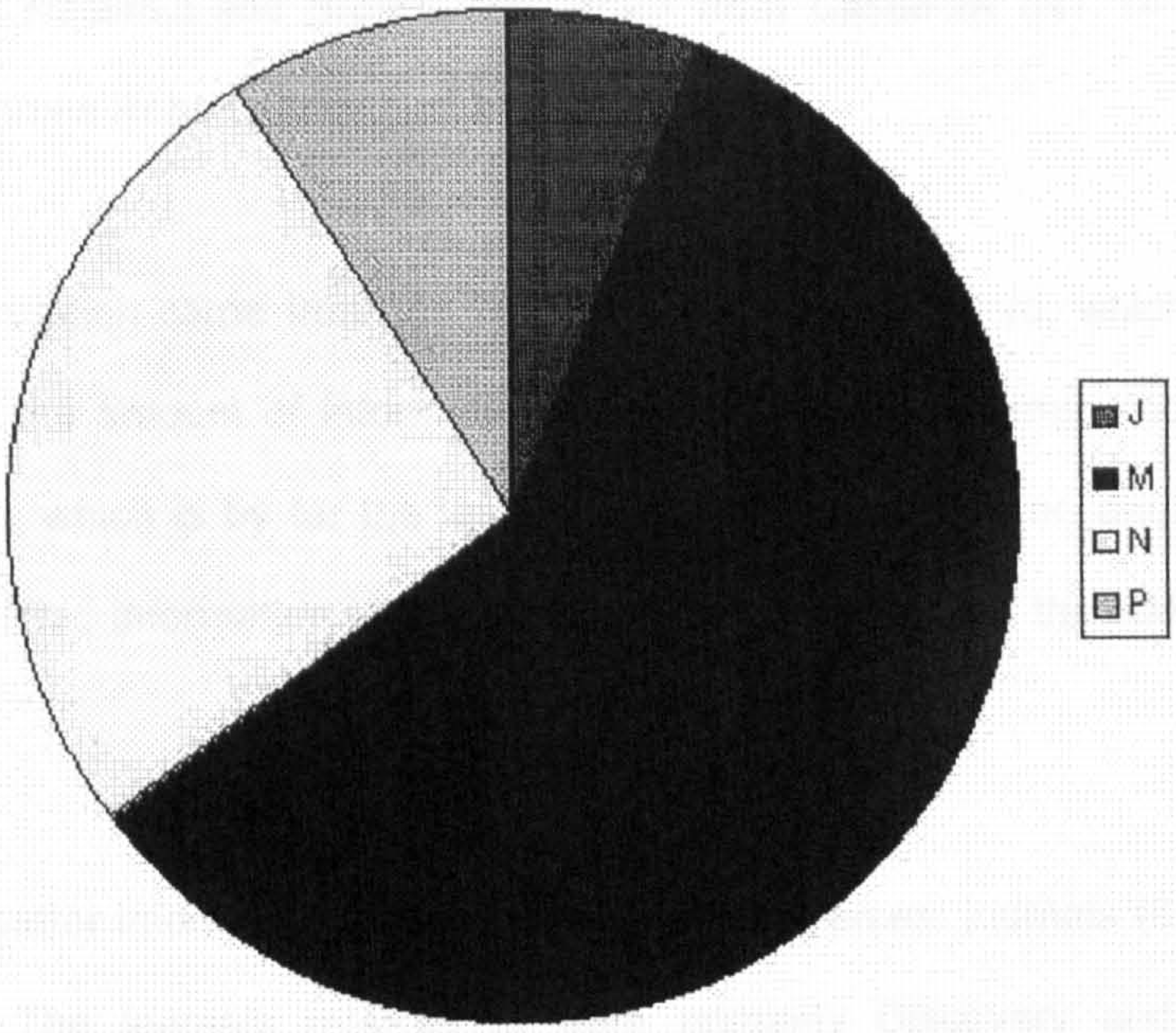


Figure 7.24 Source of information

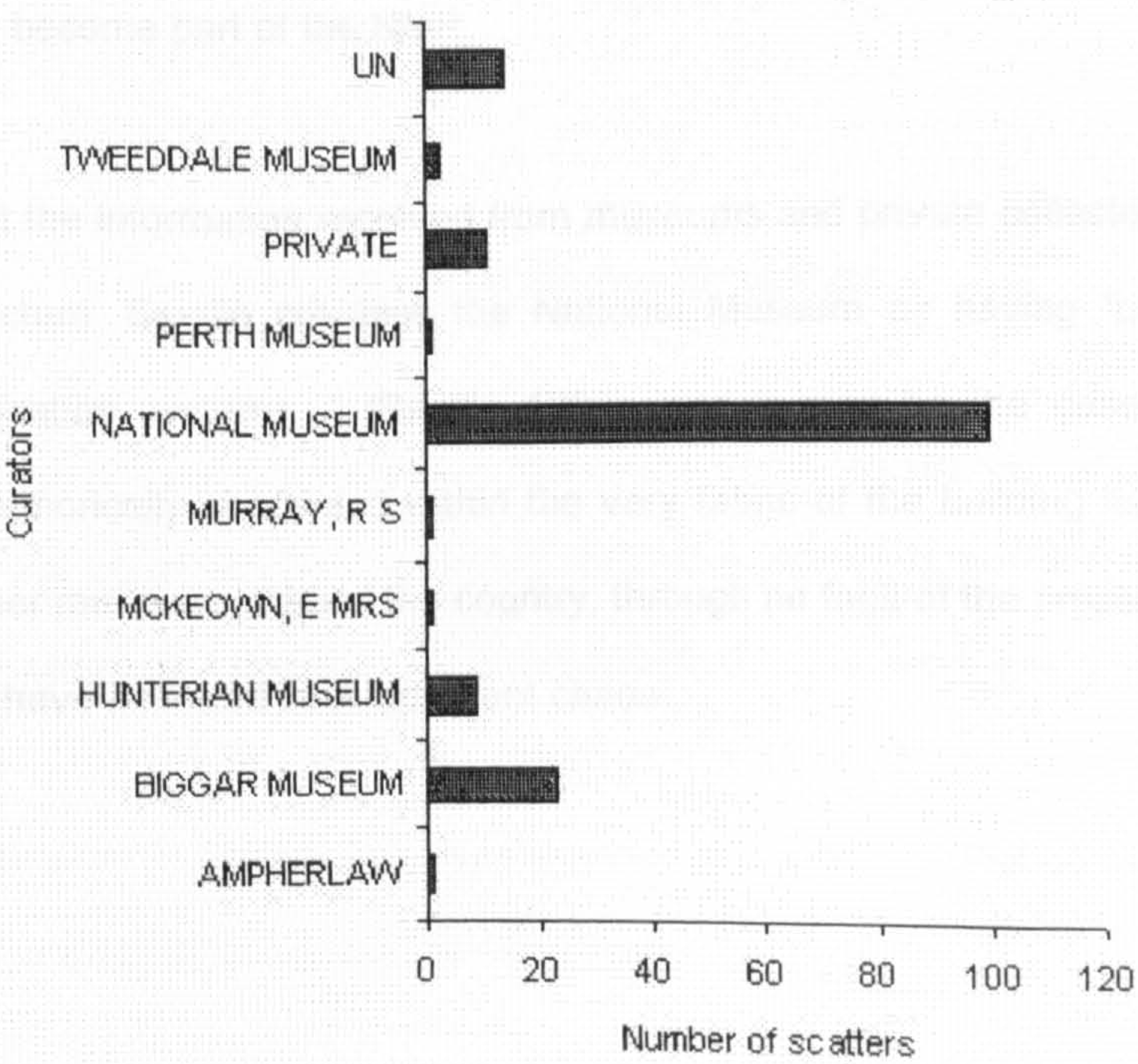


Figure 7.25 Curators of the information and collections

The Hunterian also holds a large amount of material from this area, with local museums such as Biggar and Tweeddale having a smaller number. Perth museum also holds a small amount of mixed Neolithic and Bronze Age lithics from Castlelaw (NT 14 51), which are within the large James Roberts collection held here.

26 % of the information came from the National Monuments Record, which is surprisingly low compared to the amount of information recovered from museums, and especially the National Museum, which is by far the largest curator in town. This no doubt indicates the large number of lithic information which needs to be deposited into the NMR from various museums.

The remaining scatter information came from two other sources: journals (6 %) and private collectors (9%). The journals referred to were primarily Discovery and Excavation in Scotland and the Transactions of the Society of Antiquaries. The most recent editions may have information which is yet to be synthesised with the NMR, as do many of the collections held in private hands. A positive aspect of this project is that this previously unknown scatter information can now become part of the NMR.

It must be noted that the information received from museums and private collectors may not be the complete picture. Saville criticises the National Museum as having "Labyrinthine storage and classification systems..." (Saville 1998), and it may be the case that lithic collections are metaphorically concealed within the very fabric of the building itself. This is no doubt true for other museums around the country, through no fault of the present curators, rather it is they who have inherited such apparent chaos.

Heights

Figure 7.11 shows the heights of the scatter within the study area. The majority of them sit around the 250 m OD mark, as discussed above.

Recent Land Use

There are eight different land uses represented, which can be seen with relative proportions of number of scatters from each in figure 7.26.

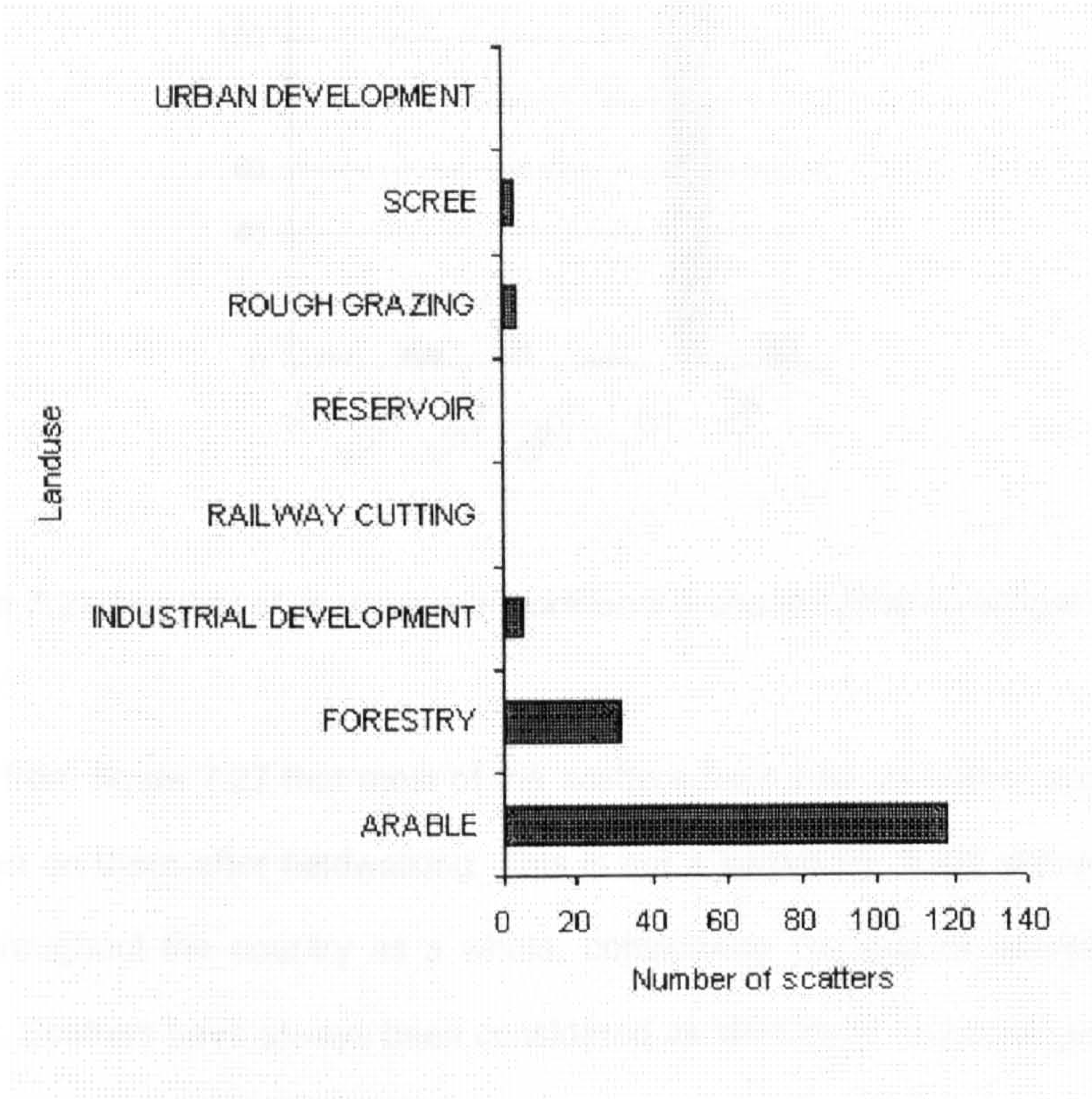


Figure 7.26 Number of scatters by land use

Arable is the most frequent land use for scatter discovery, which follows the national pattern. The only other land use which involves ploughing is forestry plantation, and this has the next highest number of scatters, at just under 20. Rough grazing has a surprisingly high number considering the lack of ploughing, although some improvement to certain rough grazing areas may have been undertaken and eroding sheep scrapes, burn sections and footpaths all contribute to revealing material culture of past activities.

Pasture has been included under the term arable, and although not as frequently ploughed (usually on a 5 or 7 year cycle), mole hills can certainly create scatters. Many lithics recovered by Murray at Weston were found from mole upcasts.

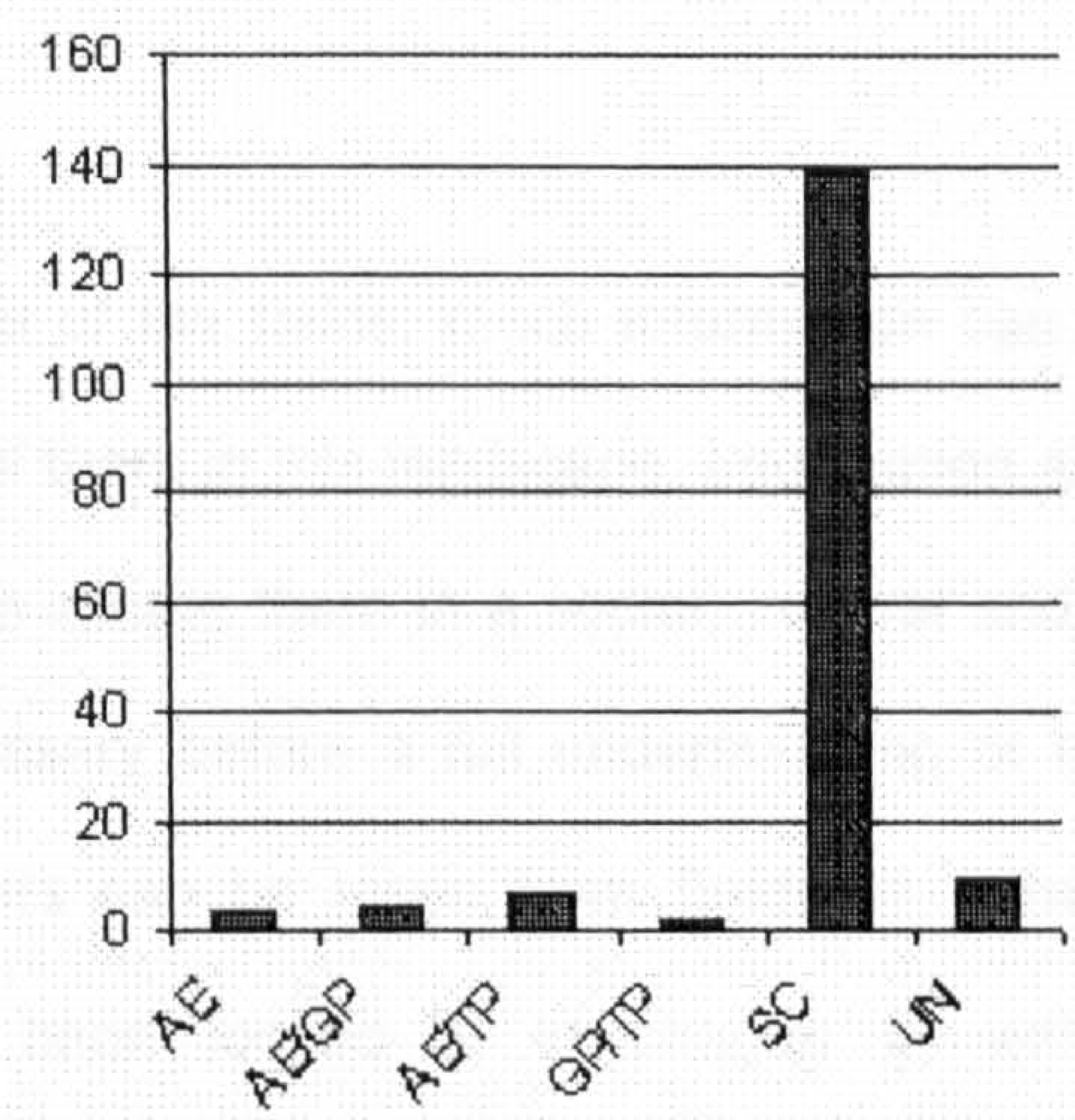


Figure 7.27 Number of scatters with additional archaeological investigation

It can be seen from figure 7.27 that most of the scatters have had no further archaeological work undertaken on them after fieldwalking. This is not a surprising result and will no doubt be reflected throughout the country as a whole, considering the lack of interest in scatter sites up to now. Scatters have always been considered as 'destroyed archaeological remains' and fieldwalking has been thought of as adequate in recording this specific phenomena, with minimal investigation of sub-surface features (apart from a few examples i.e. Wickham-Jones 1994).

The remaining categories all lie at less than 10 scatters. A large part of this work has been carried out by Ward (1993; 1995; 1997; 1998) and the author (forthcoming), with mixed results, some of this fieldwork will be discussed as part of the interpretation in chapter 9.

Most of this work has been done on scatter sites which have been surveyed intensively, and on scatters which are discrete. These figures illustrate the logic behind strategies by the fieldworkers involved in the further investigation of these scatters - if the scatter is discrete, it suggests that *less* damage has resulted from ploughing and therefore further investigation may reveal sub-surface archaeology.

Conclusion

Through a simple analysis of the fields, much information can be gleaned concerning the scatters and the location of them in this landscape. Information about the collectors and work done on the scatters helps situate them in a social, cultural and historical context, although more information is necessary before a full understanding of the data is granted. Further information on the scatters can be taken from fieldwork carried out at specific sites. A handful of these have been looked at in chapter 9, with metrical analysis aiding interpretations. The experience of landscape and production of locality is a key issue when considering these scatters, and this has been gained through fieldwork around this area. The next chapter looks at a specific site, Garvald Burn. Through this study, the experience of fieldwork is analysed, and we can see how interpretations are formed through the fieldwork process.

Chapter eight

Garbh allt (rough, tumbling stream)

> Imagery is a significant vehicle of the emotive or the affective in archaeological experience; archaeology abounds in striking, strange and fascinating images...I want to consider all dimensions of archaeological experience, not just the intellectual or the cognitive. I see this as part of a project of embodiment, of locating the practices and pleasures of archaeology not just within the mind but within the body: embodied experience.
>
> Shanks 1992, 1.

Introduction

This chapter documents a period of fieldwork, and illustrates that other people influence past interpretations. The narrative is divided between the traditional style of report showing the 'archaeologists gaze', and a more personal documentation of my experience in the field. Rather than looking at the process of fieldwalking, this chapter highlights the experience of a range of field techniques, from geophysics, to phosphate analysis, and test-pitting. The subjectivity of these techniques is highlighted.

A range of outside experiences also influence the final work. A group of farmers worked in the same field throughout the duration of the fieldwork, and their techniques and perceptions are discussed throughout, acting as a scale from which to highlight the problems with taking fieldwork, and the results from it, for granted.

When these experiences are combined with the data discussed in the previous chapter, we can move onto creating stories about the past (chapter 9).

Summary

This region was chosen due to the abundance of finds and scatters which have been uncovered in the wider vicinity in recent years (Clarke 1989;Ward, 1993; 1995; 1997; 1998), and which was not reflected within the area of the South Medwin river. There appeared to be a distinct lack of fieldwork from this specific area.

The South Medwin river runs east-north-east to west-north-west from its source in the Pentland Hills, becoming the Medwin before confluencing with the Clyde at The Meetings (figure 8.1). This area is directly north of the valley being fieldwalked by the Lanark and District Archaeological Society, and so fits in well with a larger scale study of the Upper Clyde area. Any additional work would tie in well with work from other areas. The southern slopes of the Pentland Hills lie to the north again, and these are littered with hundreds of stone monuments many of which are Neolithic.

Several fields were walked in this area, with a substantial chert scatter being found in the last, at Garvald Burn, near Dolphinton (NT 101 486). A more intense survey was carried out here using geophysical and geochemical analysis, and finally test pitting was undertaken across the site to answer various questions regarding the nature of the scatter.

Figure 8.1 Reproduction of map with field-notes

Geology

The Southern Upland fault runs from the south west to the north east and divides the area in two. South lie the hilly Southern Uplands composed of marine greywacke and siliceous radiolarian chert formed in the Ordovician and Silurian age (about 450 million years ago). The landscape is much flatter north of the fault and is composed of rocks laid down later in time in the Carboniferous age, and contains coal, iron-ore and limestone, to name a few of the sediments of which there are many. Over the top of these lie thick deposits of sand and gravel laid down by glacial and fluvial activities at the end of the last glaciation (Ordnance Survey 1952a; 1952b). The whole extent of the South Medwin valley is a mixture of fluvioglacial red and reddish brown sand and gravels derived mainly from Old Red Sandstone sediments. Undifferentiated alluvial soils lie along the courses of the river and its tributaries (OS 1975).

Fieldwalking

At the time of walking, there were roughly 16 fields which had been ploughed, and 10 of them were walked in a week. The land here is primarily pastural, and so ploughed fields are few and far between, usually planted for either reseeding pasture or winter feed for the animals The window between ploughing and sowing was relatively short at this time of year, and so there was a limited amount of time in which fields could be surveyed. Figure 8.1 shows the area which was walked and the fields covered are annotated.

Field A Westfield (NT 072 469)

The position of this field seemed to be ideal for settlement, slightly raised up off the flood plain/ valley floor (215-235 mOD), with a burn running down the east side from the south. With a slight slope to the north, the field had splendid views over the South Medwin valley, looking across to Dunsyre and Dunsyre Hill to the foot of the Pentlands.

The soil in this field was very loamy and heavy, and had been shallow ploughed fairly recently. There was a high concentration of gravel and pebbles within the surface material, which made spotting archaeological deposits relatively hard. There was also a large number of natural chert pebbles within this material.

The field was walked in lines 15 m apart, and only one flake of flint was found. This had been snapped at both ends and was heavily patinated.

Field B Borland Moss (NT 055 467)

Positioned further to the west along the valley, and situated right on the floodplain the soil in this field was much thinner, and had a higher sand content. The wind had blown sand over the surface, covering all traces of stone, which made it impossible to see any surface material. We walked in lines 15 m apart and came up with nothing.

Field C, D E, F, G, H & I Broomie Law (NT 075 482)

These seven fields are situated around the hill of Broomie Law (269 mOD), directly east of Dunsyre village. They are on the south facing slopes of the valley, across from field A.

All seven fields were walked systematically as before. The soil type was similar in each one, with a loamier texture than the previous fields. The only finds uncovered were from fields D and G: three flakes of chert coming from the top half of D, two of these were flaked chunks, slightly water-rolled, the other had slight retouch along one edge; field G held two chert flakes in the west corner.

Fields E, H and I had an abundant amount of natural chert chunks none of which showed any signs of working. This confirmed the origin of other worked chert from the area - the natural chunks were of good quality and would be quite suitable for knapping.

The only other fields which had been ploughed and were adequate to walk were at the eastern end of the valley, at Garvald.

Field J Garvald Burn (NT 101 486)

The field in which the scatter lies is to the north of a small stream named Garvald Burn, at the foot of a slope running down from Whitehill Head. This is a sheltered location although soon to be exposed by the extension of the sand and gravel quarry to the south. There is a marshy area at the foot of the field, which rises from this onto a flatter terrace. Several chert flakes and blades were uncovered from this flat area adjacent to the marsh, the densest part of this scatter extended for approximately 40 m parallel to the marsh (figure 8.2).

The field was walked in lines 20 m apart and each find was bagged and marked with a flag. Once the whole field was walked in this fashion and it was obvious that there was a significant scatter of material, we walked the field again at 10 m intervals, to locate specific concentrations of lithics. These were clearly indicated by the flags (see figure 8.3).

After walking the specific concentration again, a complete systematic search was carried out over an area 40 x 40 m which overlay the main concentration of artefacts. The edges of the main concentration of the scatter then became apparent.

Over one hundred flakes were surveyed into the grid to the nearest 10 cm. It can be seen from the distribution diagram that the lithics form various concentrations within this area, and so it was decided to investigate the whole area further with geophysical analysis, before opening up any test pits. The nature of the lithics suggested a Mesolithic date, as microliths and narrow blades were recovered.

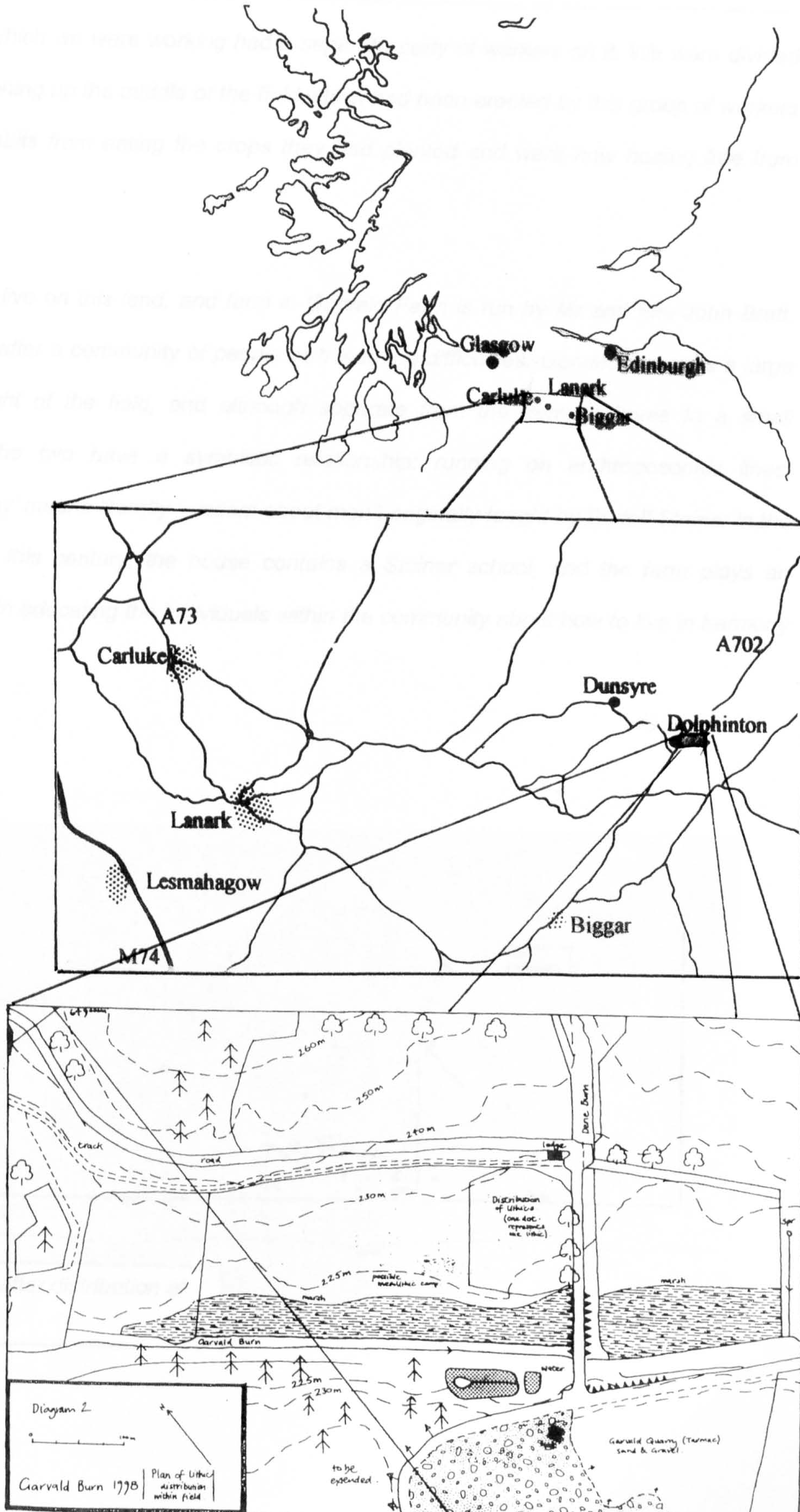


Figure 8.2 Location plan of Garvald Burn

The land on which we were working had a separate party of workers on it. We were divided by a fence running up the middle of the field which had been erected by this group of workers to prevent rabbits from eating the crops they had planted and were now hoeing free from weeds.

These people live on this land, and farm it. Garvald Farm is run by Mr and Mrs John Brett, and they look after a community of people with learning difficulties. Garvald House is a large building in sight of the field, and although separate from the farm, is home to a small community. The two have a symbiotic relationship: running on anthroposophic lines, ('anthroposophy' means literally 'wisdom about man') originally taught by Rudolf Steiner in the earlier part of this century, the house contains a Steiner school, and the farm plays an important role in educating the individuals within the community about how to live in harmony with nature.

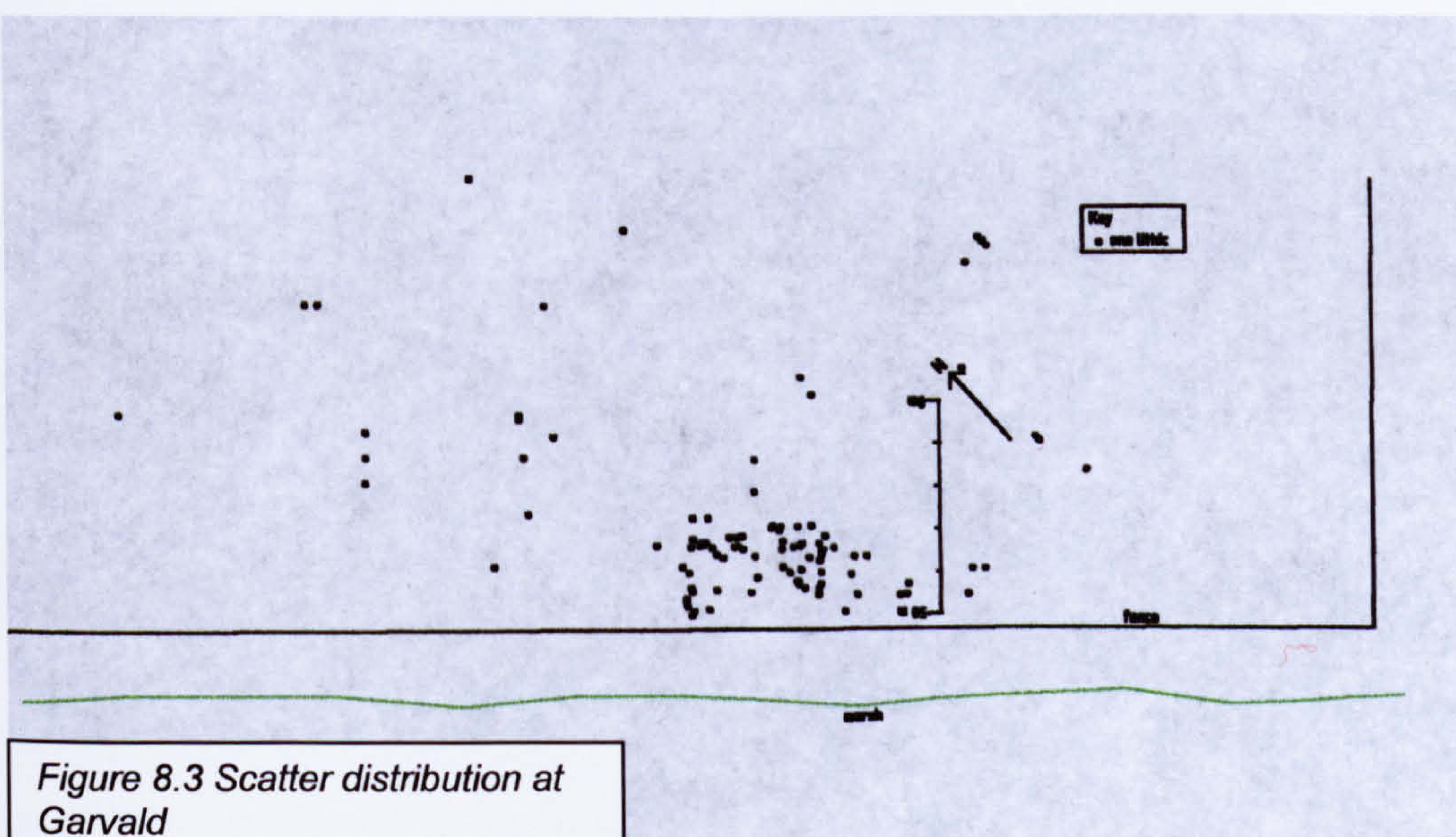


Figure 8.3 Scatter distribution at Garvald

I felt divorced from the field – it felt alien
to me. The farm workers looked completely
at ease in their surroundings, not ~~give~~
giving anything a second thought.
I felt as if I was invading their space,
a visitor within their field.

Figure 8.4 'There is a ritual to potato sowing' reproduced from Don 1999, 140

Geophysical survey

Geophysical survey has been used over scatter sites to add to the knowledge of the potential sub-surface archaeological deposits in the area, and to confirm (in some cases) any archaeology which may be indicated by the scatter (Richards 1991; Entwistle & Richards 1987; Bradley 1987). It is useful in circumstances where further test-pitting or excavation is necessary over a scatter site, as an added method of prospecting.

The surveys undertaken at Garvald used a Geoscan Research Ltd FM36 Fluxgate Gradiometer and an MS2 Bartington Magnetic Susceptibility meter. All data was processed using Geoscan Research LTD's Geoplot 2.00 data processing package (Sharpe, forthcoming). A total of eight 10 m by 20 m grids were surveyed at 0.5 m sampling intervals. The grid used had previously been set up for the intensive systematic walking of the lithic scatter, and so was a convenient starting point and gave standardised results throughout the whole fieldwork.

The gradiometer survey

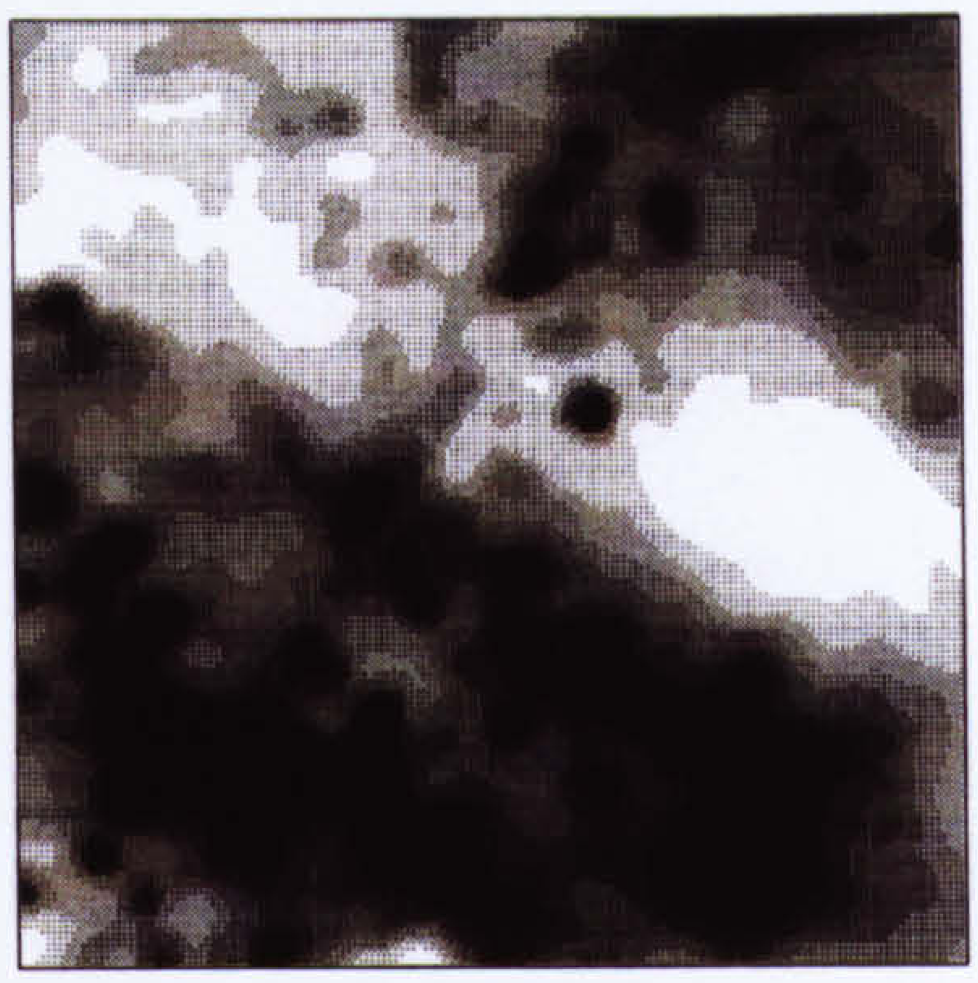


Figure 8.5 Gradiometer survey (20 m across)

There were a number of variations in the background in the grid, which presumably indicates drift geology. This is to be expected as the site lies close to a river which may once have been part of a fluvio-glacial environment after the last glaciation. Superimposed upon these natural changes are a number of small, discrete, and much stronger changes in magnetic properties. These anomalous areas measure on average 0.5 to 1.0 m in diameter, and some appear as dipoles, which are characteristic of burnt areas that have remained in-situ. This was the main interpretation which was considered, and subsequent methodologies were directed at validating this.

The magnetic susceptibility survey

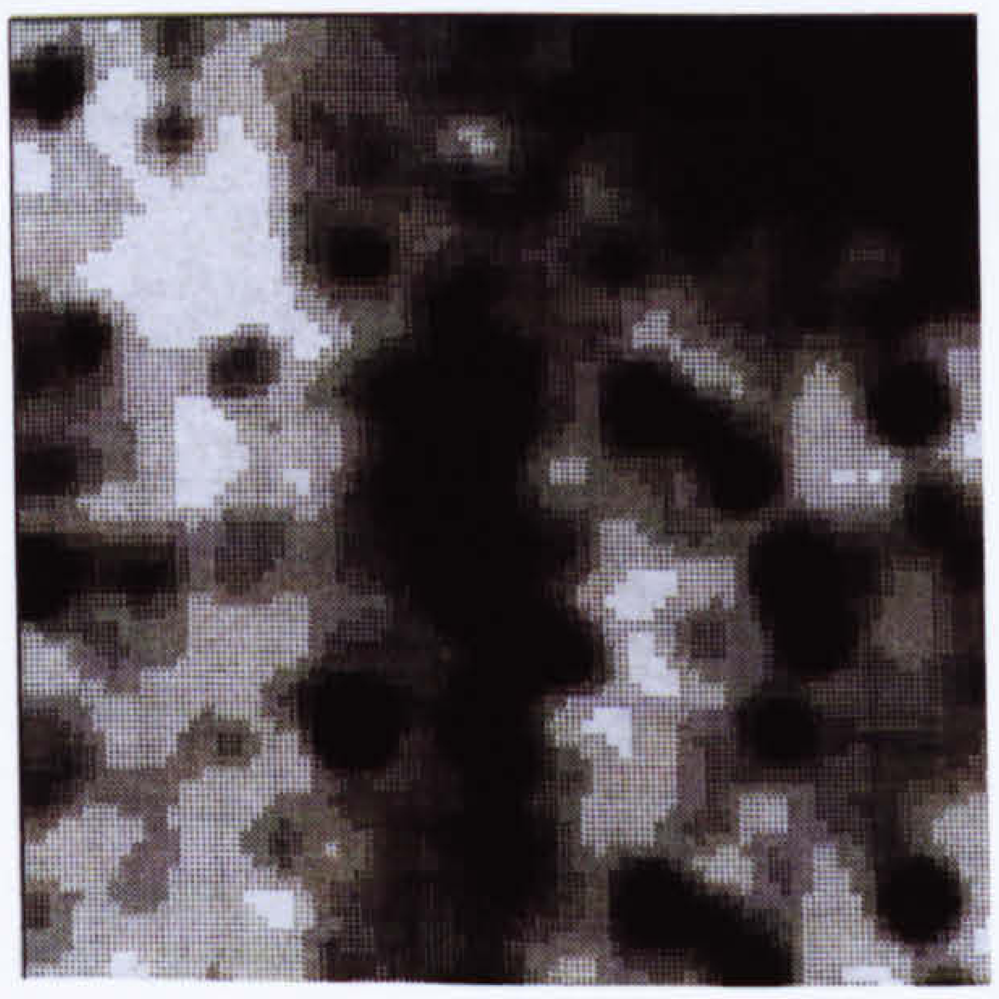


Figure 8.6 Magnetic susceptibility survey (20 m across)

Again the drift geology was detected, although not as clearly as before. The discrete, stronger magnetic signals were also detected. Although some of these anomalies correspond with those detected in the first survey, the majority of them do not. It was suggested that this may be due to the fact that the Magnetic Susceptibility meter will measure to a maximum depth of

c. 30 cm below the soil surface, whereas the gradiometer is capable of detecting anomalies down to a depth of around 1 m (Sharpe pers comm). Added to this difference in measuring depth is the fact that the gradiometer is a passive instrument, whilst the MS2 actively puts an electromagnetic signal into the ground and measures the attenuated, returned signal. In other words, the Magnetic Susceptibility meter is most likely to have measured shallow and fainter anomalies, whilst the gradiometer has revealed the deeper anomalies which have a stronger magnetic signal (Sharpe forthcoming).

The geophysics survey seemed so scientific compared to the fieldwalking which had gone before, which could be described as people staggering over a field in apparent straight lines, but which never were. Straight lines were created to some extent however through the geophysics - covering the same ground, albeit a smaller area, with taut ropes guiding the walker. A working space was being created in the field, a rigid framework seemed to be encroaching into this wild space, as if we were making sense of the unknown through objective techniques, which I realised was far from the truth.

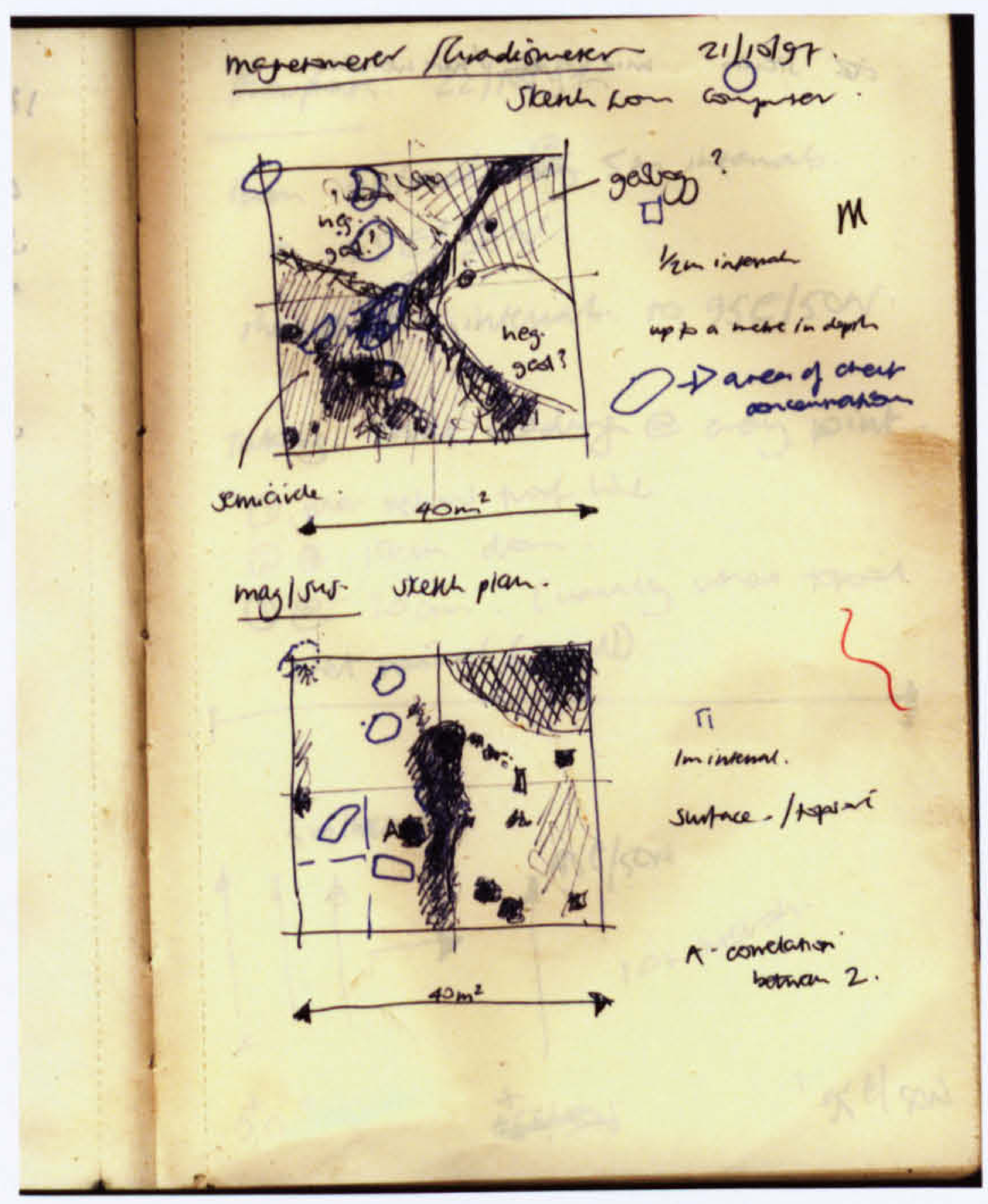
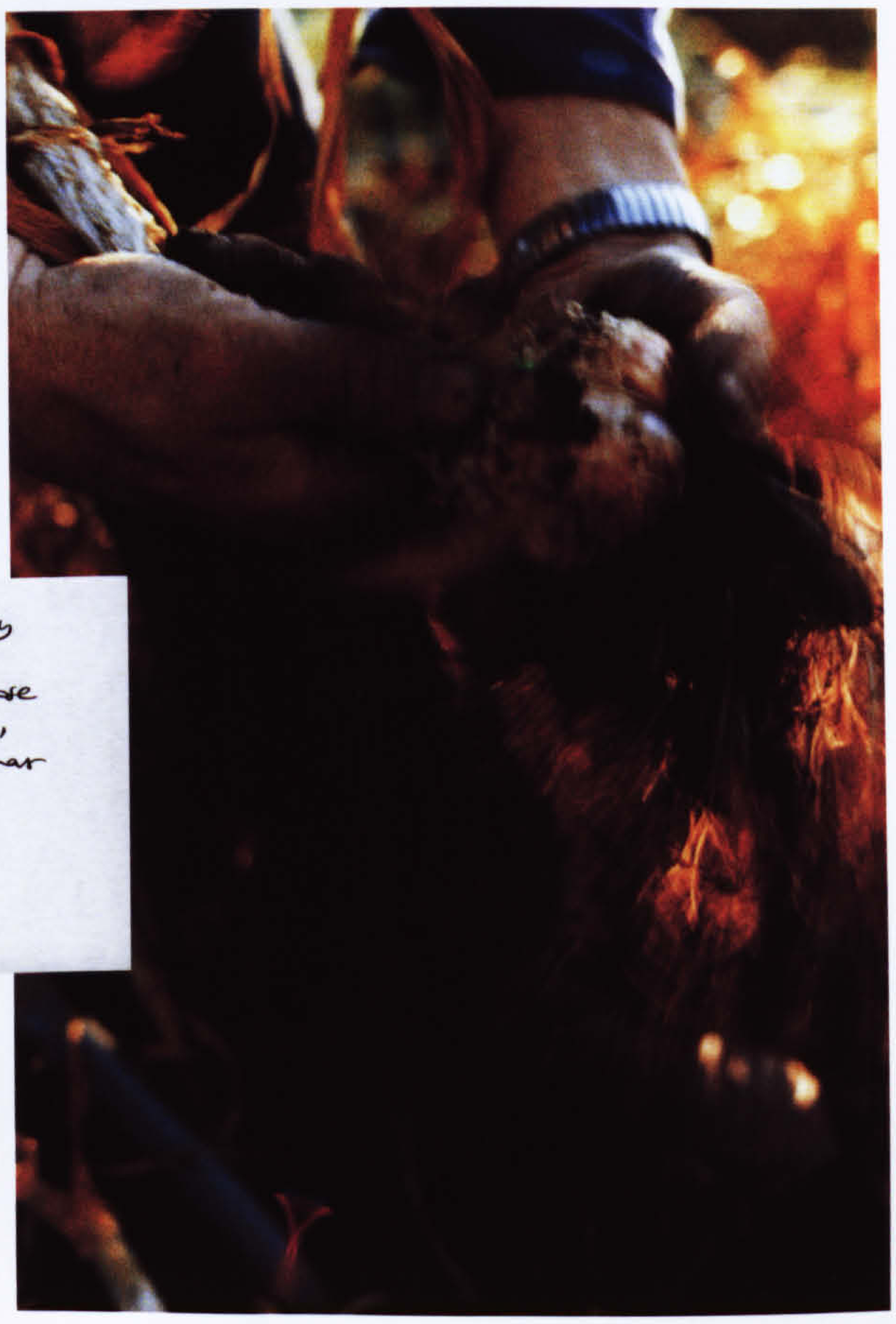


Figure 8.7 Page from notebook showing first results of geophysics

The names of the equipment, Fluxgate Gradiometer, and the appearance of cold, square, white metal moving over the grass seemed to support the apparent exactness of what we were doing. These veils were soon ripped off however, when lines were missed out, the machine failed to register, sheep ate the ropes. The whole process called for a vast amount of interpretation and 'judgment' on the part of all of us. The only reason we failed to conduct a resistivity survey was because someone else was using the machine elsewhere, and we only had a certain amount of time to get it done! But I could never say that in the report, could I?

I wondered about what may have existed in this field thousands of years ago and how everything had changed up to today. Countless numbers of humans must have passed by this spot over time, and each one would have had an individual perception of their surroundings. Here was I, standing in this field coming from a white, protestant, middle class, Edinburgh upbringing, with 'archaeology' and my personal research in mind. Thinking about prehistory, apparently so far removed from the space of the field today. And on the other side of the fence a group of individuals hard at work hoeing between tiny seeds, chatting and laughing amongst themselves - getting on *with it and not even thinking about their relationship to the field; they had a stronger tie with this place through a practical consciousness. They were at one with it for the very reason that they give it no thought. It formed part of their habitus. Perhaps they would be closer to understanding prehistoric harmony.*

Figure 8.8 Garlic bulbs. Reproduced from Don 1999, 214



"In those countries where there can be any immediate question of a deliberate social effort, we find, in the interval between those earlier times and the actual present day, an overlapping and inner meaning of what is ancient and instinctive with what is new and conscious."

Rudolph Steiner 1920, xvi.

Phosphate analysis

A series of soil samples were taken for phosphate analysis, which would hopefully indicate whether there had been any obvious signs of settlement in the field. Samples were taken at 5 m intervals on the same grid, and outwith the grid to the top of the field at 10 m intervals. Samples were taken from three points on a vertical plane:

- below the turf line
- 10 cm below the turf line
- 20 cm below the turf line (usually where the topsoil meets natural)

A more detailed analysis of specific areas of the field was not possible due to lack of time, and after some discussion with Ian Banks, I decided to spend the time I had, doing a general survey over and beyond the extent of the scatter (Banks, pers comm.).

The samples taken from Garvald Burn were tested using the Spot-Test field method described by Hamond (Hamond 1983, 55). This methodology is described in appendix 3.

The results show an interesting pattern (figure 8.9a-c) . Although figures 8.9b & c show generally low readings (blue), with a few higher readings across the scatter distribution, figure 8.9a indicates high phosphates away from the scatter distribution, and lower ones with occasional medium and high spots across the scatter. These readings were taken at about 20 cm below the turf-line, which in most cases fell on the natural layer, where topsoil met sand. Although there is a small chance of these results indicating podzolisation, which is a result of agricultural phosphates leaching from the topsoil and collecting at the top of the natural (Banks pers comm.), it is more likely to represent archaeological activity. Being away from the distribution of lithics, and not covering the whole of the natural, suggests that podzolisation has not occurred. It is possible that midden deposits or remains of human occupation is represented by these results.

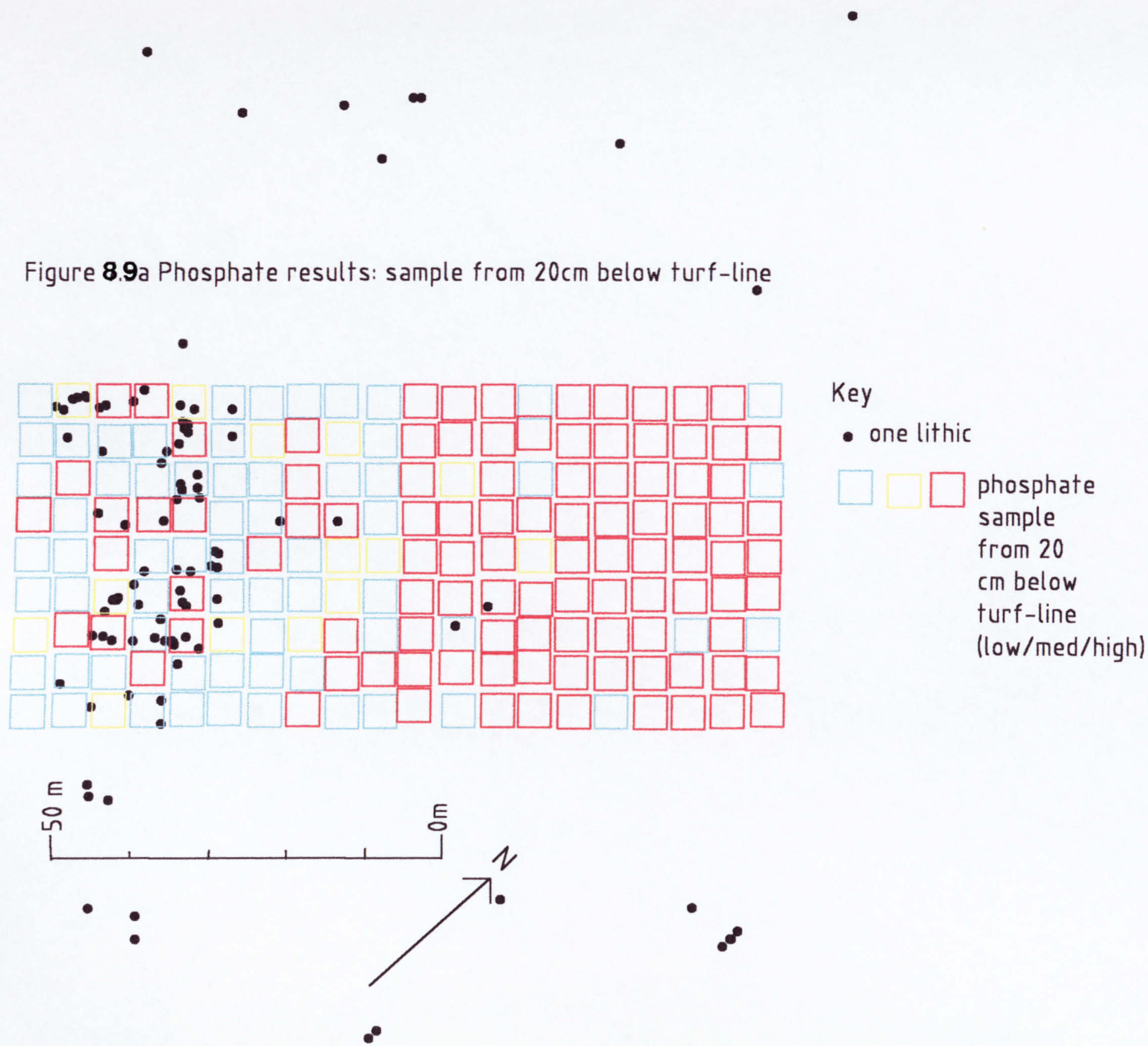


Figure 8.9a Phosphate results: sample from 20cm below turf-line

Figure 8.9b Phosphate results: sample from 10cm below turf-line

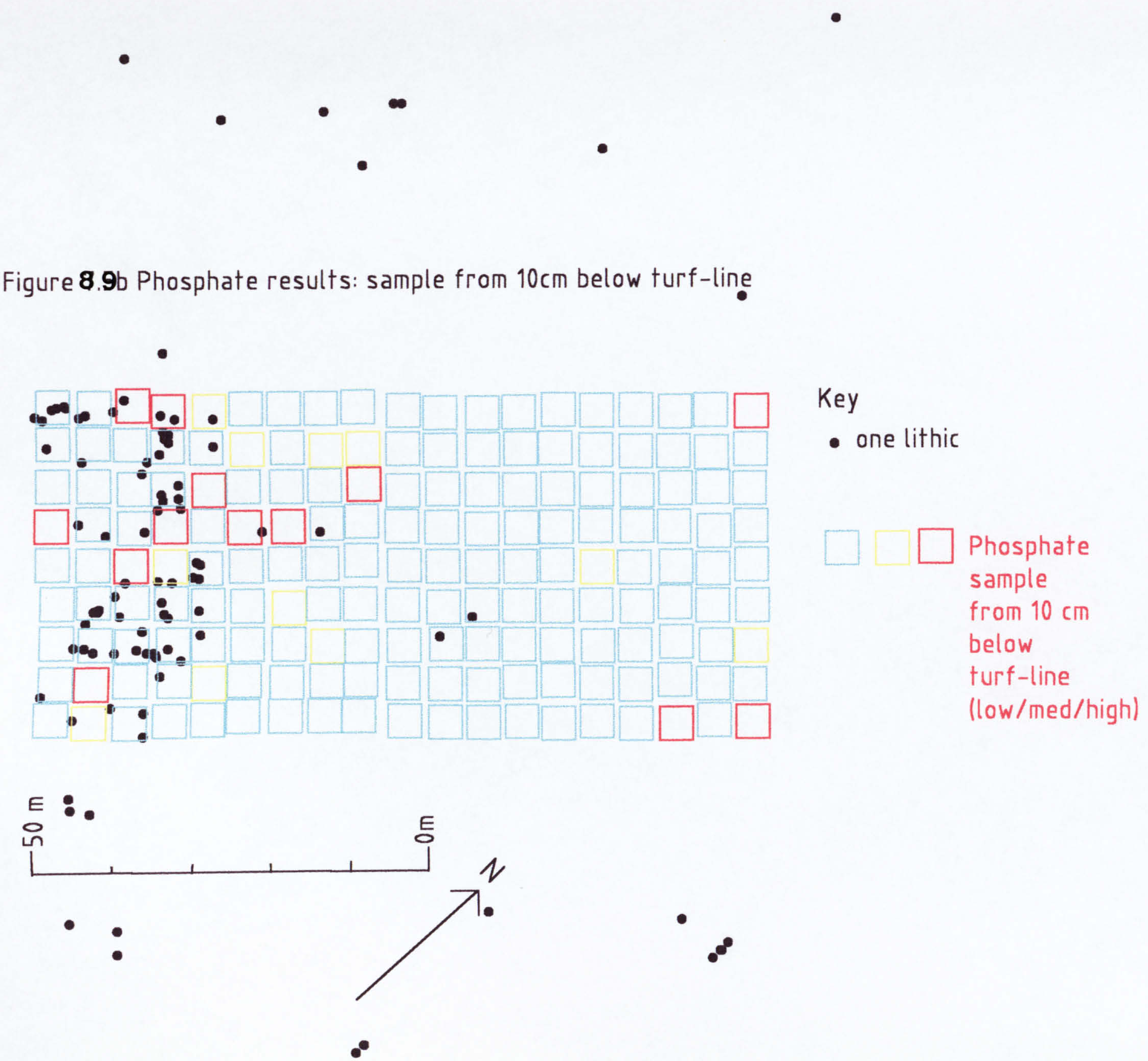
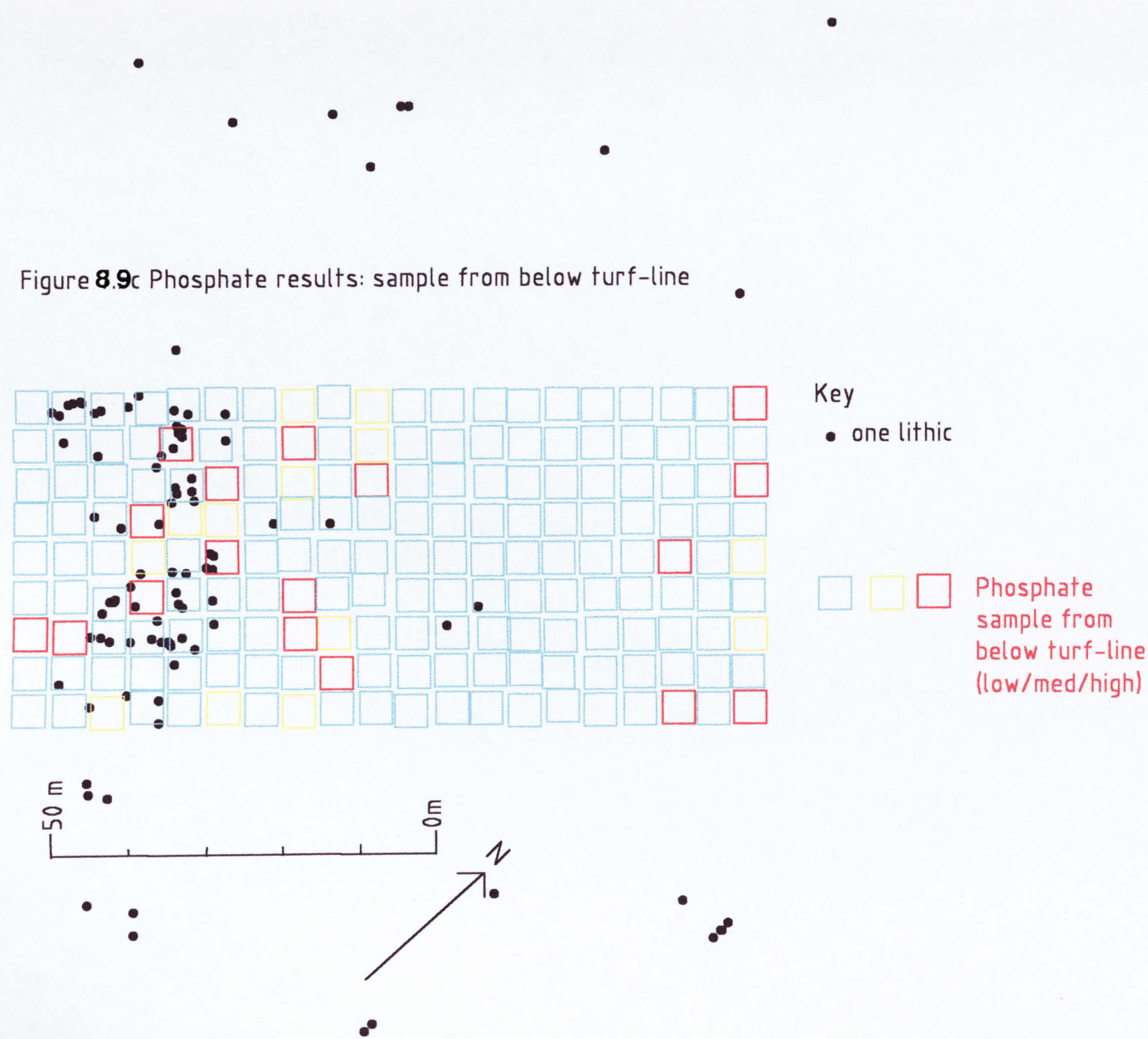


Figure 8.9c Phosphate results: sample from below turf-line



Again, a process which has an air of scientific determinism, but is wholly flawed. We had no idea what we were doing with that auger when we started sampling the soil. I can only hope that the samples we retrieved are all from a relatively equivalent layer. The subsoil was obviously changing in depth constantly, so my results at the end of the day will be a part of this. In no way did I sample soil phosphate levels from exact levels of horizon.

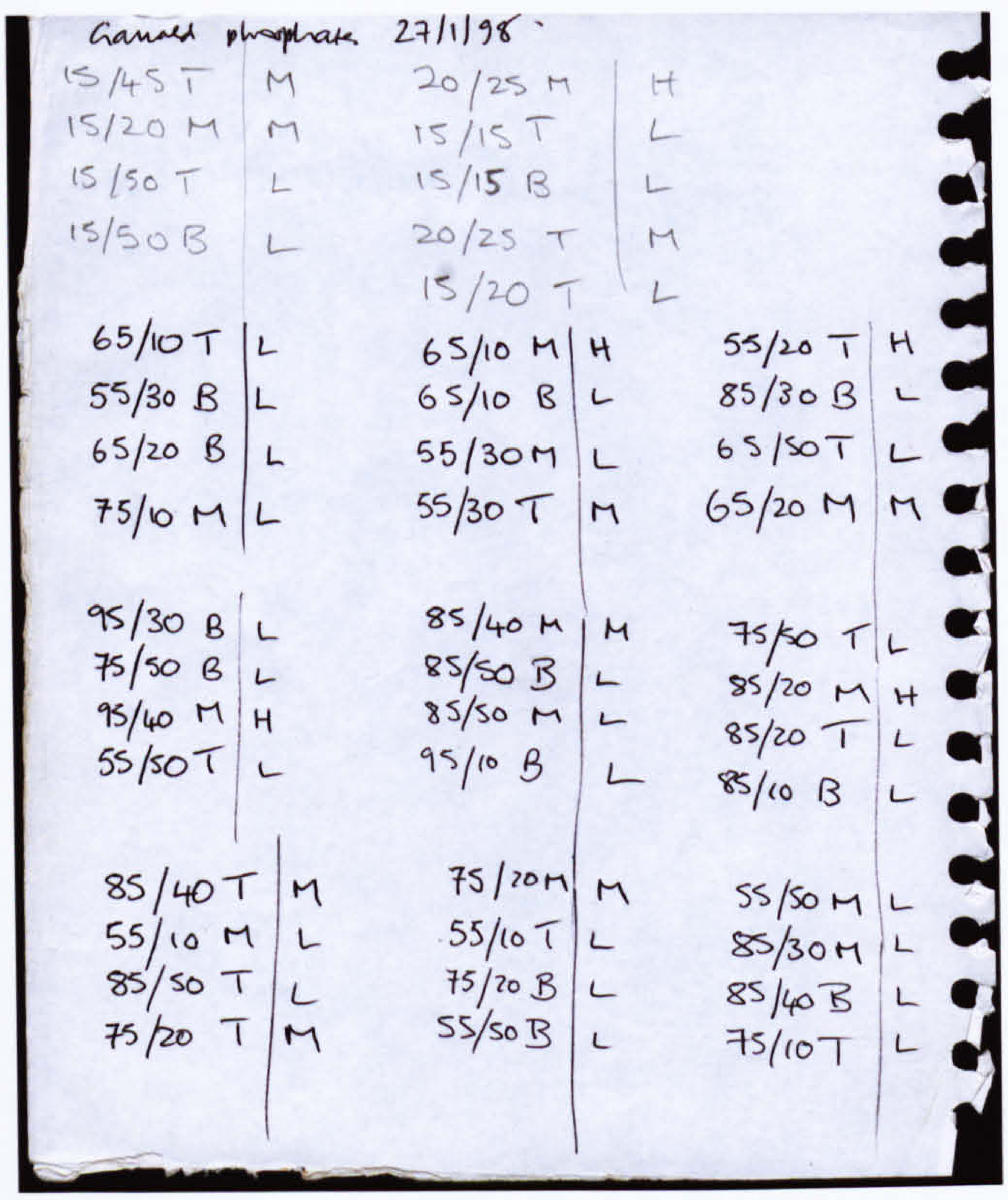


Figure 8.10 Dirty scrawls

The testing of my samples was again a bit of a joke. This method of testing was completely subjective, I just went with my intuition when delivering a judgement on the strengths and timings of colour appearance. A glossing over gives the results a final sculptured sheen however (figure 8.9a-c), rather than the dirty scrawls in my notebook.

Because the results were not analysed until back in the lab, after the test pitting had been completed, the phosphate analysis did not change any running interpretations in the field. Ideally, the tests should be conducted in the field, as a complementary measure to any other non-invasive techniques.

Test-pitting

From the results of fieldwalking and geophysical analysis, it was decided to place the test pits over specific areas rather than in a random fashion. The primary objectives of the test pitting were to:

- relate surface material with material throughout the topsoil
- relate surface material with any sub-surface archaeology which may exist
- relate sub-surface archaeology with the geophysical anomalies

This was done by positioning test pits: firstly over areas of dense lithic concentrations (test pits A, B C & D); over blank areas between and outwith the concentration (E, F & G); and finally over areas with high geophysical anomalies (H, I & K). Consequently test pit J was opened as an extension to test pit A. These positions can be seen in figure 8.11.

The methodology used for the digging of the test pits had to be very strict. Because the surface assemblage contained microliths and suggested the working of narrow blades, there was the chance that a high percentage of very small waste fragments and further microliths would be present throughout the topsoil. It was therefore decided to dry sieve 25% of each 4 m^2 test pit, and bag a smaller sample for wet-sieving, to recover as many pieces as possible. Each quarter of a test pit (1 m^2) was dug separately, in five cases 10 cm vertical spits were removed at a time. A 2 cm spit was then sampled from the sand below the topsoil. No more subsoil was excavated to conform with Historic Scotland guidelines (Gordon Barclay, pers comm.).

A few months had passed since the fieldwalking, and it was late summer when we were ready to dig the test pits. Grass had grown up over the field, and this almost gave the space a different feeling - change had occurred. The scatter, which was now no longer visible because of the grass, revealed its true character: its timelessness had become apparent through its effervescence.

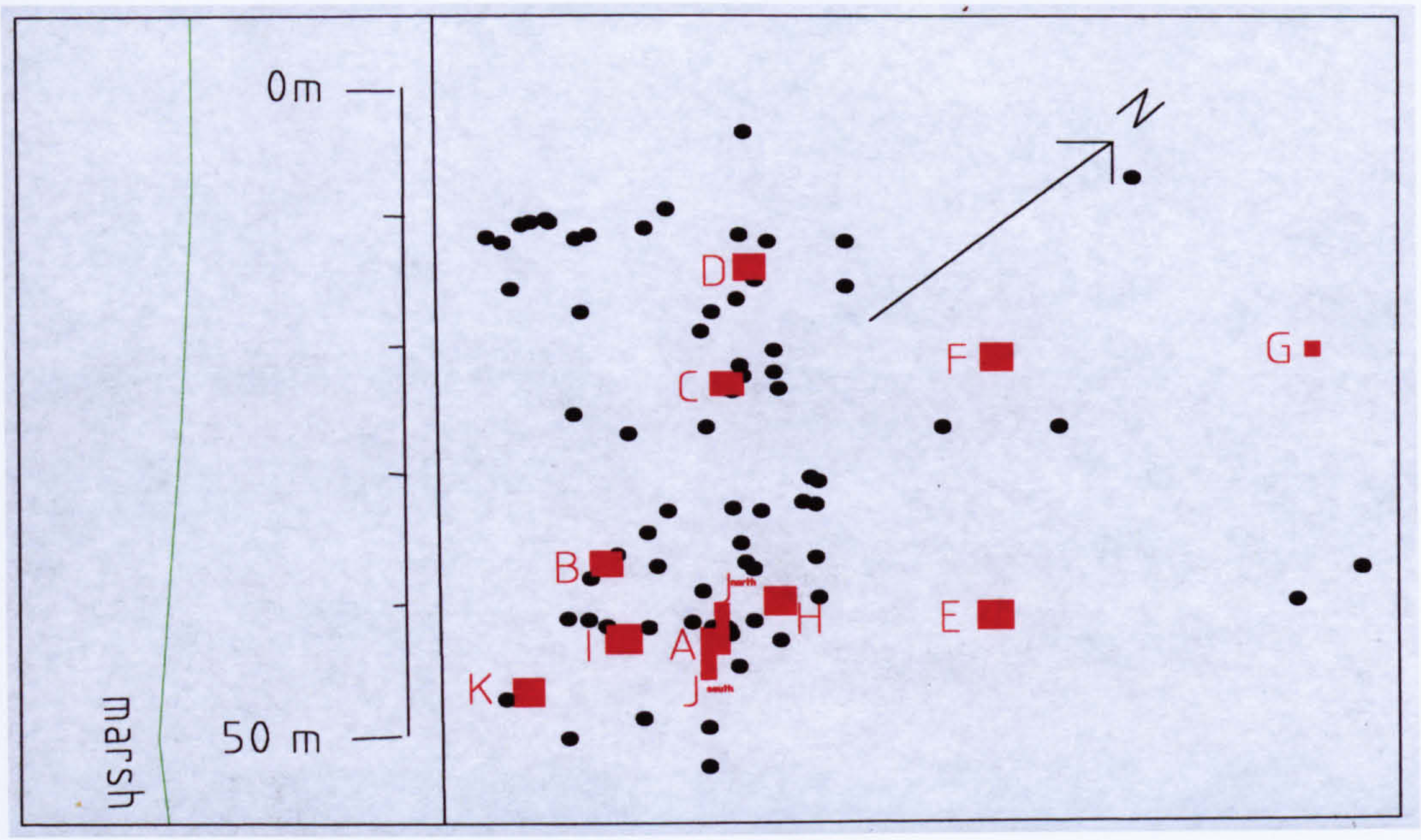


Figure 8.11 Distribution of test-pits over scatter

Change had also occurred over the fence. The previous bare drills of the seed bed were now crowded with dark green leaves. All the workers were out again, but this time they were picking the carrots which had grown to a ripe size, helped along by months of nurturing. They were completely absorbed by their task.

Figure 8.12 Vegetable plot

11 test pits were dug altogether, their descriptions follow. The lithics were analysed as one assemblage (913 pieces), and will be discussed below.

Test pit A

Positioned over one of the densest concentrations (8 surface pieces), this test pit had 660 lithics from within it, the majority of which came from the bottom 10 cm of the vertical, and a considerable amount (225 pieces, 34%) came from the sand (wet sieved samples). A total of 152 pieces came from dry-sieving whilst digging the pit, and 508 pieces came from the wet-sieved samples (which represented only 12.5% of the whole 4 m^2 area). The large inconsistency between numbers of lithics in dry and wet sieved samples reveals the amount of debitage within the pit, which was almost impossible to recover from dry sieving alone (see figure 8.18). A small, rounded sandstone pebble was also recovered from the top 10 cm of this pit. It has two areas of abrasion on one end, suggesting its use as a hammerstone.

Test pit B

Again positioned over a concentration, this time of 5 pieces. Only 13 lithics were recovered overall. No features were seen.

Test pit C

10 pieces were recovered from the topsoil and sand combined. This was placed over a concentration of 3 surface pieces. One sandstone cobble was also found in the top 10 cm, this had plough damage marks on one surface, but also some obvious pitting on at least two faces, suggesting its use as an anvil stone. Again, no features were uncovered.

Test pit D

This was the most northerly test pit, and 28 pieces came from it, 13 (46%) of those from dry sieving, 15 (54%) from wet sieving. No features were present.

Figure 8.13 The perfect test-pit

I had started thinking about the apparent 'exactness' of what we were doing: digging square test pits into such an 'unsquare-like' piece of land; how we were perceiving through some apparent scientific act or experiment various differences within and between test pits. Taking each test pit as being 4 m^2 and cutting even baulk sides; removing and sieving 'exactly' a quarter of the pit at a time, 10 cm down at a time. It seemed to go against the whole notion lying behind the social aspects which we were trying so hard to find. I thought about digging the 'perfect' test pit, which measured exactly (to the micrometer) 4 m^2 and had edges and sides resembling a box.

The spoil had to be removed without spilling a crumb, and each layer had to be measured to the exact 10 cm across the surface of the pit. This scientific exactness could in no way exist, although this is what was naively expected, and on which all interpretations are based, in all archaeological fieldwork today.

I looked over the fence and saw a trench being cut to the side of the carrot field, in preparation for laying and storing the crop. It struck me how almost identical actions were being played out with completely different intentions. On one side of the fence the land was *being transformed with the intention of revealing academic results in an almost sterile and apparently 'scientific' manner, misconstrued by myself as being 'close to nature' and 'at one with the past'. Where the grass seemed greener, a very different theme was at work: while the land was still being transformed it was with a different purpose, grounded in a separate belief system - one which went far beyond trying to interpret prehistoric past events. These events existed in the present - prehistory seemed irrelevant.*

Of course, our methodologies changed. As no lithics were recovered in the first few cm of topsoil, less time was spent on looking for them in the rest of the trench, perpetuating biases in the record. It was hoped bagged samples would act as an intermediary, cutting through any such bias. We had to backfill as we went along, so the sheep that kept us company wouldn't break any legs at night. I had this image of all these stumbling sheep in my mind as I back-filled. It was a nuisance actually, because in a lot of cases, we had to rush the last part of the digging, which must have led to lost finds, again increasing bias.

Test pit E, F & G

Test pits E, F & G were positioned between approximately 15 and 35 m to the east, away from the concentration and the edge of the marshy area. Only one lithic was uncovered, from the sand layer in test pit G. The sand layer here was cleaner and less mottled than in the other areas. A clay drain was uncovered running east-west across test pit F - the cut was excavated to a depth of approximately 0.5 m only to reveal a clay capping to the field drain. No other features were identified.

Test pit H

This pit was positioned 4 m to the east and 3 m to the north of test pit A (figure 8.11) to try and uncover the cause of a geophysical anomaly (figure 8.5 & 8.6) which suggested the presence of burning, as well as the presence of a large number of lithics combined with charcoal flecks from test pit A. It was hoped that there may be a hearth connected to these occurrences.

Surprisingly, only 17 lithics were recovered (all from dry sieving); the majority of which (14) came from the bottom 10 cm and sand. Two plough furrows were uncovered running east-west across the extent of the pit. A possible post-hole was also recorded (20 x 15 cm) and this was half sectioned revealing a round bottomed cut 10 cm deep. This may have been the tail end of a burrow. No charcoal was uncovered.

Test pits I & K

Test pits I & K were also positioned to try and locate geophysical anomalies. A possible semicircular feature made up of 6-8 individual circular anomalies (see geophysics above) lay to the edge of the survey grid. No further geophysical survey work was done outwith the 40 m^2 grid, so further investigation and possible clarification of this feature was not possible, using passive methods.

Excavation revealed a possible feature in test pit I. Along with plough furrows (20 cm wide, approximately 5 cm deep) cut into the mottled sand, a black and white round feature was identified disappearing into the north-west corner of the pit, and the baulk edges were consequently extended to reveal the whole feature. This deposit appeared to be a mixture of possibly burnt white sand, or ash, with charcoal flecks throughout, creating a 'fruit-pudding' black and white appearance. It measured 20 x 20 cm and was 5 cm deep. It had been truncated and cut by the plough on the south side, and this damaged edge revealed a round bottomed feature in section.

This may have a direct relationship to the geophysical anomaly and represent a single component of the set of features, so to clarify any possible connection a further test pit was dug, in the hope of locating a second similar feature. 17 lithics were recovered from test pit I.

Test pit K was dug further to the southwest. Unfortunately no features were uncovered, although there were shallow plough marks and the occasional burrow. One flake of chert, and a large water-rolled quartz pebble were found in the northeast quadrant. This test pit was the most westerly to be opened, and therefore closest to the marsh edge. It was interesting to note that the sand deposit had a more gravely matrix with occasional rounded pebbles within it. This may indicate the edge of a past fluvioglacial deposit (Hamar pers comm).

In the other field, the carrots were being collected and stacked up in rows ready for clamping in the trench. Everyone was helping out: the concept of co-operation on which the community was based seemed so alien within today's economic framework; a community based on co-operation and not on competition, the antithesis to the western capitalist ethos which Steiner referred to as a 'cancer in our society' (Lissua 1987, 134). In a way our fieldwork was also a direct result of communal effort, between the people digging the pits and talking about what we were doing.

Rudolf Steiner believed in society running on co-operative rather than competitive terms. Some present day hunter-gatherer societies have also been described as having a 'sharing' social cohesion (Bird-David 1992; Turnbull 1962; Ingold 1996). A type of 'primitive communism' or egalitarianism is present which is subsequently destroyed by Capitalist ideals.

"... yet for all its economic and military power and its near monopoly of the ideological apparatus the capitalist state has not succeeded in eradicating innumerable pockets of communalism, in the Third and Fourth Worlds and some in the very belly of the beast itself."

Figure 8.14 The beast

The warning beeep-beeep-beeep of a lorry reversing in Garvald Quarry across the road filled my ears and distracted me. It reminded me that archaeology was now rooted within an economic system, creating a paradox within itself. Digging for money and profit - being forced to compete for 'recording rights', as rescue units do on sites such as Garvald Quarry, results in a conceptual change in the way that the material remains are recorded and interpreted,"...the artifact is turned into a commodity and in effect removed from history"(Shanks and Tilley 1992, 68).

Test pit J (J^{north} & J^{south})

This pit was split into two 2 x 1 m^2 areas, acting as extensions to test pit A. The reason for this enlarged area was to continue the search for a presumed hearth spot. As mentioned above, the presence of charcoal flecks in test pit A seemed to suggest the location of some burning, the source of which was hopefully in the near vicinity. Test pit H (above) had failed to locate this.

J was divided into a northern part (J^{north}) and a southern part (J^{south}): the former explored the ground between A & H, which would hopefully uncover a burnt area; the latter extended beyond the main concentration of lithics, and would hopefully identify an edge to this.

J^{north} had 53 lithics from within it, 96% of which were recovered from dry sieving, the rest from wet sieving. The majority of these (42; 79%) came from the topsoil, with 7 (13%) in the sand layer and 2 (4%) from the surface. The most revealing thing about this test pit was the archaeological features (figure 8.15).

The natural layer was again a mottled brown, yellow and white sand surface, with 4 plough furrows visible running east-west across the trench. The main feature was a burnt patch to the northeast corner of the pit, consisting of charcoal and burnt sand. This had unfortunately been damaged by the plough. The burnt area was 30 x 0.2 cm in plan, and approximately 0.12 cm deep (figure 8.16). No large or obvious pieces of carbonised burnt material were present, any other burning showed as a black smear of presumably decomposed burnt material. This may suggest that the feature has been damaged by ploughing, and charcoal may have broken down through continual erosion or weathering.

An obvious cut could be identified on sectioning the feature, this had a rounded profile. A few lumps of degraded sandstone lay around the feature, it was impossible to discern whether these were actually hearth placements or natural. No other pieces were found in the surrounding area. A further smear of burnt material was present at A (figure 8.15), with ephemeral patches of silty sand at C, H, F & G. These were interpreted as naturally occurring through animal burrowing.

No lithics were found from within the main burnt area, but there were 7 pieces in situ between the plough furrows on the sand layer. It is interesting that the majority of the lithics were uncovered from dry, rather than wet sieving, the contrary to what was found in test pit A a few cm away. This may indicate that the actual knapping of material took place around test pit A, with upcast from the plough moving larger material into the topsoil of J^{north}.

Test pit J^{south} was less revealing, and had a large number of burrows within it. 47 lithics came from here, most from the northern half, which suggests that the concentration was indeed within test pit A. It was surprising to see such a large difference in the number of lithics recovered from such a short distance away. Presumably the plough had not moved lithics far from their original contexts, as in situ lithics were directly related to topsoil material. A bevel ended pebble with slight abrasion on both ends was also recovered from this test pit. This may have been used as a hammer stone.

Summary

The topsoil was roughly 20 cm deep below the turf line for all the test pits, and came straight down onto yellow sand. In summary, all the test pits closest to the marshy area at the bottom of the field had some chert within them. The three pits dug away from the concentrations of chert further away from the marsh were almost completely sterile, only one chert piece coming from G.

The largest number of pieces came from test pit A, which was actually under the highest concentration of chert from the surface material. 660 lithics made up of cores, flakes, blades, microliths and debitage, came from this pit, all were spread throughout the topsoil, with a heavy concentration from the sand which was approximately 20 cm down. Chert waste, blades and flakes were found in situ on the surface of the sand and within plough -marks which had cut the sand by about 5 cm. The geophysical survey suggested that there may have been burning to the northeast. The northern extension revealed a burnt area and this may well represent a simple hearth, with little waste debris or other lithics at this spot, but a concentration in the immediate area. The southerly extension located an edge to this knapping floor.

Plough marks came up from almost all the test pits. These may have been created by a deep plough, being 30 cm below the turf. They were cut relatively deep into the sand where the topsoil was shallower (20 cm), and less noticeable where the topsoil was deeper (up to 30 cm) John Brett, the farmer, told me that they had sub-soil ploughed (or deep-ploughed) the field only once, in 1987, and the plough-marks which were seen probably result from this deep-ploughing. Due to the presence of in situ lithics within the sand layer, and the spread of lithics on a vertical plane with higher numbers appearing in the topsoil, it seems likely that this deep ploughing may have been the initial cause of the scatter. Subsequent shallow ploughing will have churned material around in the top 15-20 cm, missing the bottom layers, and spreading material across a wider area. Waste was still in situ in test pit A, little having been moved by the disturbance.

The carrot trench was full, and layers of straw and soil were being heaped over the top to create a frost and damp free environment for storage. The remaining stocks were being loaded on to a trailer to be pulled by a tractor back to the barn. This part of their work was almost over, and some people crossed the fence to see what we had found. They had no idea that these bits of stone were so old and were the results of someone's work and *creativity in prehistory. It was difficult for me to imagine someone (or a group of people) sitting and knapping away next to a fire at this spot thousands of years ago. It filled me with a strange sense of awe, to think that the space we were standing in held so many memories. That field, that soil, now held a specific meaning for me, through the experience of working in it, and from finding elements of a past culture still remaining within it.*

One girl told me that she had picked up some flints from the field next to the one we were in. She was quite nonchalant about it, saying that they were all over the place. She wasn't aware of the exact age of these things, and had never actually questioned them or tried to find out anything more about them. She knew they were very old and had probably been dropped by someone in the distant past, while walking across this land. The depth of the temporal landscape was apparent in her voice.

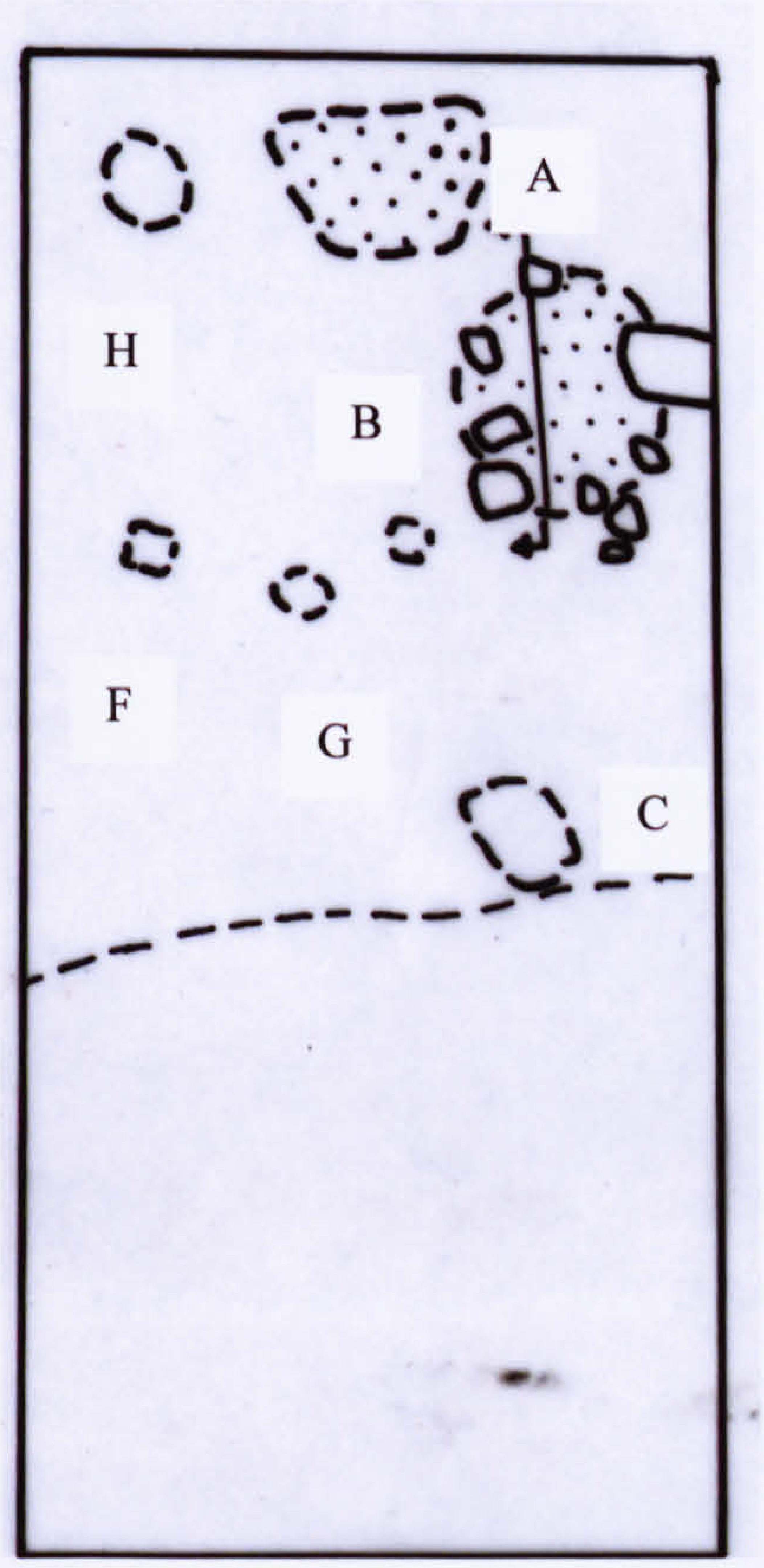


Figure 8.15 Plan of test-pit J^{north} (2 x 1 m)

Figure 8.16 Plate of test-pit J^{north} (2 x 1 m)

Recovery techniques

There was a large difference between the number of finds from dry sieved samples and wet sieved samples. Table x below gives the various figures from each test pit. It must be noted that the figures given for the wet sieved samples vary according to the number of bags of soil sampled. An average figure is given for one bag of wet sieved soil. One bag is a fraction of the amount of soil dry sieved, so the figures are slightly misleading.

Figure 8.17 Contents of soil samples

Test pit	***Dry sieved% of trench***	***Wet sieved***	***No. of bags***	***Av. no./ bag***
A	152	492	16	30.75
B	13	0	4	0
C	10	0	4	0
D	13	15	4	3.75
E	0	not sampled	0	0
F	0	not sampled	0	0
G	1	not sampled	0	0
H	17	0	10	0
I	12	7	4	1.7
J^{north}	68	2	4	0.5
J^{south}	25	11	4	2.75
K	1	not sampled	0	0

Despite any misleading ratios between sizes of soil samples tested, the figures still suggest that wet sieving was worthwhile for test pits A and D, as more lithics were recovered through this sampling technique - even from a much smaller sample size. This does not hold for all the test pits however, and dry sieving seems to have been adequate, although it is not known whether more lithics may have been recovered from E, F, G and K as no wet sieved samples were taken from these pits.

A size bias would also have been created had no wet sieving samples been taken, as only larger pieces were captured during dry sieving. The disturbing unevenness in the number of lithics recovered from test pit A through wet sieving rather than dry is a reflection of the number of small pieces which were concentrated in this area, and which probably fell through the larger dry sieve mesh.

The figures, when printed, suddenly took on an air of authority. In this format, they 'covered the traces' of the methodological erraticism which was the reality of the situation (Bender et al 1997, 150). The reason test pits E, F and G had not had samples taken from them for wet sieving was because of a lack of sample bags and an inability to cope with the work load at the specific time (test pit needed back-filling). These mistakes, shortcuts and twists of fate are immediately eradicated when typed out in a finalised form, with the author deliberately obscuring obvious errors.

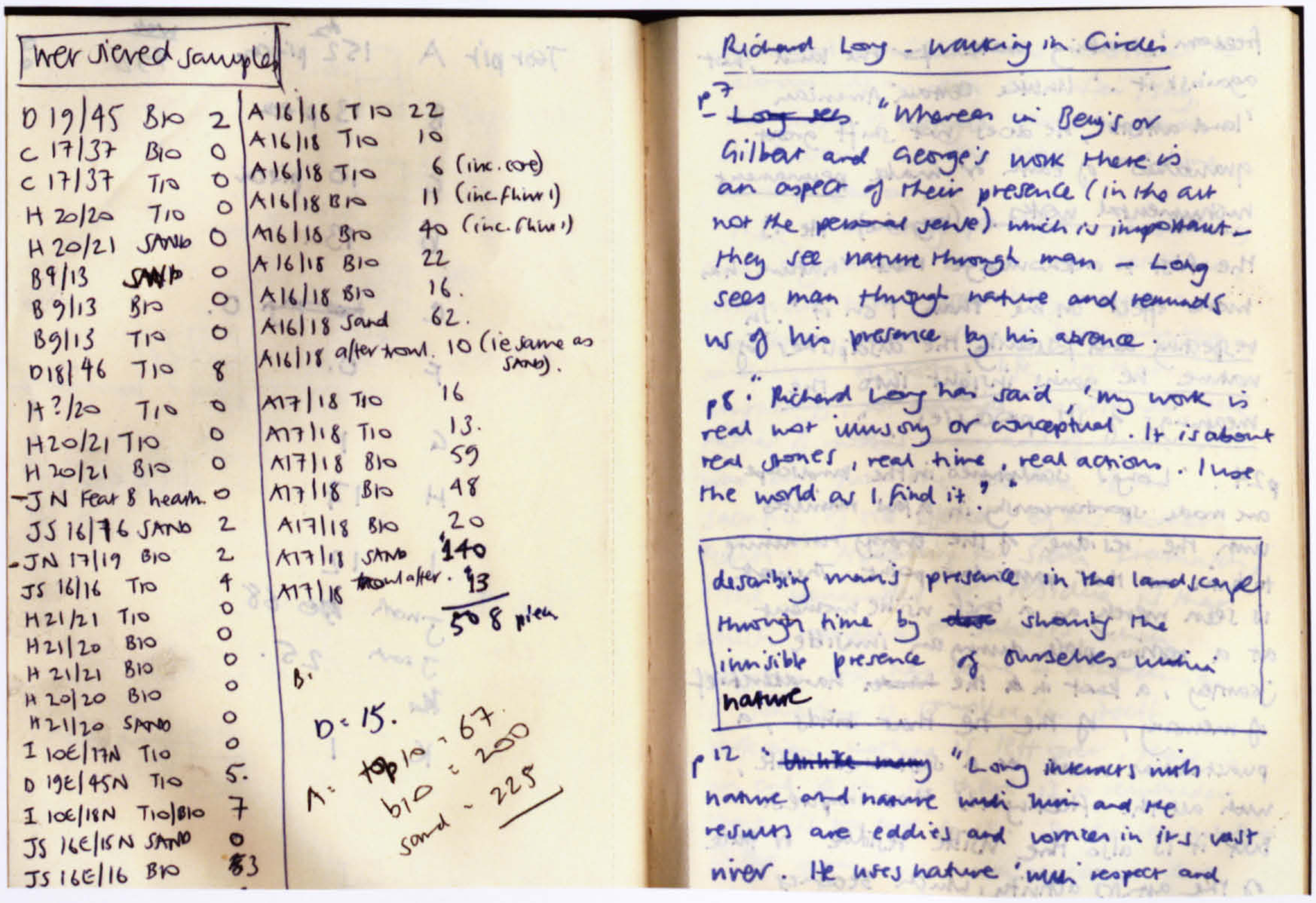


Figure 8.18 Field note-book entries

Sixteen bags were filled in test pit A as it was approached with enthusiasm. The numbers dwindled in subsequent pits, as it was too time consuming to fill this many bags, and not enough were available. Strategies and methodologies changed as the process moved on, reflexive fieldworking at its best! The hegemony which I fixed through the data seemed to derive from competition fuelled by the nature of the academic discourse. I needed to be more open and honest, unhindered and able to sweep any criticism aside.

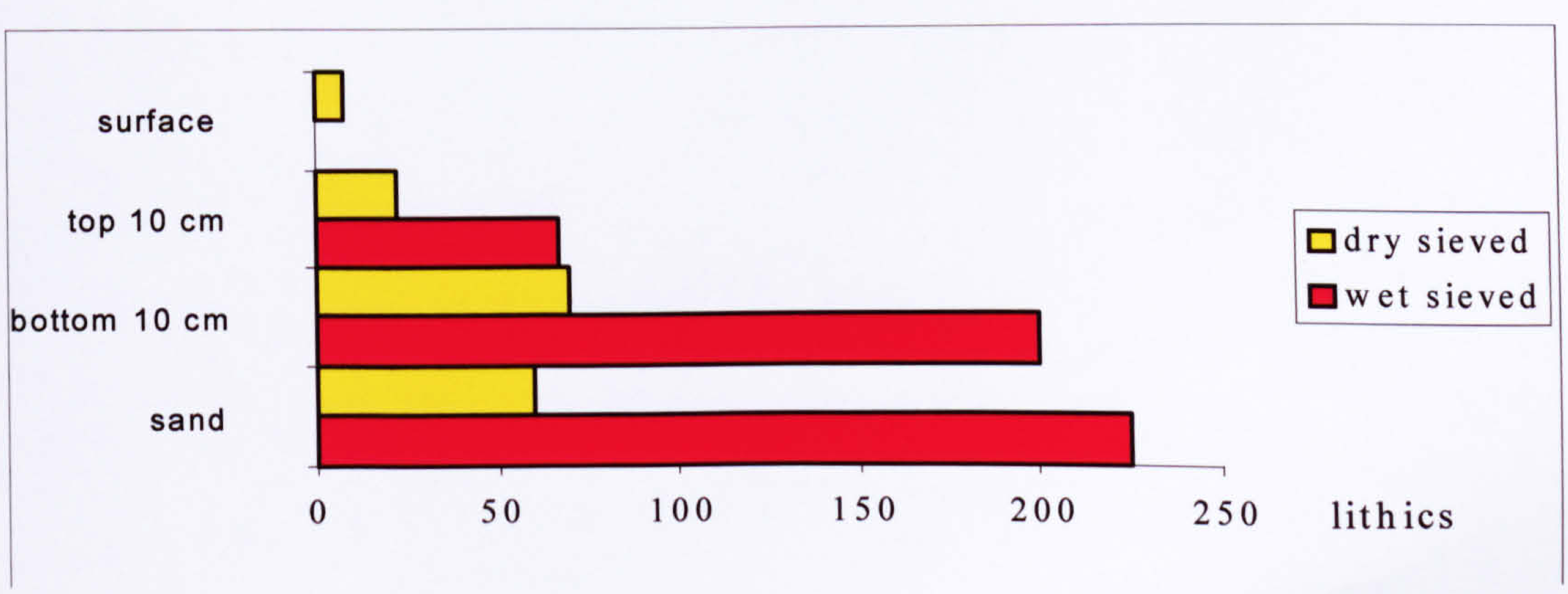
Hegemony seemed to be free from the activities which had carried on over the fence. I thought of the calm nature which seemed to run through these peoples, a lack of competitive aggression, instead an honest, co-operative attitude, able to discuss problems in an understanding way.

Vertical distributions

The vertical distribution of finds may be indicative of the ploughing history of the field. Figure 8.19 shows the distribution of finds for test pit A, which had the majority of finds and has been taken as representative of the whole.

Figure 8.19 Distribution of finds in test pit A

Test pit A



It can be seen by these results that the majority of finds were recovered from the bottom 10 cm and sand layers, with more coming from the sand in the wet sieved samples, and from the bottom 10 cm in the dry samples. This is due to the fact that there were a large number of smaller lithics and debitage from the sand layer, which were missed during dry sieving. The percentage of finds on the surface compared to the number from the test pit is 1.2%.

It is clear that more lithics came from the bottom part of the topsoil and many were in situ or on the sand layer. Whether this refers to the limited damage to the in situ lithics by the plough is hard to discern, certainly plough furrows were recorded and so the soil must have been turned from this deeper level at some point in the past. It is possible that deep ploughing in 1987 had created the scatter, and subsequent normal ploughings have mixed the material throughout the top 10-20 cm of soil, while the majority of it has been left at the bottom layers. A more intensively recorded excavation of a larger area would no doubt reveal more substantial patterns, and this is planned for the summer of 2000.

Horizontal displacement

The horizontal displacement of lithics can be seen as fairly widespread (figure 8.3). Looking at the total coverage of scatter material, it is likely that there are several separate concentrations of lithics. It was fortunate that test pit A hit an area where many in situ deposits remained, and the high levels of debitage and waste in situ seemed to suggest that the contextual material has only been affected by deep ploughing, with minimal horizontal displacement of lithics within the topsoil. It is possible that the other concentrations across the field, which extend for roughly 160 m parallel with the marshy area, represent similar spots. Unfortunately test pitting failed to uncover any comparative features. This may be due to some horizontal displacement of surface material, although as seen in test pit A, the density of material was tight and there was an edge found to the scatter. If the test pits were positioned by a difference of 1 m, then features may well have been uncovered.

Boismier's system of scatter types seems to fail in this instance as although the tillage history of the field would suggest an intermediate scatter being created i.e.

> Circular or subcircular shape; moderate to low surface density with more graduated density gradients; fuzzy boundaries; partial association with topographic features and increased orientation in slope direction.
>
> Boismier 1997, 242

It is possible that the scatter does not represent this. It may consist of a number of isolated units which have subsequently moved slightly with some merging, and therefore take on the form of an intermediate scatter. Intermediate scatters are obviously hard to discern from surface material alone, as it is difficult to distinguish subsurface patterning with tillage displacement. At both extremes of scatter types, it is more obvious: a tight cluster of artefacts presumably indicate not having been ploughed much - initial state; a dispersed and well mixed assemblage no doubt indicates a terminal state scatter. It is very difficult to discern the many various states running between these two, as the shape of the scatter changes through time.

Interpreting the material evidence we had uncovered was the hard part. Which angle would I use? How could I create a living human image from the material residues? It was obvious (to me) that there was a human element missing - how could I turn that into something which would be understood by the people standing at the side of the test pit, peering in, trying to decipher the sculptures and patterns in the sand. A moment frozen in time:

> *Long's sculptures in the landscape are made spontaneously in a few minutes with the residue of the energy remaining to him at that particular point. The work is seen merely as a brief visible moment at a resting place during an invisible journey, a knot in the handkerchief of memory, of the tie that binds, a punctuation mark as a sustained note, with all the fleetingness that implies. But it is also the visible residue or trace of the artists activity, which becomes separated from him and continues to resonate as an idea even after, say, the circle of upright stones has been stood down*

and the artist and time have passed on. There is something powerful, fascinating and mysterious about such residues, which are both essentially meagre and represent the measure of time and the condition of mortal life.

Seymour 1991, 24

Figure 8.20 'Clearing a path' by Richard Long. Reproduced from Long 1998.

Richard Long creates sculptures which are both temporary - disappearing in a few seconds as his 'water-marks' do (Long 1991 get better reference for these) - or lasting for a deliberate permanence as his museum pieces. The themes he uses are very temporal: they all usually have an aspect of temporality and an invisible presence of the human. He manipulates natural elements into his own form, moves rocks into a circle or kicks them into a line. The viewer does not experience him doing so. He has said that the art for him is the doing. What is left, what is recorded, is seen by the viewer. This element holds the idea of pastness - a past activity has left this form or residue. It is the fact that human practice created these things. His experience is almost more powerful than the finished artform. I realised that my experience and the experiences of everyone in the field, the archaeologists, the farmers, all formed the interpretations of the material residues.

Figure 8.21 Material residues (Barrowman 1998).

The lithics

The lithic assemblage was analysed briefly by Mike Donnelly (GUARD & Archaeology Department, University of Glasgow), and the following comments are the author's interpretations of his analysis and statistics. All the lithics are here considered as one assemblage: many surface pieces may not be connected to the majority which were recovered from the area of test pitting.

Raw materials

Out of the 913 pieces collected from the surface and test pits, most were chert (876 pieces -

95.9%). This is the same type, colour and quality which was found at sites in the surrounding area (Weston, Corse Law, Garvald Quarry), the colour varying from light blue, through blue and blue-green to a dark blue-black. The blue-green variety tended to be the most common, this and darker pieces showed good conchoidal fracture. All colours probably derive from the same parent rock, and it is possible that the blue-green and darker pieces were preferred due to their quality.

There were 26 flint pieces within the collection which presumably came from a source some distance away. Agate (5 pieces), pitchstone (2 pieces) and quartz (4 pieces) were also represented, the presence of pitchstone indicating some contact with Arran. The transportation of the flint and pitchstone into this area is entirely feasible given the ease of access from the west coast, as already mentioned. The two pitchstone pieces were flakes, while the majority (77%) of flint pieces were waste (20 pieces - 77% of flint), with no modified flint.

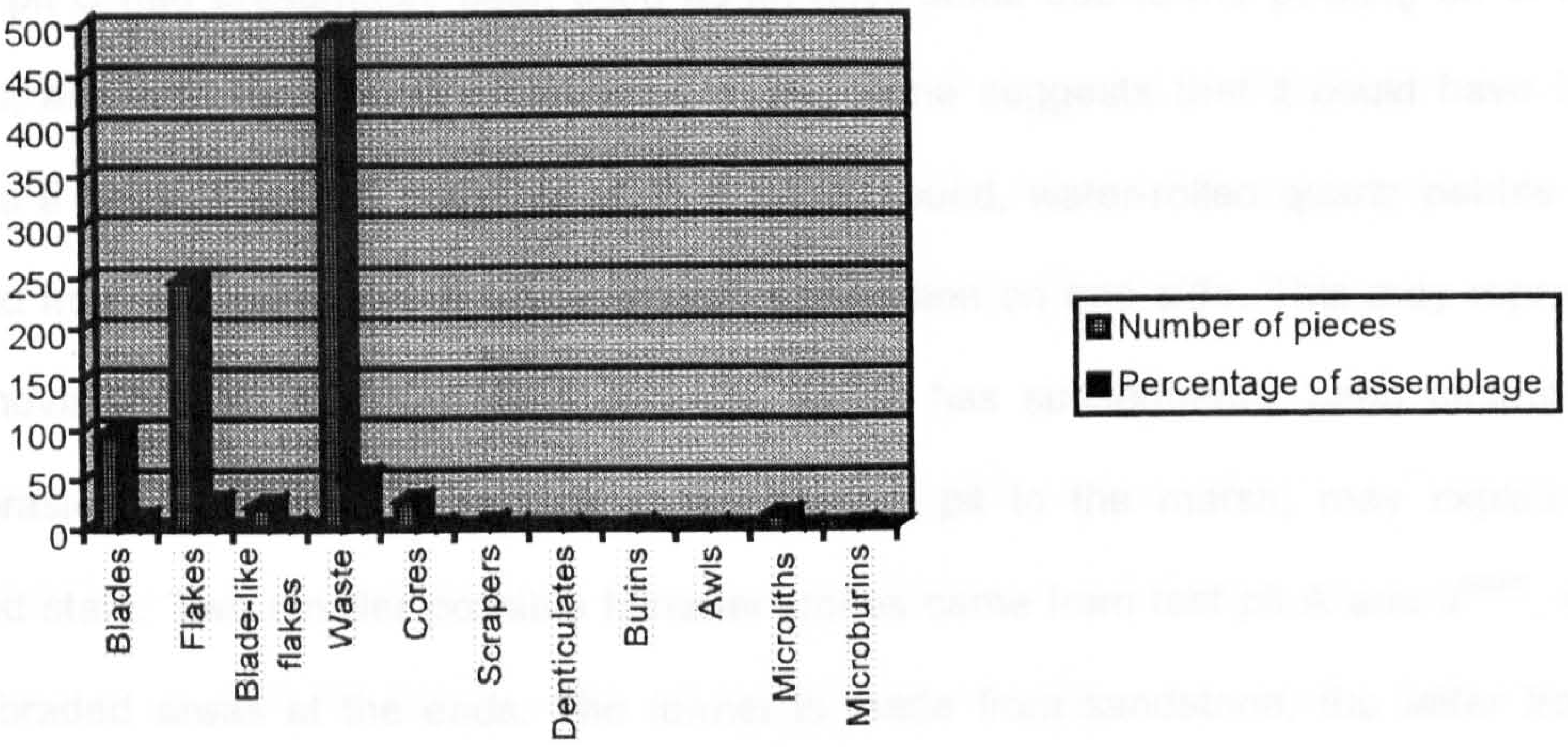
Technological attributes

The table below gives a breakdown of assemblage variability.

Figure 8.22 Assemblage variablity

Component	***Number of pieces***	***Percentage of assemblage***
Blades	96	10.5
Flakes	247	27.1
Blade-like flakes	24	2.6
Waste	492	53.9
Cores	29	3.2
Scrapers	5	0.6
Denticulates	1	0.1
Burins	2	0.2

Awls	1	0.1
Microliths	14	1.5
Microburins	2	0.2
Total	913	100



The relative values from this assemblage tend to suggest that blades were being manufactured: the high ratio of blades to flakes (1:2.6) would suggest this to be the case, with flakes being a by-product of core preparation and blade production strategy. The high percentage of waste flakes (53.9%) indicate that knapping was most probably taking place at this site.

Retouched types are present which indicate the manufacture of tools as well as blades. The presence of microliths, and especially geometric examples such as isosceles and scalene triangles indicate a further link with the production of narrow blades. Comparing the assemblage to others from South and Central Scotland it could be described as representing typical narrow blade technology. Microburins, the snapped ends of notched blades, are typical by-products of microlith production, especially scalene triangles, (McCartan 1990, 99). The presence of all these forms suggests that knapping and production of blades and microliths occurred here. All the above forms were present in test pit A, suggesting together with the in-situ contextual evidence and situation of a hearth, that knapping took place at this spot. There is no apparent spatial patterning within these test pits in relation to diagnostic tool types, flakes, blades or raw material.

Coarse stone tools

Four coarse stone tools were also present from the test pits. One large sandstone cobble from test pit C had presumably been used as an anvil stone due to the pecking on at least two faces, although the overall morphology of the stone suggests that it could have been utilised as a heavy hammer stone as well. A large, round, water-rolled quartz pebble was uncovered from test pit K, which has a smooth depression on one side. This may represent flake removal through hammer stone damage, which has subsequently been cleaned by water abrasion. It situation in test pit K, the closest pit to the marsh, may explain the weathered state. Two smaller possible hammer stones came from test pit A and J^{south}, each having abraded areas at the ends. The former is made from sandstone, the latter from a denser sedimentary rock.

Lithics in context

The closest group of lithics is a few hundred metres to the south at Garvald Quarry, uncovered by GUARD and AOC Ltd consecutively and analysed by Mike Donnelly (Donnelly 1998a; 1998b). These lithics were "closely associated with a number of archaeological features" which " appear to be of a later date and it is possible that this association is fortuitous" (Donnelly 1998b, 23).Chert again dominated this assemblage and it is suggested that it dates to the later Mesolithic. There is a microlithic component but the backed bladelets are large and the other microliths are "crude and unclassifiable" (ibid, 25). It would seem that the assemblage at Garvald Burn is not connected as the assemblages vary quite dramatically. This suggests that they represented separate activity from possibly separate periods within the Mesolithic.

Again the apparent factual nature of the 'assemblage' is given through description of data, tables, percentages, totals - all perpetuate the notion that this assemblage is a whole which in *some way resembles a clean cache of tools. 'Assemblage' is imbued with connotations of a closed set of complete lithics, as complete as a full box of matches, newly bought. Yet there are many more lithics in the field, the assemblage may be far from representative of the entire workings.*

This assemblage must be seen as a fluid set of data, situated within an hermeneutic circle. Open ended interpretations coming from the lithics that we have collected, as part of a process within a continual discourse. A match is struck: the box and its contents are no longer new or complete. Missing elements become more obvious as time passes.

Looking and trying to work out what was going on in the field at that moment in time seemed incredibly difficult due to the fractured nature of the evidence. I had recovered some lithics from a minimal area of the field - a tiny percentage of what was no doubt still there. How could I possibly base arguments and create hypotheses on that? I was entirely in the hands of my subjective reasoning - with elements inside my head which I may not have realised were there, swaying and influencing the cogs at work. But surely the evidence told it's own story? A hearth (a possible *hearth), knapping debris, blades, microliths, cores, hammer stones, an* anvil stone *for goodness sake! What could be more obvious?*

The blank expressions facing me seemed unimpressed - even sceptical. Who was this guy trying to kid? He comes along here, digs up our field, and then tells us that these bits of stone belong to some distant, long gone culture? And then he says he's making it up?

What I had here were the results of my analyses after a long chain of interpretative steps, which were actually far removed from the evidence seen by someone who knew nothing about the various links in that chain. My interpretation was the result of my being trained to think a certain way, through an education system which gave many facts and answers, but didn't necessarily ask many questions (until now).A bricolage of experience excluded the perplexed faces looking at me... "This is my *interpretation" I explained.*

The mud fell away from the spade as I kicked it with my boot. Geese were honking overhead in 'Z's and 'V's. My shadow leaned towards the tired party as they traipsed and slumped behind the carrot-laden trailer, being slowly dragged by the tractor. They had also taken notice of the geese, and must have recognised them. I wondered what other letters they read what feelings they had deep inside their heads and hearts, triggered by the knowledge that time had come round full circle with the arrival of subtle changes. And here was I, looking at my watch and checking whether I had enough time to beat the rush hour traffic hurtling to a standstill along the M8, which seemed to be the epitome of modern Western thought. Once again I was thinking on a different wave-length to the diminishing figures.

> *Just a year ago, he had been here in the spring. An afternoon it was, and, standing not far from this house, he had heard that rusty* honk ! honk ! *and wondered - and then, strung out in an irregular arc, he had seen the geese. At first he had thought they were swinging to the south, and that had vaguely disturbed him, for he had the notion that they should go north to rest. As they continued to swing round, a deep pleasure and reassurance had flooded upon him, and when they assumed their arrow formation and headed a little west of north, he had watched them enthralled. One barb of the arrow was much longer than the other and, going away from him, it undulated slowly like a ribbon drawn through the still air. Where had they come from? And whither bound? Watching, he was invaded by the feeling that he was seeing something which it was hardly right he should see, something out of occult books, out of magic. He should have been better prepared. It was going from him; and he had not got it all. He had missed something. What he had missed, he wondered over.*
>
> *Gunn 1991, 12.*

Conclusion

The process of analysing a scatter in the field has been documented, from initial fieldwalking, through to geophysical analysis, phosphate analysis and test-pitting. The value of all these procedures has been described, but the uncertainty which comes with them has also been communicated. The 'archaeological gaze' whereby procedures are made to fit into specific pretensions and mistakes are glossed over, are set against the more personal expression of the fieldwork.

A comparison is made between the archaeology work and the more humble (as far as the author believes) activities carried out in the same field by a different group. Through these comparisons the flaws within the archaeological process are highlighted, which lead to facts which are taken for granted.

By combining the experiences with the data, we can create alternative interpretations for this site in prehistory. When situated within the wider locale, and the scatter evidence which was described in the previous chapter, these specific activities become situated within wider general spheres of social life, movement and an understanding of place. The following chapter looks at the Southern Pentlands area with this evidence and the experiences gained, allowing possible interpretations of place to be considered.

Chapter nine

A year in the Southern Pentlands

> Without more detailed evidence, there is much that remains unclear, but we can assume that beyond more persistent settlements and in seasonal settings, spreads of tools, waste and burnt stone confirmed that cycles of movement and action were grounded in history. The encounter with stone-working debris in an overgrown clearing helped to define the connotations of that place and may even have influenced where people worked on their return...Perhaps the tools of these scatters sometimes stretched beyond the genealogies of specific communities and into the ancestral past itself.
>
> Edmonds 1999, 39.

Introduction

Chapter 7 described the recorded scatters as they lie in the Scottish Lithic Scatters database. This chapter will consider a variety of interpretations based on these records, placing them within a landscape as it has been experienced from the perspective of myself throughout the duration of my many visits to the area, and more specifically, during fieldwork (including fieldwalking, geophysics and test-pitting) which I have undertaken over the course of my research, and suggested in the previous chapter.

By combining these experiences with information on other archaeological material remains and upstanding monuments, it will be possible to appreciate how the information within the database can act as an important resource from which fuller accounts are created.

The chapter has been laid out using the months of the year as a chronological guide to changing seasons. The interpretations consider a variety of themes incorporating specific areas, monuments and ecological situations. The chronology of events described do not run as a linear progression throughout prehistory, rather events at certain places and times within prehistory which may have occurred throughout the year have been highlighted and described. The lack of dating evidence for this area, and the nature of lithic scatters, offers a view of palimpsests not easily untangled. However, rather than acting contrary to interpretation, this allows us to consider these archaeological traces as remnants of a mass of social events, an assortment of activities merged together in the form of memory and experience.

January

> *Each year, after midwinter blizzards, there comes a night of thaw when the tinkle of dripping water is heard in the land. It brings strange stirrings, not only to creatures abed for the night, but to some who have been asleep for the winter.*
>
> *Leopold 1949, 3.*

Even in the heart of winter, there are days when all is silent and the air is fresh and clear. The crack of ice breaks the silence as footsteps move over familiar ground. Sound travels far on days like this - voices and animals can be heard across the valley.

As I walk up the hill, forehead cutting through my hanging breath, I listen for everything and nothing. Row upon row of Christmas trees, planted a year or two ago but still alive, march motionlessly up the hill with me. I look for the terrace while catching my breath. I catch my breath, quite literally, the vapour spinning from my grasp. A crack of branches signals a roe deer, its white rump disappearing amongst the trees. I raise my arm and clenched fist, the invisible arrow flicking past my fingers in imitation of times before.

Continuing up the well-trodden path, I reach the terrace, which I would think unnatural if I had not known otherwise. It wasn't long ago that we dug here, enthusiastically searching for remains of a past long gone. Looking now, I realised our movements were now no more than a memory of this place held in my mind. I thought of others who had also dug at this spot, my imagination merging the student archaeologist with the prehistoric initiate, both bending with spade to cut into the earth at the same place, in the same movement. Both stopping to catch breath, straighten and stretching aching back, rubbing neck. Our excitement at uncovering flint, pitchstone, quernstone, pot was playing out the emotions and feelings experienced through the act of burial thousands of years earlier.

Figure 9.1 Working at Melbourne

I look towards Tinto, to the south west, the sun illuminating it from the left. It glowed dark red. I thought of the symbolism of this great mountain and its colour. My eyes travelled to the right and rested on the back of Black Mount, knowing that Bronze Age cemeteries lay along its back and down its sides. I turned my back to the warmth of the sun, and my shadow leant towards Garvald, just hidden by a hillside. This landscape stretched out before me showed so much. Although I didn't recognise every inch, I saw fields which triggered memories of walking, filled with rain, cold, boredom, laughter. I remembered aching limbs, and lack of enthusiasm, and lucky finds. I felt doubt, concern, joy. I remembered deer tracks crossing my path, while following a weathered furrow, and looking back to see a wobbly set of footprints picked out by the low sun. I heard a skylark filling the air with its shrilling, the rusty honk of geese cutting their way through the sky, the paper aeroplane of an elegant swan. This landscape, and my experience of it, was the closest I would get to someone in prehistory. These memories, and certain intimate knowledge's of place and the memories it held for me, tied in with the experiences held by people throughout time everywhere. The content would not be the same, each memory being uniquely intimate and personal, but the similarity of this landscape and the things which filled it to times gone is so strong, that memories remain the same.

Looking down over a landscape with woodland long mature after glacial sleep, plumes of smoke rising vertically from certain points, each one mapping out an assortment of clearings. The tracks between these can't be made out from here, except the one which skirts the lake, shimmering now in this light, the water as cold as the ice from which it came. These tracks are intimately known. Sometimes they cut through tight trees, and when worn become slowly wider and deeper. Deeper into the physical landscape, and deeper into the mental one too, as memories of each place give them significance.

Figure 9.2 These tracks are intimately known

This landscape, this view will have changed slowly over generations. New clearings will have formed, old ones will have expanded. Paths will have gone out of use, new ones started. Scatters will have tied the people to certain locales, certain times. These places would be built on, rediscovered, or always known. Throughout the changing seasons, the same routines, a quotidian logic would have created the places still experienced today. The woodland would have been cleared. Grassland would be grazed and campsites turned into settlements. As the monuments were built, and older ways forgotten, the lake would slowly turn to marsh, and old camp fires disappear under crops.

I fell into a slow jog as the sun past over Tinto, the shadows increasing in length as I neared Garvald. I was following a narrow track, made by sheep ? or something, when I came upon the scatter locale. I knew it was here because I'd discovered it while fieldwalking before, last year sometime. What month had it been again ? Oh yes, it was during the spring, because there was a summer crop over the fence which was just sprouting, and the workers were hard at work hoeing.

It was amazing finding the scatter, but now the memory of this place was even more significant to me. I thought of the knowledge and significance of this spot in prehistory. After the scatter had been created, or added to by new knapping, how would the person or persons have thought of this place? They would no doubt have been intimately tied to it, returning to a seasonal camp, or weekly location on their rounds of the area. Debris left previously by themselves or others would be recognised and possibly 'read'. Memories shared would be fondly (or irritatingly) pictured. Changes to the clearing would be noticed. Trees and plants would be examined for growth.

The track leading to this place would also be known well. Animal tracks, scents and droppings would be noted, everything unconsciously ticked until some difference was noticed. Scanning the forest floor, or the grass on either side of the track. Backwards and forwards, in imitation of fieldwalking. Each footstep mapping a history of occupation, a physical mastery of place which extended back generations as long as was known. As the relationship we have with this landscape is constructed through the relationship we have with the archaeology we are striving to find, so prehistoric people understood their landscape by living and walking in it also. Even if scatters or places had never been personally experienced, stories would have been told about them, making sense of the landscape, imbuing it in history and folk-lore. Some members of a community may never have visited specific places for various reasons. Perhaps a journey to a certain chert outcrop or source of stone was not allowed until the person 'came of age'. Maybe relationships with neighbouring communities was forbidden while under the guidance of specific elders, or older members of a family group. Landscape itineraries created lives.

February

> *The saying "Candlemas - Candle-less" indicates that the days are noticeably lengthening at this time of the year, and there is less need to work by artificial light...In Britain, at Candlemas, the first snowdrops are already standing like little lamps, their colours of green and shining white heralding the vitality and purity of the emerging life of the earth.*
>
> *Druit et al 1995, 27.*

The snow had lain for over two weeks, fresh footprints soon disappearing under another fall of snow. The stark hole cut a contrasting image with the monotonous white. The tree lay recumbent, its huge foot arching into the sky. The winds had brought it down, along with others around the clearing. Natural lumps of chert lay cracked grey amongst the sand. Lumps of earth lay scattered in the hollow, painting a drab picture on the yellow canvas. This chert was radiolarian, and must have originated in the Southern Uplands, a few km to the south of here. A receding glacier no doubt, depositing its lithic load amongst the sand and gravel. It was fortuitous that this chert be situated where the tree had fallen, although so many were down that it was a matter of time before some raw material was seen. I realised the significance of such a place in the Mesolithic, when clearings such as this and holes in the ground newly opened would offer useful resources, all the more valuable when imbued with symbolism tied to events and place.

The number of lithic scatters situated in the recently ploughed area at Weston hints at a long occupation of this area (figure 9.3). The numerous remains adjacent to the later henge monument to the south, lie along a terrace, and may be indicative of camps and settlements which were returned to for generations, as they appear to be relatively dispersed. Tighter concentrations lie a few hundred metres to the north, as described in the previous chapter and in the relevant maps, and although the large number of finds (over 7,000 artefacts) indicates an area which again was inhabited throughout prehistory, there are specific spots which were unique opportunities are given to interpret activity, as no mixing has occurred with other lithics.

One such location was test-pitted by myself, and subsequently excavated by Tam Ward. This concentration was isolated in a position at the north of the ploughed area, about 60 m from the road, and 120 m from the fence running north-south to the left of the field. It was on the lowest lying area of the field, and the nearest concentration lay about 20 m to the north; again represented by a tight clustering of chert artefacts. A large amount of material (208 pieces) had been collected from this area on the initial walkover by the Lanark and District Archaeological Society, and a week of intermittent rain had revealed more surface material. An area approximately 20 m^2 was systematically walked for a second time to pinpoint the original concentration and the exact definition of the scatter. The limits of this concentration were found to lie well within a 10 m^2 area, and this was gridded out in relation to the larger grid used for the overall survey of the whole area. Each piece was bagged and marked with a pin flag. Eventually an overall pattern emerged, and the flags clearly showed the density and edges of the scatter. 60 pieces were recovered, these were spread in a rough circle over an area approximately 5 m^2. The artefacts were then surveyed to the nearest 10 mm and picked up along with the flags.

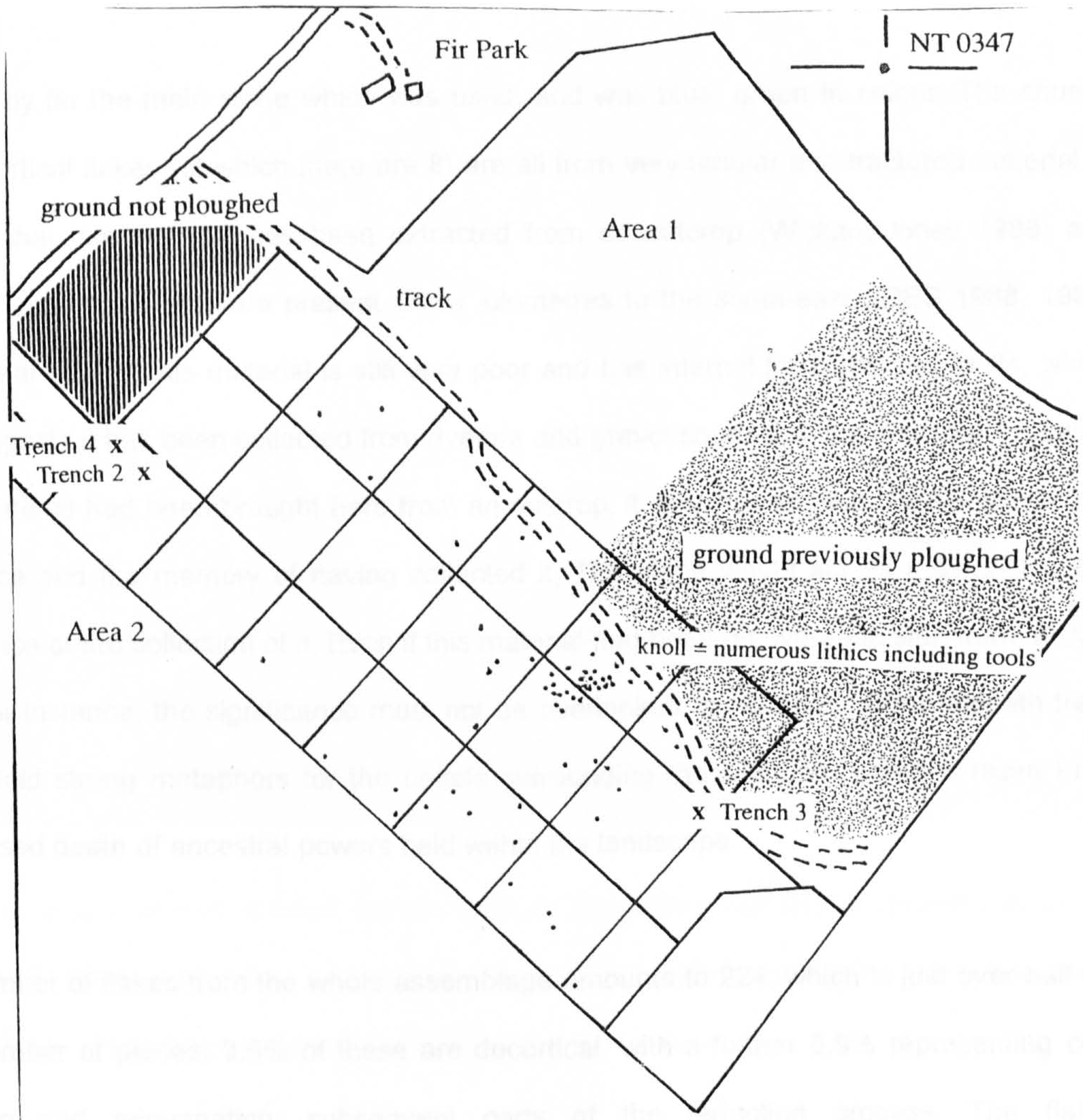
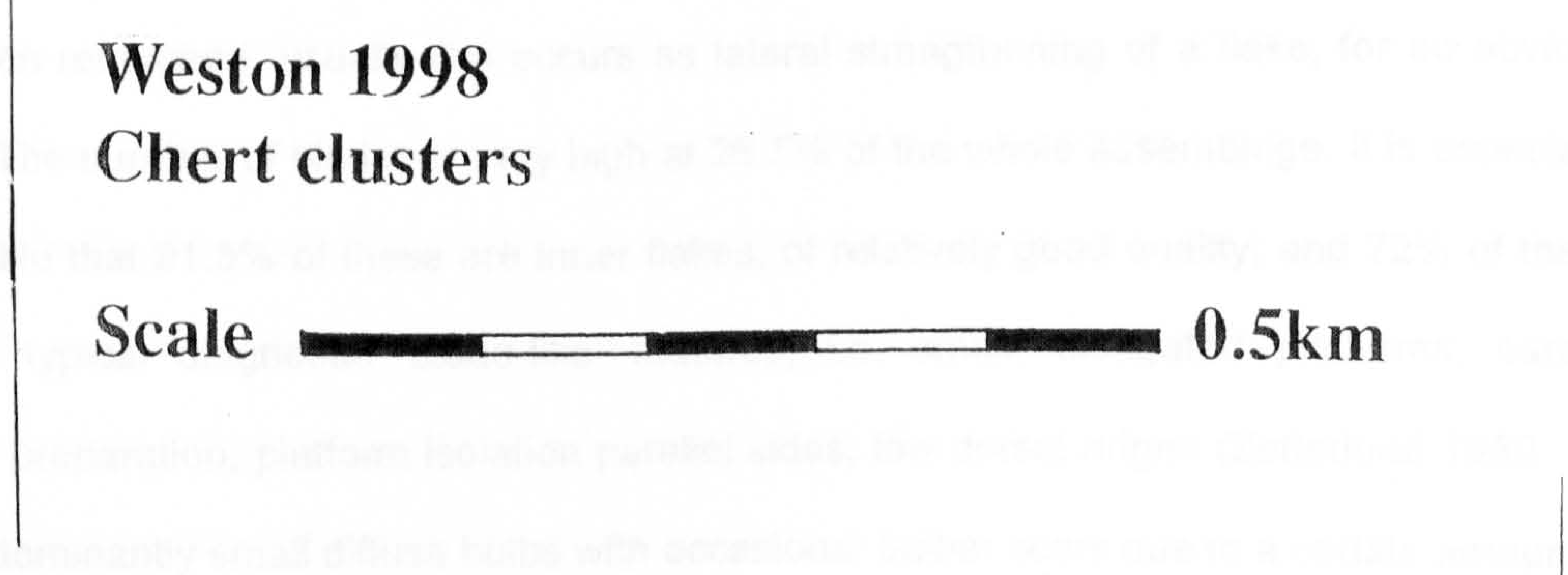


Figure 9.3 Chert clusters at Weston (reproduced from Ward 1998)



Test-pitting recovered more lithics; the area was subsequently excavated by LADAS. The finds from the test-pitting, when analysed, suggested knapping had taken place at the site.

Chert is by far the main stone which was used, and was blue/ green in colour. The chunks and decortical flakes (of which there are 8) are all from very tabular and fractured material. It may be that this material has been extracted from an outcrop (Wickam-Jones 1989) and apparent extraction sites are present a few kilometres to the south-east, (DES 1988, 1989) but a great deal of this material is still very poor and has internal fractures and faults, which also suggests it has been collected from riverine and gravel sources in the immediate locality. If the material had been brought here from an outcrop, it would have held the significance of that place and the memory of having collected it, The stone would act as a symbol to the experience of the collection of it. Even if this material had been recovered in situ, from a tree-throw for instance, the significance must not be overlooked, as offerings from beneath trees would hold strong metaphors for the beliefs surrounding the situation, perhaps fallen trees symbolised death of ancestral powers held within the landscape.

The number of flakes from the whole assemblage amounts to 224, which is just over half the total number of pieces. 3.6% of these are decortical, with a further 8.9% representing core trimming and rejuvenation, subsequent parts of the reduction process. The flaked components again suggest that cores were being prepared for blade production. 15 flakes have been retouched, usually this occurs as lateral strengthening of a flake, for no obvious reason. The number of blades is very high at 26.5% of the whole assemblage. It is especially remarkable that 91.5% of these are inner flakes, of relatively good quality, and 72% of these showing typical diagnostic 'blade-like' features, i.e. small, elongated platforms, careful platform preparation, platform isolation parallel sides, low dorsal ridges (Zetterlund 1950, 73) and predominantly small diffuse bulbs with occasional bulbar scars due to a certain amount of determination by the knapper using a hammer and punch. A prepared platform and face are necessary to create a parallel sided blade. This gives us an insight into the knowledgeability of the knapper, who must have been confident at handling this stone, knowing where to strike to create certain shapes, learnt over long periods of time from routine knapping of a variety of stone.

Although looking at such a small sample from an obviously much larger assemblage, blades were being made, with flakes constituting the debris from this process. Some of these have been utilised and others modified by retouch (figure 9.4 above).

Local chert material was utilised, with a small amount of flint coming into the area from elsewhere. All reduction is represented in some form. Heavily fractured cores, large rejuvenation platform and facial flakes, and core trimming pieces are represented. There are many blade blanks, and further reduced, microlithic forms. Diagnostic tools are present, point, scrapers, borers. There is a lack of smaller debitage, but as mentioned above, this may be due to collection bias. It seems that knapping took place here, and testing of chunks was undertaken, as well as the creation of blades through a process of reducing good chunks.

The subsequent excavations by LADAS recovered over 2000 lithics. Ward states "The in situ material lay in an interface between the old ground surface and the underlying sand *and probably in a slight hollow,* although, since the trench was not levelled, this latter comment is unconfirmed." It may be possible that some form of scooped hollow or possibly a tree-throw existed here. The lithics had not been moved far by the plough.

Tree-throws will no doubt have been checked routinely during walks through the landscape, as people went about their usual routines. The chance finds of large tabular chert would possibly intice them to stay, and even to set up camp in an area, gathering more people from a nearby camp. If a group of men are away for a few days at a time, they may take the opportunity to stop and work this stone. Tree-throw sites would also double as shelters, the snapped branches being easily utilised and formed into temporary shelters, while knapping took place.

Amongst the well formed lithics are other chunks and mis-struck cores, which may indicate a certain awkwardness in knapping. Perhaps inexperienced hands fumbled with techniques not quite mastered (Edmonds et al 1999, 54).

As I turn the core round in my hand, I feel its weight and cold hardness. Leaning into the anglepoise, the surface reflects green and black at me. This piece has not been worked as much as it could have been, I'm sure. Looking more closely however, I see fracture lines running along and into the rock. Two hinge fractures have told the knapper all that is needed about the weakness of the stone.

Better tablets are passed to less experienced hands. Longer pieces with a satisfactory working edge are easier to grip. The handle core is struck well and blades are created. Most of these are left. The knapping takes place as time passes. a learning process which teaches the hands and eyes.

March

> *One swallow does not make a summer, but one skein of geese, clearing the murk of a March thaw, is the spring.*
>
> *Leopold 1949, 18.*

Signs of seasons changing, such as geese migrating and moving around, may have ultimately driven certain Mesolithic communities to act in certain ways, responding to traditions and 'ways of doing'. Recent surveys of geese in Scotland (Kirkby et al 1999) account for a pattern of migration which can probably be extended back thousands of years.

The Icelandic pink-footed goose winters for certain periods in Scotland, and a large roosting area is situated today at West Water Reservoir, near Garvald Burn.

> Pink-footed geese begin to arrive in Britain from late August to mid-September. Peak numbers generally occur at major sites in mid-October...Birds redistribute during the winter including movements to sites further south...Birds start to move north again as early as February and the return passage to Iceland/ Greenland begins in mid to late April.
>
> Kirkby et al 1999, 12.

The cacophony of honking arrows streaming across the sky heralds the return of these fowl from winter roosts further south. They rest at West Water for a few weeks before going to Iceland for the summer. After the long hard winter, it is inevitable that the coming of these birds signals a period when hunter-gatherers appreciate change in the air, and whether they made a significance of these birds or not is impossible to say, although goose hunting would certainly seem a likely strategy at this time of year.

Evidence for short term occupation at repeated intervals over time has been postulated for Garvald Burn. As we saw in chapter 8, knapping occurred next to a fire. The creation of blades, microliths and some tool forms can describe the hustle of an overnight camp, or even one which involves a longer stay. There may have been more activity at this location. Amorphous burnt features from test pits away from the camp fire, and distinct anomalies from the geophysics indicate possible structures which may suggest longer-term activity. Phosphate analysis hints at possibly more permanent activity away from the scatter and knapping floor, but which may be connected to it.

This site is very close to the reservoir, although is also close to other possible bodies of water or marsh which would have fulfilled the roosting requirements of the geese. The return to such a campsite during the 6th or 5th millennium BC may have been linked to the anticipation of change which the geese carried with them. As a familiar clearing was visited for a specific purpose, the memories it held from walking through it over the course of the year would be superseded by memories more specific and in tune with this time of the year. Appropriation of the site such as clearing specific areas of the camp may have been undertaken. The remains of previous camp residues and traces, lithic scatters and working debris, old hearths, shelters, all these may be covered by new plant growth. However, these signs and residues may have played a significant role in understanding and remembering past events and the success of previous hunts.

The relocation of old scatters and 'reading' of them may have played a part in the whole process of preparing for an understanding of the hunt, the processes about to be enacted over the following days, giving value to the place. The noise of the geese may act as a soundtrack to this work. The remains of previous scatters may influence future actions.

Trying to locate an old knapping floor would be difficult, although highlighted by charcoal remains and firespots (figure 9.5 below). Scrub and new growth would need to be cleared to reveal debris and tools left behind, in anticipation of this search. Perhaps these would have been collected and used as instruments to enhance stories told to younger members of the hunting party about previous visits to this camp, and the significance of the geese in terms of food and the changing seasons. Everyone may have played a part in walking over old ground, finding significant residues, akin to fieldwalking today.

As the fire catches hold, knapping commences without a second thought, others mend clothes and tent fixings, or prepare food for a meal. As the previous debris are left, so a spread of material is created along the clearing. The scatters bind old actions to present ones. In an effort to understand why that rock is there, it is left in the area it was found. By acting out necessary routines, an understanding of place is created, and perpetuated. The inner meaning of what is ancient and instinctive is combined with what is new and conscious.

As the knapping at Garvald is undertaken, debris fall around next to the fire, cores which were carried or collected from the river banks nearby are worked in a way known and understood. No conscious effort is needed to work the stone. It is shaped through an intimate knowledge and appreciation of the rock. The shapes spun from the blurred swing and the echoed ting of split stone take on a form well known by everyone present. Quiet singing keeps a rhythm to the knapping. As night falls and the noise of the geese quietens, the light of the fire is enough to see the core, although this is hardly necessary as to feel the shape of the blade scars is enough to position the punch.

Much waste falls around and is left where it lies, indelibly marking the ground with memory, to be recalled the following year (figure 9.6 below). Blade after blade is struck from each core, after a variety of flakes are taken to prepare the blade elements. Occasionally a flake is chosen to make a tool, a scraper is formed quickly to take the fat off a newly skinned pelt. Repairs are needed to certain articles after the journey to this site. Burins and awls are formed, some are left as a piecemeal offering to the birds which will fall tomorrow. As the final stages of reduction are reached, certain blades are selected, notched, and broken. Microliths are formed, the rough anvil stone being lifted closer to the flickering light. The first bird given will dress this arrow with its finest feathers, and imbue it with the powers of flight as witnessed every day at this time of year.

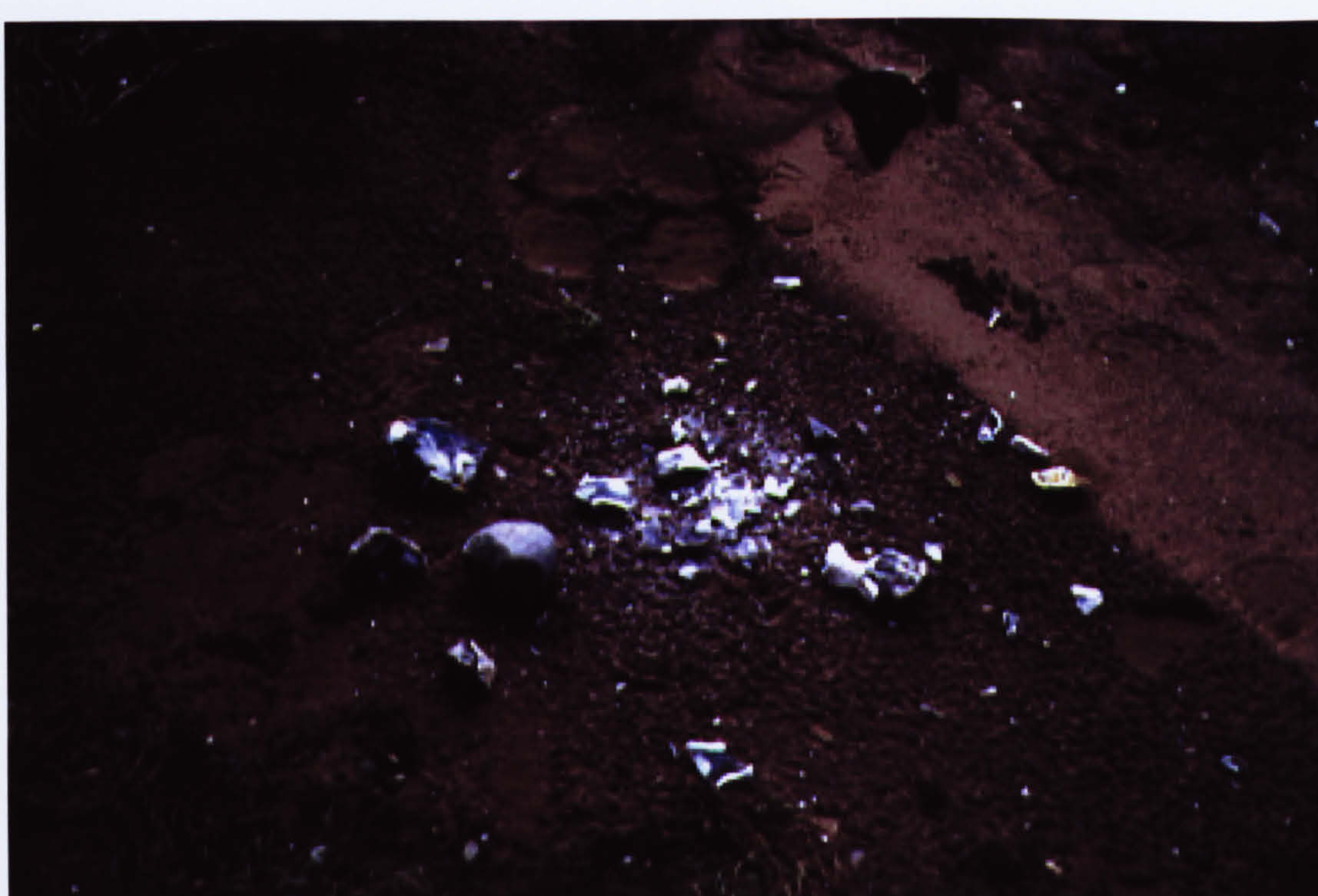
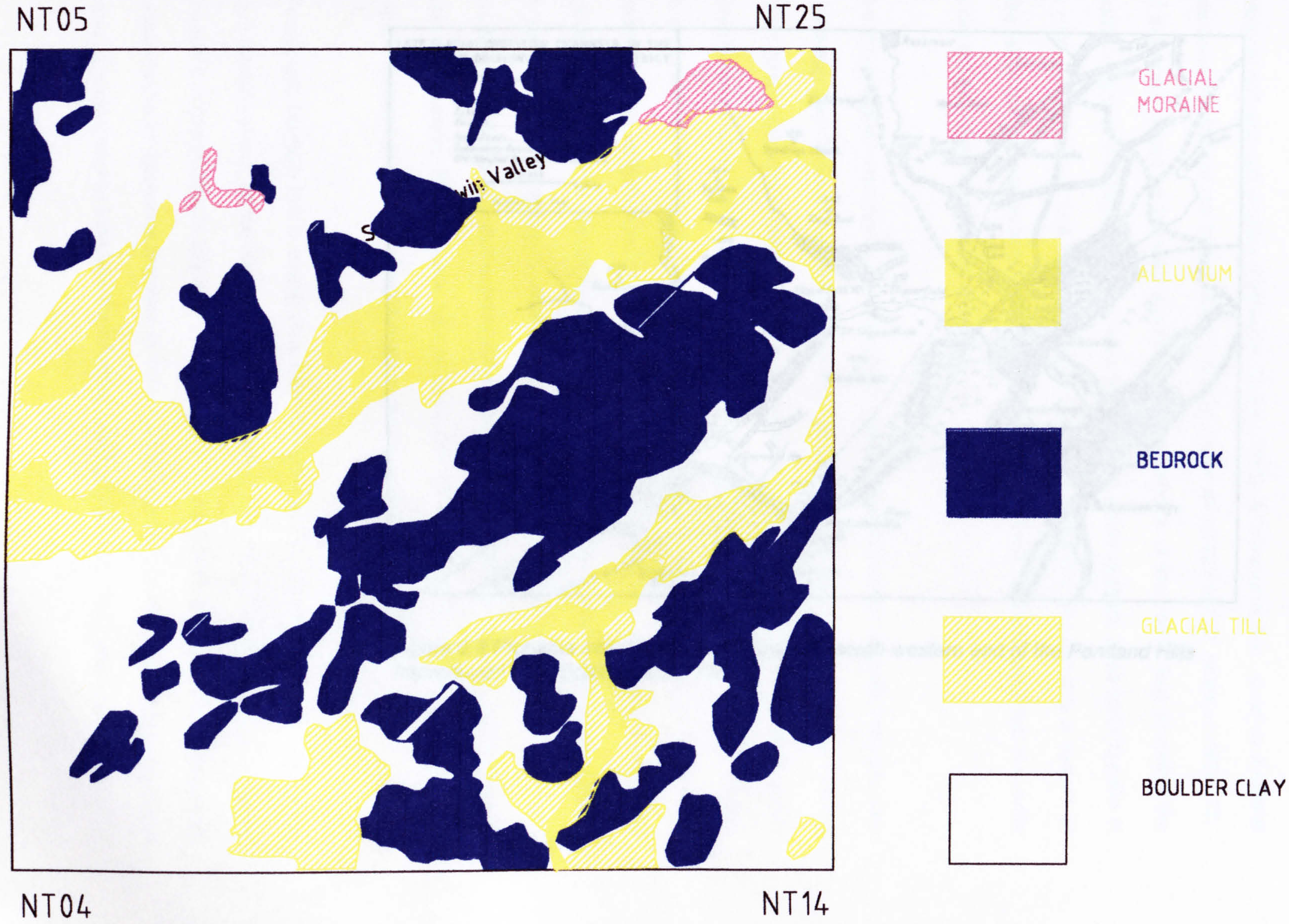


Figure 9.7 Solid and drift geology for South Medwin valley



April

> *The same logic that causes big rivers always to flow past big cities causes cheap farms sometimes to be marooned by spring floods. Ours is a cheap farm, and sometimes when we visit it in April we get marooned.*
>
> *Leopold 1949, 23.*

The rains which grow in length and strength throughout this part of the year quench the thirst of the windblown plants and animals. These rains also flood many parts of the Southern Pentlands area. Although possibly being problematic to camps or settlements situated at lower altitudes, this flooding may have acted as a sign to communities when combined with other elements in the yearly cycle of movement around the landscape. Although such flooding would have occurred at many times throughout the winter, it may have been venerated specifically as warmer weather signals change and movement between valleys, upland and lowland, wet and dry areas. A simple re-creation of a past environment suggests that a post-glacial lake existed across the South Medwin valley in early prehistory.

If we look at the geology and soils of this area (figure 9.7), we can see that there are many glacial deposits within the lower lying land surfaces, and these glacial melt-water deposits of sand and gravel reach a height of approximately 230-250 m OD. The whole extent of the South Medwin valley is a mixture of fluvioglacial red and reddish brown sand and gravels, which were deposited just after the last glaciation. The current theory regarding the glacial history of the area is that the last ice to invade was from the south and south west originating in the Southern Uplands (Eckford 1952, 133). As this glacier decayed, the "...outwash gravels were liberally deposited around, over and beneath the ablating ice...Typical landforms...are well preserved between West Linton and Dolphinton where some of the ridges are almost 30 m high...extensive and unterraced spreads of alluvium occurring to the south-east of West Linton and approximately 4 km west of Dunsyre probably accumulated in temporary ice-dammed lakes during glacial retreat (figure 9.8).

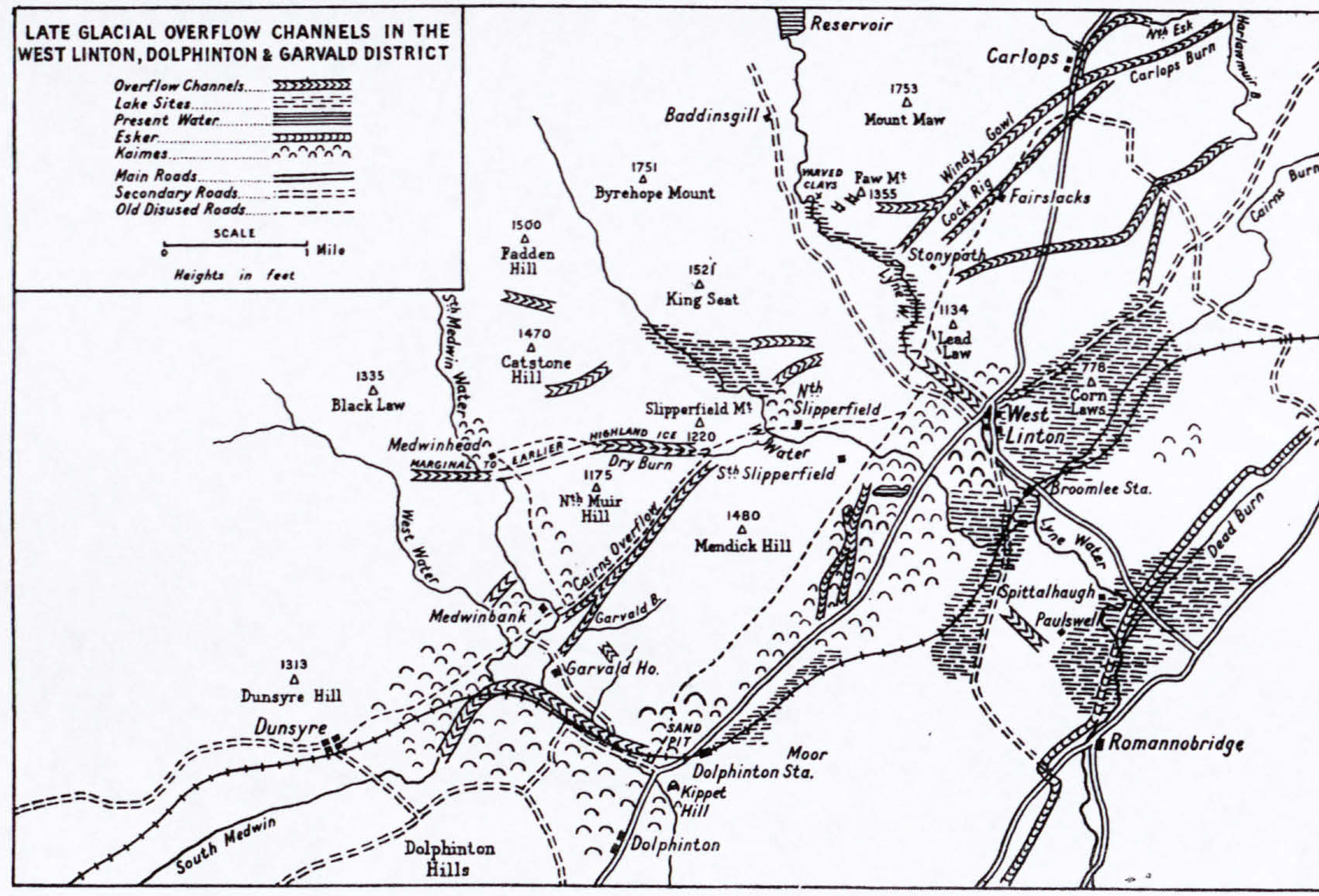


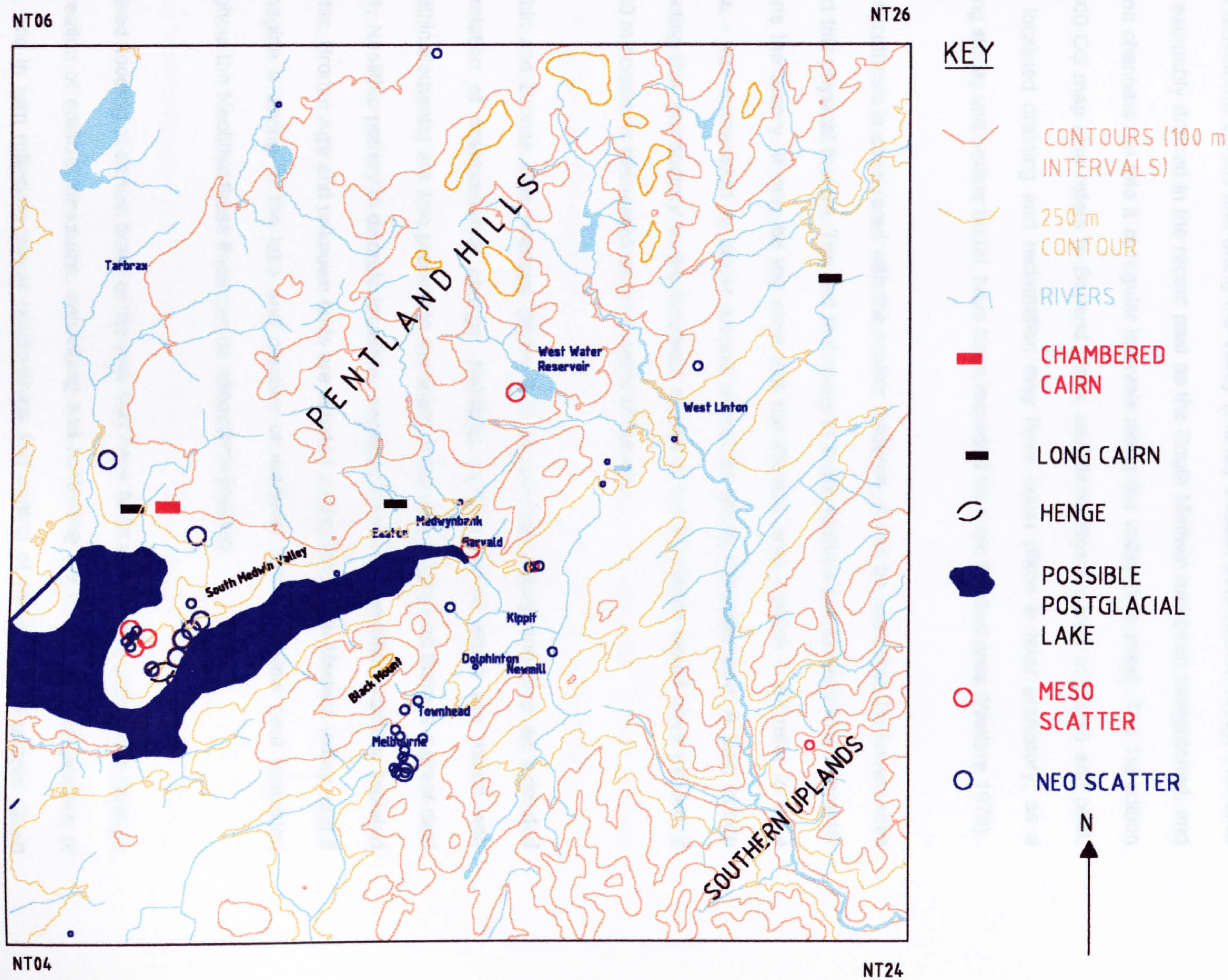
Figure 9.8 Probable sites of late glacial lakes at south-western end of the Pentland Hills (reproduced from Eckford 1952, 136)

Taking this evidence, it can be postulated that there was a moraine-dammed post-glacial lake covering the valley floor throughout the Mesolithic, which may have slowly dried to form a large marsh as the climate changed. The presence of fluvial-glacial topographic features at various points to the sides and end of the valley indicate the glacial presence, as do the geological drift and soil profiles (Ordnance Survey 1975). A "sinuous esker... runs as a medial spine down the floor of the broad valley... at a height of about 225 m OD" (Welfare 1976, 73), and this contour can be followed around the circumference of the valley floor to define the possible edges of an irregular marshy area today, which could possibly have been flooded in the post glacial period. This has been reconstructed in figure 9.9. Presumably a system of cores taken from the valley bottom would confirm this hypothesis, unfortunately that is outwith the capabilities of this present study.

If the lithics scatter evidence is considered, we can see that Mesolithic scatters from the area - at Weston and Garvald Burn, lie on or above the 225 mOD contour line, as do the majority of later prehistoric monuments. If this is taken to represent areas of drier or more freely drained land on which settlement or movements of populations occurred, then it may confirm the presence of a lake or marsh. Similar topographies can be seen and have been demonstrated to be the traces of postglacial lakes in other areas. The presence of lateglacial deposits near Lockerbie, Dumfries and Galloway, indicated that a late glacial lake occupied this part of the Annan valley, "...after the main ice sheets waned, a considerable lake must have existed in the area under consideration" (Bishop 1961, 126). Subsequent fieldwalking by local archaeologist Bill Cormack has actually discovered Mesolithic scatters around the postulated edges of this lake (Cormack, pers comm), and none from within.

It is certainly feasible that a marsh may have replaced the hypothetical flooded area of the South Medwin valley, as the climate changed throughout the Mesolithic and into the Neolithic, although it is impossible to say how soon after the last glaciation this would have occurred. Measurements of lacustrine deposits in core samples would indicate a chronology for these events. It is important to note how the different environments may have affected the

Figure 9.9 Reconstruction of possible post-glacial lake in South Medwin valley



populations living there at the time: a lake would offer a means of transport and communication over relatively large areas; while a marsh would no doubt act as a barrier and restrict movement across and along the valley (Murray Cooke, pers comm 1998). The area was presumably drained in the recent past as the South Medwin has been straightened, and irrigation channels run into it at regular intervals along the valley (see map). The 1st edition 1:50 000 OS map also refers to Borland Moss, and delineates an area of marsh and peat. Some localised draining and reclamation may have taken place in later prehistory, as a standing stone, and beaker burial, have been recorded from the flooded area (Welfare 1976).

If this hypothesis is considered with the scatter evidence, it can be seen that the known sites respect this physical feature. The fact that many of these scatters are Mesolithic in character supports the theory. It may be the case that the Weston area - which I will refer to as a plateau - was surrounded by water around almost its whole circumference. A land bridge connecting this 'promontory' to the Southern slopes of the Pentlands would have existed, if the 230 m contour is delineated as the extents of the lake.

Neolithic and Bronze Age overlays (figure 7.2) support this theory and give an extended interpretation of environmental change. Neolithic scatters (all of which are mixed with Mesolithic elements) are also present to the south of the area. Higher up there is a great deal of early Neolithic pottery in discrete locations, separate from the Mesolithic scatters. Isolated Neolithic, Bronze Age and unknown finds are situated across the South Medwin valley, and if we imagine a drying of the lake and creation of marshier land and slow peat formation throughout the Neolithic these finds can be adequately justified.

Localised flooding at certain times of the year may have been utilised and understood through the creation of artificial structures, enhancing and controlling the movement and position of water, and in turn reflecting power relationships and control of movement of people. Such places may have been situated with views which referenced the very meaning of the monument and the peoples' lives who built, maintained and used it.

May

> *May is the best of times. It is like being in love. All senses are quickened to a point of almost unbearable sensitivity. The green of the new leaves shines with a cathedral intensity. Every moment in the garden is precious, and to miss a day - as so many days are missed to work or duty - is an irretrievable deprivation.*
>
> *Don, M & S 1999, 147.*

If you walk uphill towards the highest point of the ploughed area at Weston and pass through a firebreak in the forestry, the slope levels out, then falls away gradually, giving way to a natural route between two flattened bluffs. The northernmost bank of the henge is just visible from here, sitting on a small rise at the edge of a shallow ridge, roughly 100 m away. On approaching the bank, the immediately surrounding landscape is composed of rolling knolls and scarps, which create a near horizon in the foreground, obscuring any distant reference points. The closer you get to the bank, and now also one of the two breaks in it, which face northwards and southwards, the highest points of the surrounding hills gradually appear over the dominating fore-ground. This distant horizon seems to rise slowly higher as you continue moving downslope towards the henge, still following the lowest course between the rises on either side. As the bank is reached the northern break within it becomes very obvious, and to continue up a slight incline onto and through it suddenly opens up the view of the South Medwin valley and the hills which had previously been hidden.

Walking towards the monument's opposite entrance in the south of the bank, a similar effect is experienced, as the South Medwin valley is obscured by a rise at the edge of the ridge to the south. On climbing up to the henge from this side, the valley again becomes visible at the same moment as the bank is reached.

The henge banks curve away southwards and join up roughly 90 m away to form an oval structure 66 m wide (figure 9.10). The ditches within it are still visible and although much reduced, enhance the illusion of a raised central platform. Looking around at the surrounding landscape from the henge, it is possible to identify various prehistoric cairn sites on the tops and sides of the hills forming the horizon, although the monuments themselves are not visible from this distance. Black Mount dominates the southern skyline across the valley, stretching from the base of this are the South Medwin alluvial flats, scarred at intervals by sand and gravel quarries. One quarry at Newbiggingmill lies where a standing stone once stood, and the discovery of a beaker cist was made here as the quarry was extended, (Welfare 1976-7). Dunsyre, and further off, Garvald lie to the left (NE). Dunsyre Hill and the cairns and long cairn at Easton can be made out further round to the left (N) and turning round further lie the western slopes of the Pentlands are visible, which hold the cairns already mentioned. To the right (S) loom the giant forms of Tinto Hill and the Southern Uplands.

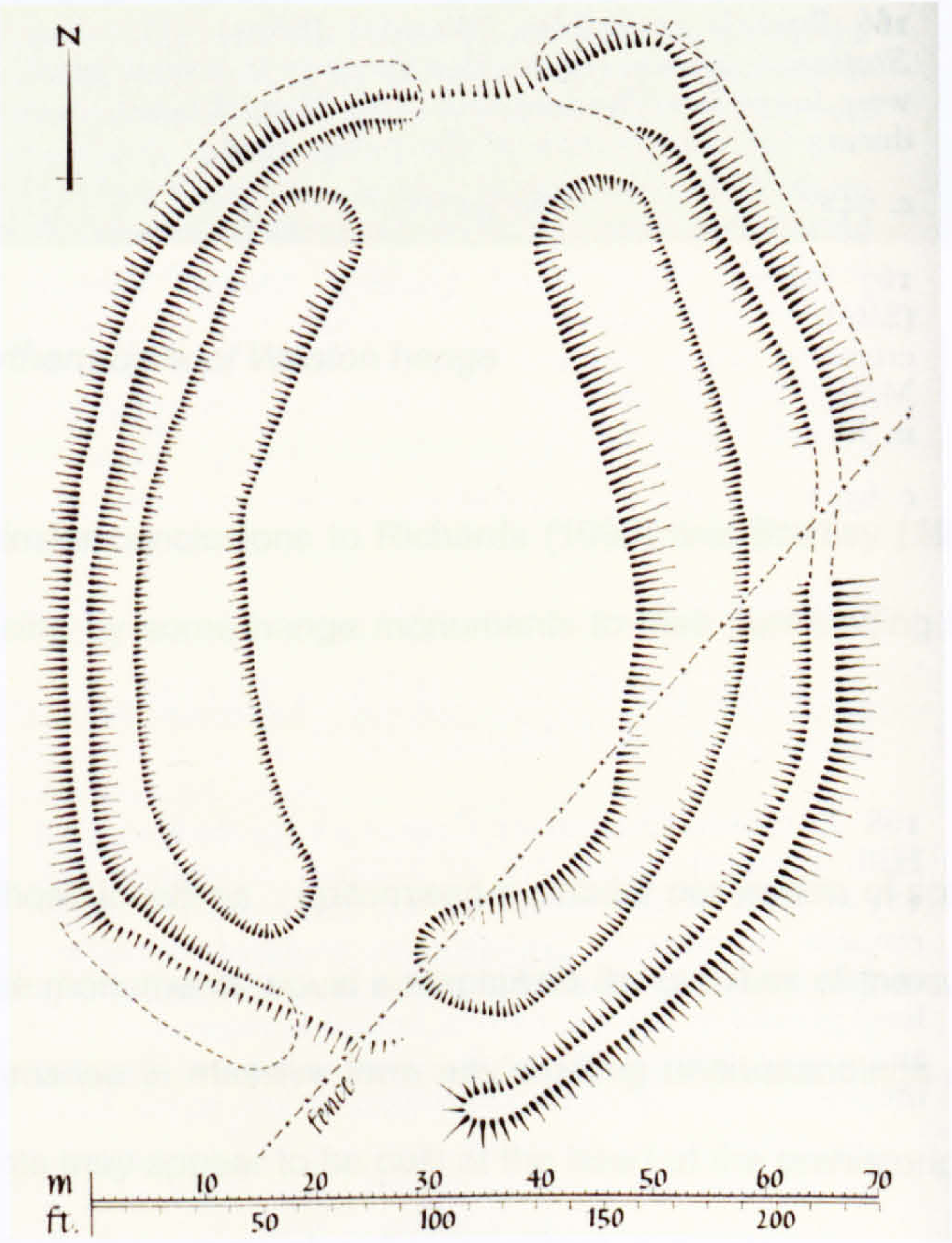


Figure 9.10 Plan of Weston henge (reproduced from RCAHMS 1978, 78)

This 360° visual tour of the surrounding landscape has been made to create an awareness of the experience one may have had when standing *outwith* the banks of the henge at certain times in prehistory. The heights of the bank at this time no doubt obscured this view from whoever may have stood inside the henge (figure 9.11).

Figure 9.11 Northern bank of Weston henge

It is possible to draw similar conclusions to Richards (1996) and Bradley (1998) concerning the imitation or referencing by some henge monuments to their surrounding landscapes. As Bradley states:

> I suggest that those locations... epitomised a circular perception of space, so that the creation of these monuments would encapsulate the qualities of the surrounding area and might summarise in massive form any existing understandings of that location. Such monuments may appear to be built at the heart of the prehistoric landscape, but at the same time they may also be important symbols: representations of that landscape as a whole.
>
> Bradley 1998, 122

Ideas behind the use of Weston henge can certainly be constructed within this hypothesis. The surrounding landscape is steeped in archaeological remains, many of which may have been contemporary with one another. The position of the henge seems ideal to encapsulate and summarise the visual history and knowledge of the surrounding area.

Bradley discusses the possibility of there existing a "threefold division of space" on these sites, referring to the space occupied by the people inside the henge, who have a restricted view of the surrounding landscape, the space created by those sitting on the banks, who have visual access to the insiders, and the wider landscape, and those who are excluded from both, being outside the banks.

At Weston, the topography allows an interesting expansion of this idea, as a natural mound creates a situation overlooking the henge, acting as an extension to the northern bank. People on this area would also be facing the view of the valley, and immediate reference to the monument and its situation would be possible.

It is interesting to recognise that the mixed Mesolithic/ Neolithic assemblages are situated around the henge monument. Depending on the monuments date, it could be suggested that the builders specifically chose that situation to build the monument for reasons which were adopted from ideas formulated about the significance of the place during the Mesolithic. The strong presence of Mesolithic scatters suggests that the area was utilised and therefore was significant to those who were present there: the scatters and formation of these would have delineated or marked a space which was constantly returned to in recognition of social acts played out between individuals in this area. Many of the scatters would have no doubt been recognisable to the viewer from the waste and flake styles left behind from previous visits - individuals may even have been recognised if they were known to the viewer. Types of debitage may have acted as signs to the initiated, revealing the acts which had been created, and consequently giving the place a significant meaning. A history of this locale was constantly created and evident to others through the creation of lithic debris. The concentration of such a large number of Mesolithic knapping spots at Weston, not only at the henge, but higher up to the north, justifies the significance these places held.

The table below gives a breakdown of assemblage variability for the lithic scatters catalogued by Sinead McCartan in 1988 (McCartan 1988). These tables are reproduced from McCartan's report. As can be seen, much working of material was undertaken over probably a long period, possibly indicating seasonal camps throughout the later Mesolithic, and working into the Neolithic.

Figure 9.12 Raw material and lithic types from Weston 1988.

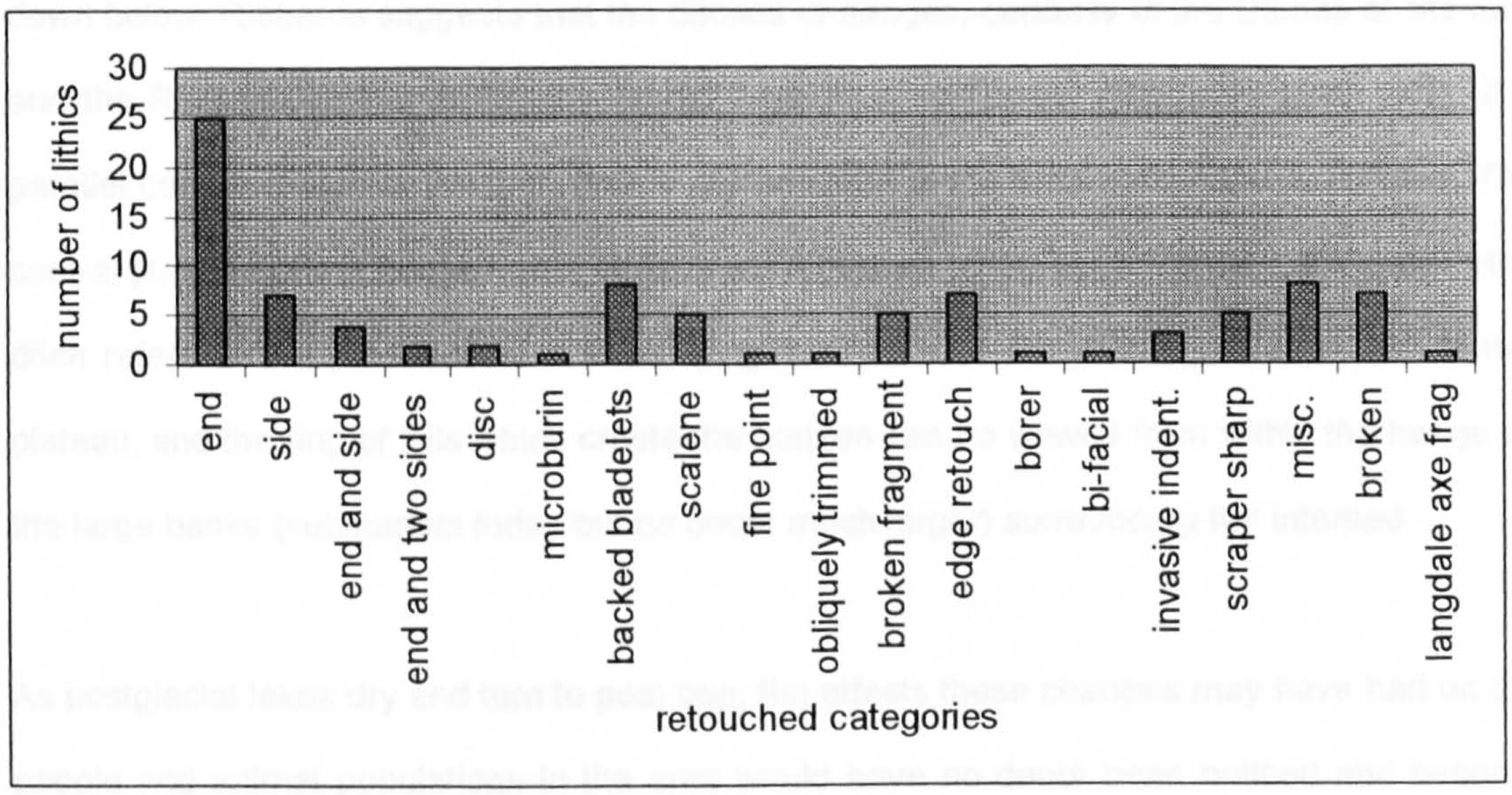
Material	***No. pieces***
Chert	2400 (91.8%)
Flint	174 (6.6%)
Quartz	4 (0.2%)
Jasper	0
Agate	10 (0.4%)
Pitchstone	24 (0.9%)

Lithic types

Type	***Sub-type***	
Cores		192 (6.2%)
Chunks		197 (8.7%)
Flakes		1640 (62.8%)
	primary	129 (7.8%)
	secondary	918 (55.9%)
	tertiary	593 (36.1%
Blades		205 (7.8%)
	primary	0

secondary	67 (32.6%)
tertiary	138 (67.3%)

Figure 9.13 Retouched categories



McCartan indicates that a pebble source of chert was exploited, as 78 chert pebbles were recovered from the scattered remains. Primary knapping was conducted at the site, indicated by the large number of cores, unretouched flakes and blades. Blade production was a main aim, although there are a high number of flakes present.

She also notes a high incidence of scraper re-sharpening, core rejuvenation and core trimming flakes, and although McCartan postulates that this may indicate 'resource stress' due to a paucity of raw materials, it is unlikely to be so in an area with a local chert source. It is more likely that this shows a high level of core management, whereby a skilled knapper is able to rework certain pieces adequately. It may also indicate that many artefacts had biographies of significance to the owners. Sharpening of scrapers, or core trimming, allows us to see the care and attention spent on such artefacts. Rather than throwing them away to start work on a new core, much thought and skill went into maintaining and working a piece of stone, a personal possession, to produce as many blades or flakes from it as was possible.

The henge monument will have been in use by the communities living at Weston. The Neolithic scatter evidence shows that settlement was highly likely at this area. A local monument, in a local setting. The axis of the entrances has been mentioned above and the imitation of the surrounding landscape is inescapable. The position of the henge at the edge of the plateau is also significant, presumably directly overlooking the flooded area/ marsh down below. Richards suggests that the ditches of henges, certainly of the Stones of Stennes and the Ring of Brodgar in Orkney, would have filled with water (Richards 1996, 203). If a parallel can be drawn at Weston, then a reproduction of the local landscape is created. The central platform of the henge forms a miniature reference to the larger plateau, the water filled ditch refers to the presence of a lower lying flooded area surrounding a large part of this plateau, and the ring of hills which create the horizon can be viewed from within the henge as the large banks (substantial today but no doubt much larger) surrounding the interned.

As postglacial lakes dry and turn to peat bog, the effects these changes may have had on the people and animal populations in the area would have no doubt been noticed and become significant. If these changes were reproduced through social histories, they may have subsequently been transformed into the monuments which make reference to the landscape in this area. The henge itself may have been a symbol of the ancestors, an understanding of the local environment, a transformation of change occurring to Mesolithic and Neolithic populations. It would represent a physical history of the communities who interacted in the area.

As the rains became more frequent, dispersed communities and herders may have made their way slowly to this area. The size of the marsh acting as a barrier would force people to walk known tracks around its circumference. Camping along the way, the henge would be visible from across the valley, with groups already there indicated by many plumes of smoke, and distant music. Herders would be on the move now, the rains improving higher pasture, and the lengthening of the days allowing movement up to them possible, passing by the henge and congregations on the way.

Arrows would be lost at the edges of the lake, as fowl or stray deer were shot at. The frequency of these isolated finds tells its own story. At this time of year, stags cast their antlers, and these may have been chosen for tool-kits.

The journey around the lake ends when the henge is reached. Many familiar faces are seen, others not so well known. The Mesolithic traces of earlier stone working by ancestors would act as a testimony to the importance of the site, and validate the reasons for the henges construction and meaning.

June

> *But this, we now remembered, was a stream of parts. High up near the headwaters we had once seen a fork, narrow, deep, and fed by cold springs that gurgled out under its close-hemmed walls of alder. What would a self-respecting trout do in such weather? Just as we did: go up.*
>
> *Leopold, 1949, 37.*

Old friends, distant cousins and new faces would be met for the first time in a year. Cattle would mingle. Children would make new friends. Stories would be shared. The antlers collected along the way would be put to use as picks, renewing the deep ditches of the henge before they became too water-logged to work. The banks would be heightened and entrances cleared in preparation for the various ceremonies which would be acted out by various members and groups over the next few days. Stories would be told in the form of movement, dance and song, some serious with only a few watching, those who were allowed. Perhaps at times some less serious accounts were performed, with younger generations and children mimicking elders and old-fashioned ways within the space of the enclosure.

As the ditches became more water-logged and flooded, the island in the centre acted as the stage in which all these stories and accounts were told. Locals recognised there own landscape in the shape of the hills and lakes, while more distant communities told of contact with areas many weeks away.

With the congregation of many people together, new friendships are made and social ties forged. Stone working techniques are shared, different styles and fashions discussed. Stone from far away would change hands, accounts and descriptions of the journeys taken giving the stone special meaning.

From the Mesolithic, generations and generations visit this area, repeating acts which as far as they are concerned extend back as long as can be remembered, and which will stretch infinitely into the future. Slowly things change however, sometimes imperceptibly, other times quicker and more violently. As the clearings merge together and more trees are cleared, the place takes on different ways. Monuments are built and the dead are remembered in different ways. Settlements may become more permanent.

These changes can be seen at Weston. As well as evidence for Mesolithic knapping, later artefacts hint at settlement. Figures 9.14 and 9.15 show the distribution of pitchstone, pottery and arrowheads in the area (after Ward 1999). As well as there being over 80 locations showing chert concentrations (many of which are Mesolithic), there are about 48 concentrations of undecorated early Neolithic uncarinated ware, with a variety of different sizes represented. Much of the pitchstone was associated with this. Axe fragments were also located in the same area. Figure 9.16 shows the finds from one specific trench opened up over a large concentration of such artefacts.

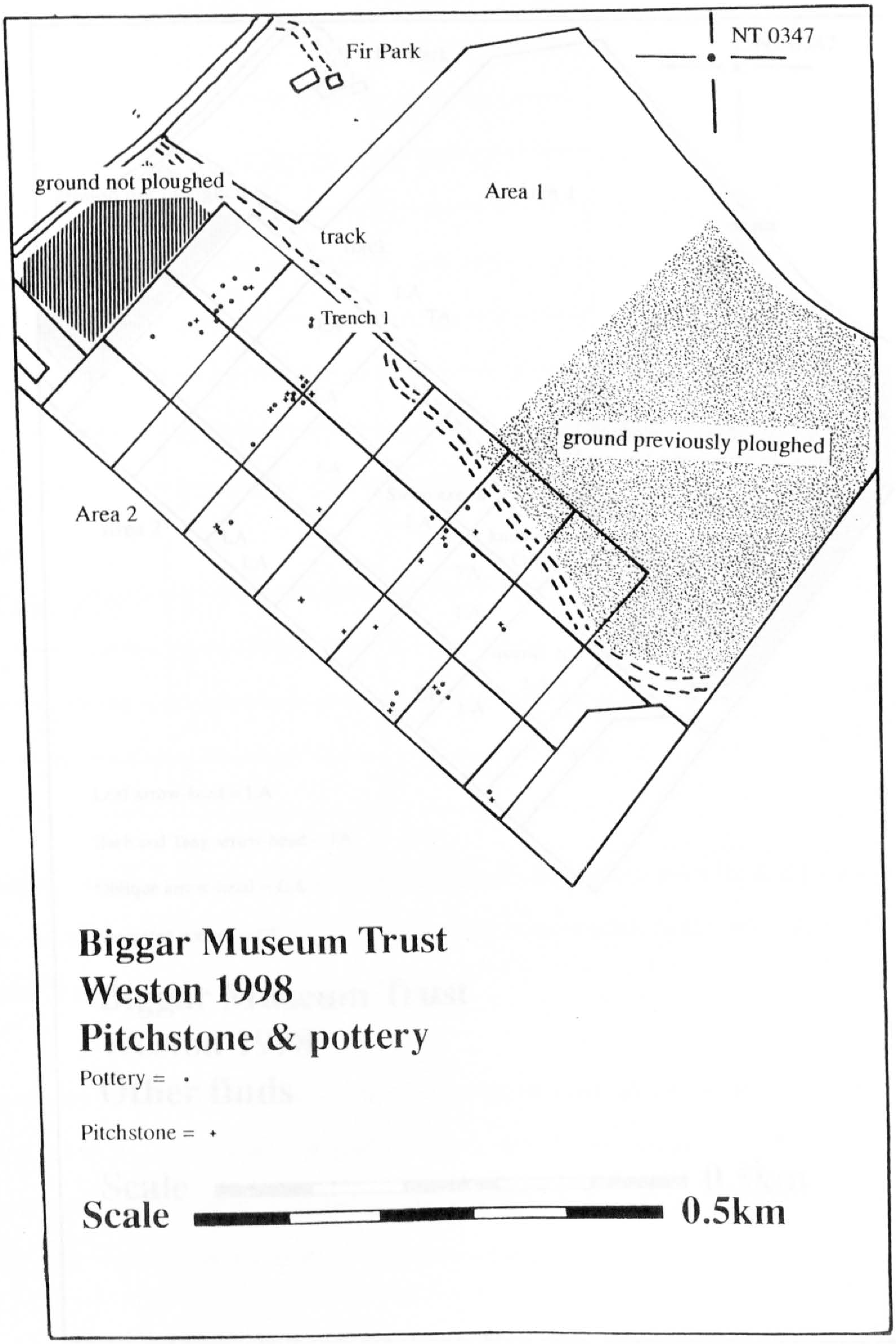


Figure 9.14 Pitchstone and pottery from Weston 1998 (reproduced from Ward 1999)

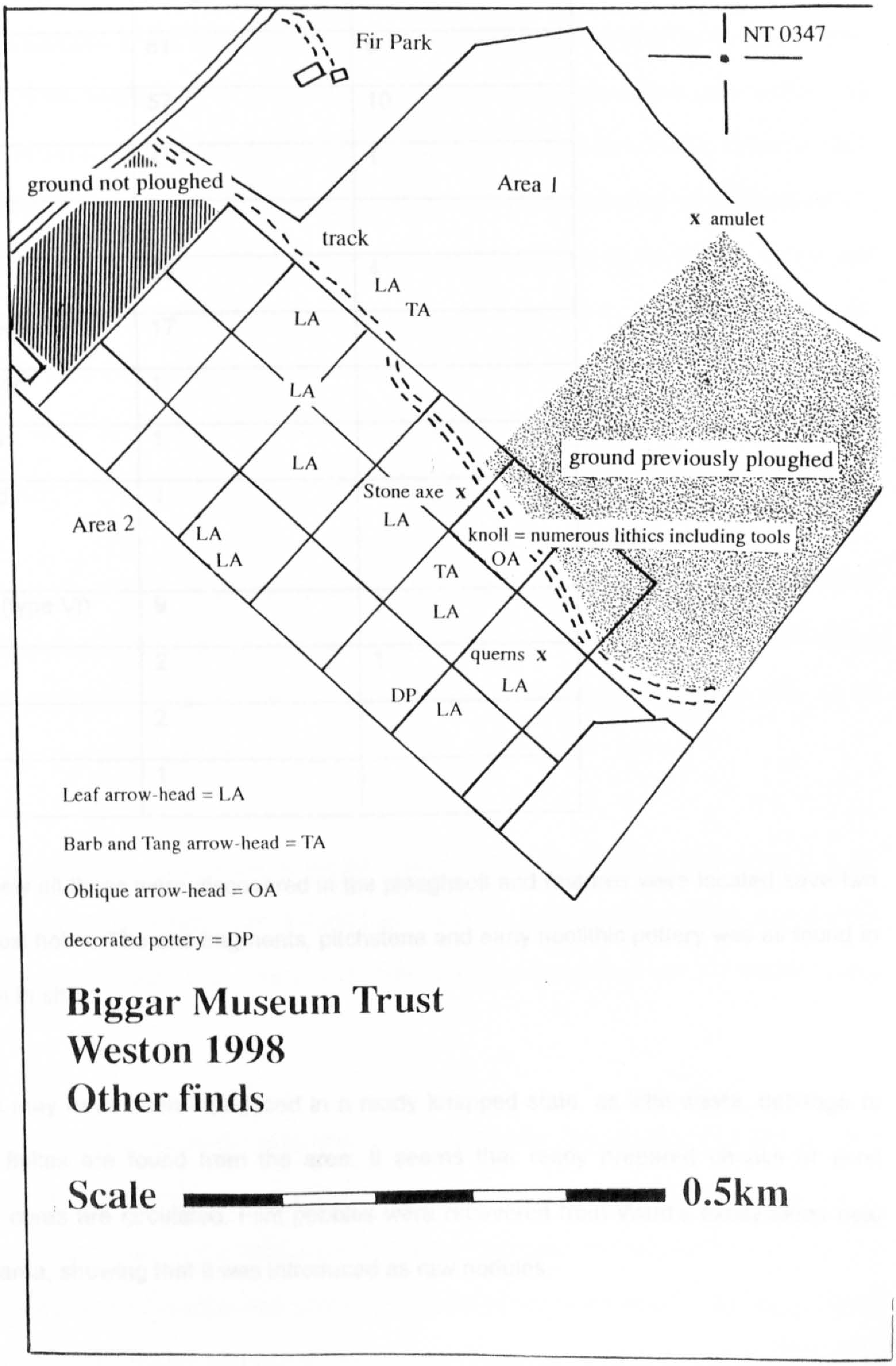


Figure 9.15 Arrowheads, pottery and stone axes from Weston 1998 (reproduced from Ward 1999)

Figure 9.16 Finds from trench 1

material/artefact	*ploughsoil*	*in situ*
chert	61	6
ceramic	57	10
flint	4	1
burnt flint	2	
pitchstone	25	4
hazelnut kernel	17	
chert scraper	1	
flint scraper	1	
leaf-shaped arrowhead	1	
axe flakes (type VI)	9	1
quartzite	2	1
agate	2	
jasper	1	

Unfortunately all these were discovered in the ploughsoil and features were located save two possible post holes. The axe fragments, pitchstone and early neolithic pottery was all found in association in situ.

Pitchstone may have been introduced in a ready knapped state, as little waste, debitage or decortical flakes are found from the area. It seems that ready prepared chunks or even diagnostic cores are circulated. Flint pebbles were recovered from Ward's excavations near the same area, showing that it was introduced as raw nodules.

As these exotic stones were circulated, the personal relationships between people may have been more significant than the objects themselves. The experience of handling and owning artefacts which have a diverse and long cultural biography would have increased the value and significance of them (Bradley and Edmonds 1993, 50).

Although the situation of this area suggests a regular meeting of communities to share ideas, the building of the henge may have developed at a later stage. Mesolithic communities will have gathered here, and as changes took place amongst traditions and stories, different ways were circulated and appropriated. The significance of this concentration of artefacts which spans from early prehistory to later times, at the periphery of one of the largest monument complexes in central Scotland is very significant. An area which may have played an important role as a prominent vista and meeting place during the Mesolithic, where tracks may have merged, developed slowly and grew, to incorporate a monument which acted as a focus for movement and meeting through this landscape.

As dispersed, migrating communities gave way to more permanent ones, structures would become larger and more temporary. Occasional movement would no doubt occur, as crops or land was exhausted. Quern stones and heavier items may have been left in pits, to be retrieved when the area was farmed again.

Two such quernstones were found at Weston (Ward 1999, 16) buried upside down in a pit. No other finds were recovered from around them, and this may indicate that the stones were buried as an act of closure of the settlement or the activities connected with processing grain, after harvest.

The history of this plateau would have been its strongest ally, perpetuating its significance in memory, and through practice, enlarging the experience imposed upon it. Elders would have mapped out biographies of this landscape to people from near and far, young and old. The stones of previous settlements and gatherings would be intertwined with the views of the landscape, and the cairns and other monuments scattered across the horizon. As the seasons changed, and different events marked the passing of time, the scatters would witness countless social relationships being borne from meetings.

July

> *Summer has arrived like a great liner calling into port, yet the days are already beginning to shorten. Up to this point, promise has underwritten all harvest and there has been a sense that there is still time to recover from setbacks and rectify mistakes, but from now on comes the realisation that you reap only so much as you have sown.*
>
> *Don, M & S 1999, 191.*

As the herds moved upland, from Weston, the monuments within the landscape reminded the herders of their ancestors, their dead, and where they came from, and went to.

The large mixed scatter at Corse Law (Clarke 1989) ranges from the Mesolithic to the Bronze Age. Although this has been interpreted and entered as one large mixed scatter within the database, it is clear from figure 9.17 that there are separate concentrations of scatters across the area walked. Certainly these scatter(s) are related to the cairns which are also situated in this area, despite Clarke's reticence at claiming a direct association between the two (ibid 53). She does state however that

> ...it is possible that the main concentration of artefacts lies just to the south of the cairn group.
>
> ibid 53

The type of scatter found here is comparable with the other larger sites at Weston and Garvald, with the use of local pebble chert for knapping, and occasional flint imports, although there is a large amount of flint from the assemblage (see figure 9.18 below). The scatter lies to the east of the North Medwin river and the cairns which occupy this area were presumably contemporaneous or in use after the communities who lived in this area. Clarke's analysis of

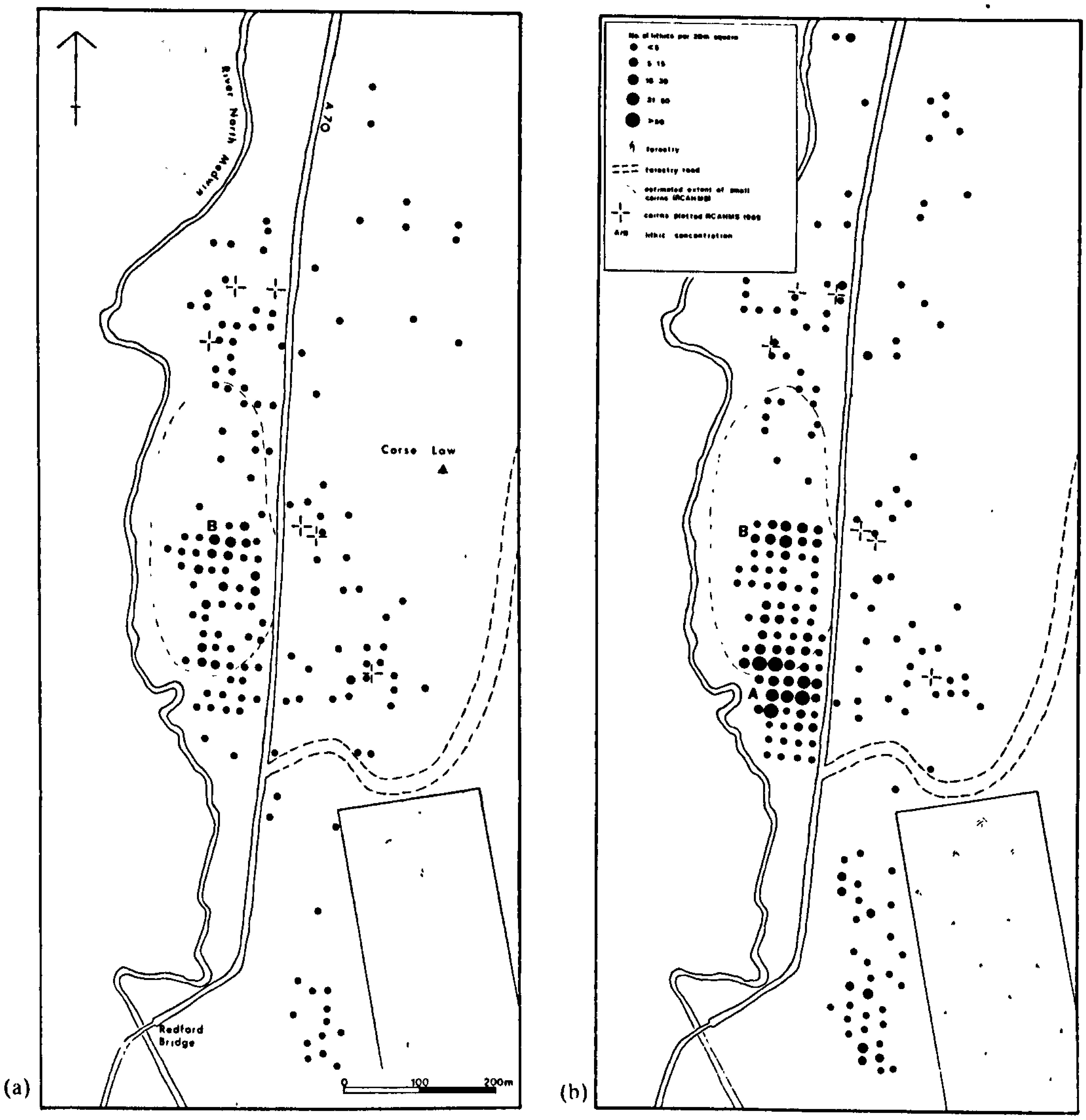


Figure 9.17 Lithic distribution on Corse Law (a) flint (b) chert (reproduced from Clark 1989, 52)

the scatter suggests that the flaked lithics probably represent a series of assemblages deposited over several millennia.

Figure 9.18 Assemblage variables from Corse Law.

Type	***Sub-type***	
Cores		34 (1.5%)
Chunks		134 (5.1%)
Flakes		1803 (79.7%)
	primary	23 (1.3%)
	secondary	103 (5.7%)
	tertiary	1677 (93%)
Blades		141 (6.2%)
	primary	0
	secondary	13 (9.2%)
	tertiary	128 (90.8%)
		34
		3
		0
		0
		2262

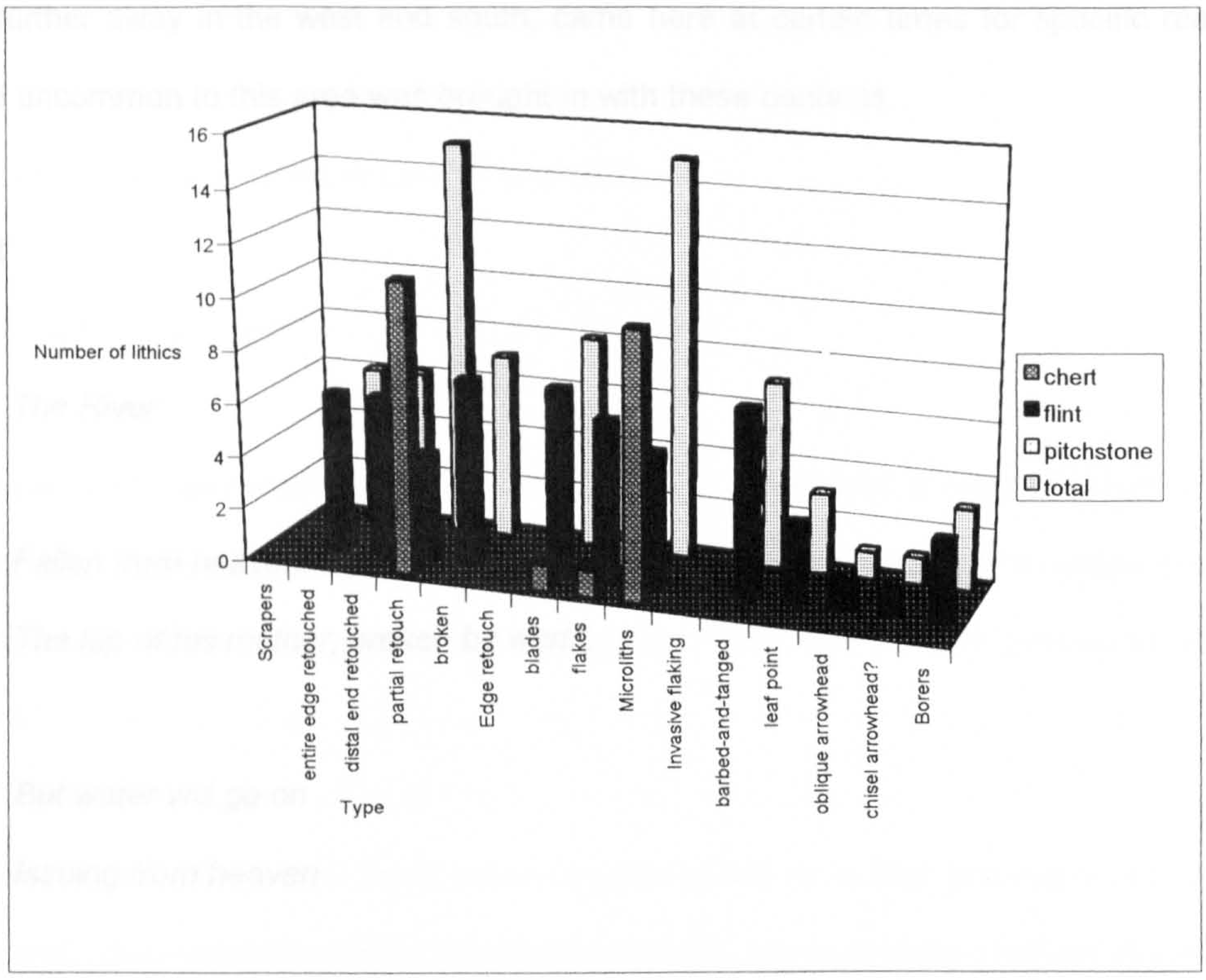


Figure 9.19 Retouched types by material (reproduced from Clarke 1989, 46)

From her analysis of the material, Ann Clarke saw that the certain differences in raw material selection and use was visible. Chert occurred as flakes and debris, and represented over 90% of all the cores (Clarke 1989, 51). The chert was definitely reduced from chunks on the site.

The flint may have been introduced in a prepared state however, as a smaller proportion of flakes, debris and cores are present. The flint also appears to have been deliberately selected for retouched pieces, especially non-microlithic types. Chert was worked into scrapers and microliths, with more narrower, shorter blades than being made from flint.

It may be that the use of chert relates to earlier periods, in the Later Mesolithic, with the use of flint becoming more popular in the Neolithic, as more contact with people from afar is made. The relationship of these scatters to the later monuments is very important, and allows us to imagine that congregations of people from far and wide, who themselves had contact of places further away in the west and south, came here at certain times for specific reasons. Material uncommon to this area was brought in with these contacts.

August

The River

Fallen from heaven, lies across
The lap of his mother, broken by world.

But water will go on
Issuing from heaven

In dumbness uttering spirit brightness
Through its broken mouth.

Scattered in a million pieces and buried
Its dry tombs will split, at a sign in the sky,

At a rending of veils.
It will rise, in a time after times,

After swallowing death and the pit
It will return stainless

For the delivery of this world.
So the river is a god

Knee-deep among reeds, watching men,
Or hung by the heels down the door of a dam

It is a god, and inviolable.

Immortal. And will wash itself of all deaths.

Hughes 1995, 243.

The presence of numerous upstanding monuments in the vicinity is extremely relevant. We can see a continuation and spread of material and continual use of a social presence throughout this landscape, picking specific locales does not destroy that continuity, but reaffirms it.

The mixed scatters present at these areas become bound up in time and memories, and the later communities understand their landscape through the seemingly constant presence of past people at specific locales, or as linear courses throughout the landscape.

Pollard states

> There is a growing body of evidence to suggest that sepulchral and ritual monuments were constructed on the sites of earlier activity.
>
> 1995, 336

The scatter evidence from these specific areas in the Southern Pentlands adds force to this statement. Tilley mentions the possible relationship between Mesolithic and Neolithic scatters and upstanding monuments (1994, 117), and in his conclusion suggests that physical and topographical features in the landscape would have acted as 'markers' which would have held social significance to the Mesolithic hunter-gatherers

> The occurrence of flint scatters at these locales would have had considerable significance during the Mesolithic and early Neolithic for a recognition, reading and understanding of place.
>
> Tilley 1994, 207

The Royal Commission suggest that these cairns may originate in the Neolithic, but continue over a long period of time (see above). It has no doubt been made clear that the presence of scatters in this area is linked to the upstanding remains. The number of upstanding remains across the remaining 10 km of the Southern Pentland slopes will no doubt have associated lithic material remains, yet to be uncovered by forestry ploughing.

Looking north from the ploughed area the SW flanks of the Pentland hills drop from the horizon, and on these slopes lie 100's of cairns. Westruther Burn (NT 02 49) intersects a series of small cairns, totalling 130 (Masters, 1989). These are small, less than 3 m in diameter, and it is unknown whether they are prehistoric or not, but they lie adjacent to diagnostic prehistoric cairns at Greens Moor (NT04NW) and Horse Law (NT05SW). The Greens Moor cairns consist of four large and at least 80 small ones, (RCHAMS, 1978). They lie between the North Medwin and its main tributary, the Westruther Burn. The small cairns are spread over a distance of about 1.3 km (021498-022483) and appear as "...low grass - or heather - covered stony mounds from 3 to 6 m in diameter and not more than 0.3 m in height." (ibid, 55). The larger cairns are all circular in plan and on average are 10 m diameter: they have all experienced stone robbing.

The cairns on Horse Law form the largest surviving assemblage of such structures recorded in the RCHAMS Lanarkshire Volume (1978). They stretch intermittently from Stoneypath (051493) westwards as far as the Westruther Burn, and extend northwards approximately 1.5 km.

There are also two larger cairns within these groups. The chambered cairn at Burngrange (022495) is roughly 30 m long and may have originally extended another 6 m. It lies about half a mile north of Burngrange. The cairn is aligned almost at right angles to the slope of the hill, its longer axis lying ESE to WNW. It has been greatly robbed and disturbed, and its eastern end is intersected by a stell (Henshall ii, 1972, 457-458). The second larger cairn is the long cairn at Greens Moor, situated on a "heather - covered shoulder of rising ground in the fork of the North Medwin and the Westruther Burn. It appears as a low elongated mound composed largely of rounded boulders and measuring 82 m long from N to S by 13 m in greatest breadth (RCHAMS, 1978, 44). Again, this has been heavily robbed.

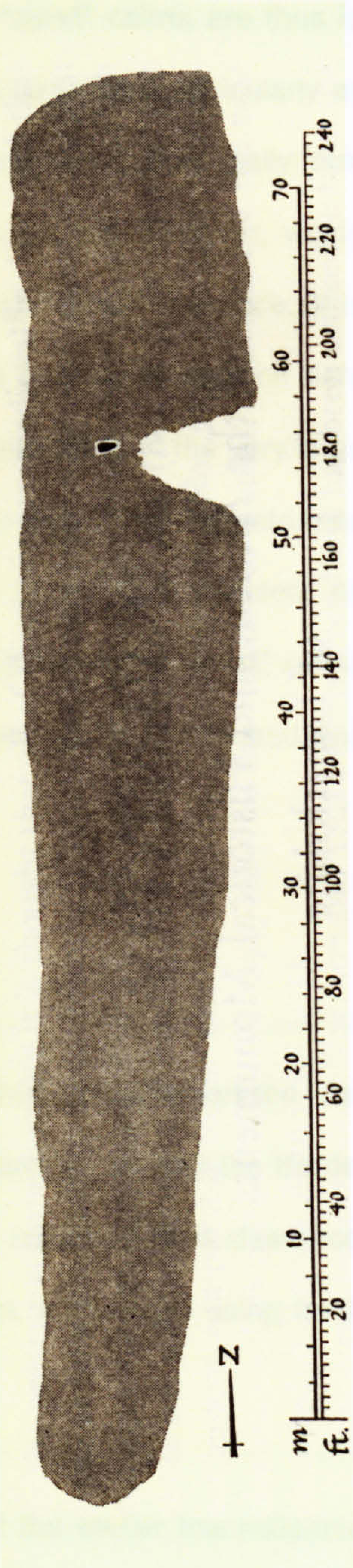


Figure 9.20 Plan of long cairn on Greens Moor (reproduced from RCHAMS 1978, 44).

It has been debated whether the smaller cairns represent any more than clearance, and this must be considered. One opinion by Graham in 1956 however, creates a possible interpretation. His comments refer to the cairns situated around Westruther Burn:

> One ordinary unit in the cairnfield, which has been opened, contains the remains of a cist. This has been built of stones lain in courses, not of upright slabs, and before

> disturbance may have measured about 5 ft by 2 ft. The "small" cairns are thus in association with important sepulchral monuments, and it is tempting - particularly as at least one of their number itself contains a cist - and to suggest that they really form an enormous cemetery going back to Neolithic times. To do this, however, would necessitate throwing over the equally valid evidence for agricultural clearance...It is consequently safer to suppose that settlement, agriculture and burial went on here concurrently, and for a long period, the building of cairns - especially of the very large cairns - leading to or helping in the clearance of plots large enough to cultivate, and stone-heaps, primarily formed for agricultural purposes, providing convenient on occasion for cisted burials. As at some other sites, the well-preserved "small" cairns may well belong to a later phase than the plot-boundaries, which are wasted and scanty.
>
> Graham, 1956-7, 19

The RCHAMS Lanarkshire Volume states that low stony banks, which may support the idea of the cairn being field clearance, are "almost entirely absent in Lanarkshire and the Border countries" (RCHAMS 1978, 8), and subsequently, if the cairns do represent field clearance, some could have been dumped in marshier land adjacent to them, rather than using freely drained areas, (ibid, 19).

It is clear that although activity is present in this area throughout the earlier few millennia, settlement was probably present into the Bronze Age. Typical Bronze Age farming communities living on marginal land may have lived amongst earlier monuments, marking the presence of their own with past associations. The position of these earlier monuments will have influenced the building of the later barrows and cairns., as traditions run through generations.

It is possible to imply the position of the long mound at Greens Moor from its relationship to the surrounding landscape. Green Moor long mound positioned between Westruther Burn and the North Medwin river, approximately 1500 m from the confluence of the two, and midway between them. On approaching the monument from the lithic concentrations at Weston, the North Medwin is intersected and followed uphill. After the confluence has been reached, and on approach to the highest point on the horizon, the bottom end of the long cairn is met, while the higher end hangs over a prominent slope, as if it were imitating the rivers below.

Rituals would have taken these movements into consideration, and when passed by herders or people traversing the hills, the monuments would have acted as a mnemonic to the activities which focussed on it throughout people's lives. In imitation of the landscapes the landscape was referenced and understood.

September

> *The hypnotic and soporific heaviness of summer passes and early autumn somehow has a welcome touch of freshness to it. Even now the horse chestnuts, earliest of all trees to change colour, are bringing the first splashes of yellows and browns...*
>
> *Lovegrove & Barrett 1982, 90.*

The knapping of stone for some age groups and sections of society may have been limited and organised around certain procedures and various points in the year. Many places had a season and an association with specific tasks.

As the longest day was witnessed by the movements of the sun and moon, so certain activities may have been symbolically initiated. The days are getting shorter from now on, and as some age-groups would be soon entering their first autumn and winter as adults, they would need to learn the ways of stone sourcing and working. The basic fundamentals of knapping and knowing the correct stone to work may have been an instinctive skill learnt through living within a society which practised stone working on an everyday basis. The practical knowledge which would have been experienced concerning knapping would presumably have been taken in through a constant involvement and learning process. However, there may still been strict ceremonies and rites of passage through which individuals would have to progress formally, even if they already understood the practice informally. The passing of midsummer may have signalled one of these fomal occasions. Indications in nature may have imbued meaning for these processes. For example, the leaping of salmon at this time of year would have been an occurrence witnessed and known of. It may be the witnessing of a salmon leap which allowed an elder to know that it was time for a child who was coming of age to partake in specific ceremonies.

It may be that certain rites involved making a journey into territories which were unknown or had been taboo to the initiate(s) before a certain age. Chert rock outcrops may have had such a significance. Outcrops may have been visited throughout the year as a matter of course, but also taking on other significances at other times for many reasons.

There are chert outcrops situated to the south of the Southern Pentlands area, in the Southern Upland hills. It is possible that there was an element of control over access to these sites, especially into the later Neolithic, although it is assumed that access in earlier times would be easier, and only 'closed' when certain people (as above) were not allowed to visit or see the chert sources.

The significance of these outcrops would change throughout prehistory. Whether hunter-gatherers made use of this stone or not is a matter still to be tested, by excavation at the sites and analysis of the lithic-debris there (something proposed by Tam Ward). However, elsewhere in Britain, these sources were utilised throughout the Neolithic. The quality of chert is not necessarily a factor in encouraging active use of these outcrops, as good quality material can be found in glacial gravels across the whole of the region. Working the outcrops would be connected to more significant social rites of passage, and through negotiations of power and control between various communities.

In January 1986 an apparent extraction site for chert, at Flint Hill in Peebleshire, was located. Chert screes downslope from shallow pits may represent preliminary testing and flaking of material extracted from a geological outcrop.

Wickham-Jones 1986, 6.

Many known outcrops run through the Southern Uplands (figure 9.21 above), many of which are probably still to be recorded today. These hills will have acted as potent symbols to the raw material which was worked throughout prehistory. People visiting them would have met others not seen for a long time. Reunions would become part of the process of visiting and working the rock face. Each outcrop may have had its own identity, linked to families and groups living in specific areas, or to certain age-groups. Perhaps the experience of a person granted them access to the best rock.

The journey to these places, although not far from some settlements, may have taken days, with specific routes chosen to create a sense of mystic or added importance to the rock.

October

He's lying in poor water, a yard or so depth of poor safety,
Maybe only two feet under the no-protection of an outleaning small oak,
Half under a tangle of brambles.

After his two thousand miles, he rests,
Breathing in that lap of easy current
In his graveyard pool.

Extract from October Salmon by Hughes 1995, 262-3.

They set off before daybreak, leaving the small group of houses in the clearing and picking their way between the garden plots, the recent crops already clamped for the inevitable winter. The boy was excited but apprehensive - he had never been allowed to this specific place, it had always been the preserve of adults. His time had come however, and if he pleased his uncle in the days which would follow, he would return to this camp no longer a boy, but a man.

They passed other settlements on the way. Many people knew of the boys induction. Others had not heard, and so it was necessary for them to be told. The uncle remained quiet throughout these proceedings, the boy had to explain and defend the path they were taking by himself. His uncle was purely a guide, a silent watcher.

When it was time to rest, the boy decided. Where they stopped to camp, it was upon his shoulders. Food had to be gathered and caught with no assistance from the older man, he only watched in judgement.

He looked on with a degree of circumspection, following the boys every move. Many of the procedures involved were already known to the youngster, having learnt through daily practice. He had hunted with the older men in the camp, and had imitated their actions since he could walk, playing at the edge of the camps with the other children. Strips of hunting net would be given to them to play with and catch pretend deer running through the trees. This is how he had learnt the correct ways. But now he was on his own, friends of the same age would soon take this journey too.

But now this knowledge must be acted out formally, strengthening and justifying it to the others. He remembered the old ones talking of this passage to adulthood, and saying that one day they would find that the games they had been playing were no longer games, but the real thing, for they would have become adults.

He had to prove he was capable of looking after his kin, especially these older ones who could no longer fend for themselves and were about to embark on longer, more spiritual journeys themselves. If he failed, he would make it hard for himself throughout the rest of his life, and all the journeys he must make in the future.

His toolkit was borrowed from his older brother who had already proved himself in this way, two seasons before. He had given it to his younger brother without a fight, as was the way. A hand over with no added problems initiated an easier passage.

It was getting darker and they had come to a dry clearing. The boy looked for signs as he had been taught. His uncle sat and waited. Branches were selected and cut. Water was taken from the burn. The boy went about his business in an orderly manner, with little thought to what he was doing. His uncle approved of the movements, and lay back satisfied when his meal was finally cooked.

It was only one days walk to this specific outcrop, but the trails they trod stretched it to three. A wide circuit had led them through several settlements, and across many marshes and rivers. The cairns were acknowledged, every place had its own story, fitted into the metaphorical journey being acted out by the physical walk.

The boy knew they were nearly there, as they had been walking amongst the sources for the past day. He did not know which was the one his uncle would lead him to. As they approached the foot of a steep climb, the man motioned for them to stop next to a pool. A small waterfall filled it with clear sparkles, the water's descent could be traced cutting up the hillside between the dispersed woodland. They sat and waited. The boy was not sure why they had stopped or what was required of him.

They set up camp here, and waited by the pool. The next day the symbol which the uncle had been waiting for arrived. A flash of silver leapt from the water upwards over the waterfall and fell backwards. Again it jumped, and this time the salmon was successful. As soon as it climbed upwards, the boy knew this was what they had been waiting for. He got up and followed its silvery tail. His uncle smiled and followed.

At every pool the salmon leapt, and they followed it upwards. At long ascents it would struggle to rise, but eventually make it. It had taken on the role of the guide, the uncle falling behind, allowing the youngster to quietly walk the remaining stretch on his own.

A larger pool was eventually reached, shaded by a small oak and a tangle of brambles. The boy knew the way of the fish, knew it would stay here. It was then that the rock outcrops became visible. A clearing amongst the trees had been cut around the cliff face, and the screes acted as a chert blanket, pulled across the gap. The band of grey glowed in the October light. It had a quality compared to the grey metal of the fish.

The uncle's long silence was broken as he instructed the boy to catch the salmon, and explained the symbolic act of this, how the fish had guided and shown the boy the correct outcrop, how he must take the form of the fish before any working could commence.

As the salmon was gutted, the silvery scales coated the boys hands and forearms. They remained there as the stone was quarried, as flakes fell from the lumps and tablets taken from the hillside. The source of the water lay near the outcrops, as if the source of life itself had formed the chert in the past. And now, as the boy knapped and made his own tool-kit, the scales rubbed off onto the stone, sealing the journey made to this place, as the salmon's long journey had also come to an end. He knew what tools to make for his survival and the ways of manhood. What would be needed during the long days away on a hunt. He knew what wood to use to fashion the hafts and handles, what grass to weave for straps. He had made these things before, but never under such circumstances, never imbued with such strong meaning. The process and journey had made him understand what it was all about, had reinforced the stories of such things within in.

The act of making these tools, seeing the translucent scales transferred from his hands to the grey surface, painted them with the experience of his journey and the acts undertaken during its course. He had proved himself to his uncle, and therefore to the rest of his kin, his passing into manhood would be celebrated on his return to the camp.

November

> *Who's killed the leaves?*
>
> *Me says the apple, I've killed them all.*
>
> *Fat as a bomb or a cannonball*
>
> *I've killed the leaves.*
>
> *Hughes 1995, 142.*

The gales which strengthen at this time of year would bring down more vulnerable trees at the edges of woodland, and this wood would most probably have been utilised and cut. Axe flakes fall and leave a trace amongst the split grains.

The working of lithics may have transferred from an outside thing, to one conducted inside. Protection from winds would possibly have been afforded by simple structures, alignments of stake-holes being the only evidence today. These may also have made use of tree throw situations, where a screen of cut poles and vegetation created a side wall onto a vertical tree base.

The symbolism of falling leaves may have influenced stone working at times throughout prehistory. As the winds lift the oranges and reds from the branches, stone working may have taken on an added meaning.

The wind and rain lashed the window as I sat chained to my desk, bent over the light, examining the chert core. I felt safe in the surroundings of this enclosed flat, my warm cocoon, away from the miserable murk outside. As I described each lithic, picking it up, scrutinising every scar, fault and fracture, I thought about the weather, and how the working of these lithics must have changed through the seasons, depending on the comfort of the situation. As bad weather forced people into shelters, the action of working would have taken on different meanings. Waste may have been caught on a mat or rug, rather than falling onto the earth outside, as summer working may have granted. Screens would have to be constructed to stop the wind, sheltering a fire or the knapper as they sat lost in the stone.

*****

She picked up a pebble from the few in her pouch, having only recently collected them from the river bank. It felt heavy in her hand, her thumb smoothed a flat, worn side as it rested on her callused palm. The hammer stone tapped softly at a suitable edge, it sounded clean, and so she split the rock. Working this fresh side, she took her antler punch and struck off an uneven flake, as the stone rested on the worn skin lying over her thigh. She knew a small point would be produced from this flake, and picked it up and retouched the edge of the point to make it work better.

*****

Find 109 is a chert (blue/grey) core-trimming flake measuring 18 x 20 x 4 mm. It is retouched on the LH dorsal surface, presumably to strengthen a fortuitous point resulting from the nature of the flake. Possibly used as an awl or point.

*****

More flakes were taken at certain intervals from the pebble, falling as the leaves fell from the trees, slowly forming it into a cube-like shape, a recognisable form to the woman. She felt as if this shape had always been in the rock, and she was acting as a guide, drawing the core from the untouched pebble. She worked only the blue part of the stone - the brown was more brittle, and was always left if there was blue to be had. It was seen as unlucky - many quarriers had fallen from the cliffs as the brown rock crumbled beneath their feet.

*****

The core measured 24 x 22 x 16 mm. Blue/grey chert. Single platform, worked on one side only, where the blue chert is, no doubt because it is of better quality. Work terminated due to the small size of the piece, a hinge fracture is the last bladelet scar.

*****

The wind was blowing leaves into the hurdle, dressing it with a delicate coat of brown. The pebble had made a good core, and the first blades struck from it were well shaped. Some would be further enhanced, the more debris there was, the superior the piece. The last blade failed to run through to the edge of the stone, it had given all it could, and she lay it down to her side. The fractured blade rolled into her lap amongst the other debris, making a small chink, the last noise made from this core.

She examined the pieces. A sift through them allowed her to choose certain bits, some flakes and blades. The rest of the debris poured from her skin as she rolled forwards onto her knees. They formed a small pile which resembled the leaves piling up at the base of the windbreak.

A blade was picked up. Its fine parallel sides were razor sharp. The end was rounded with tiny scars, where she had run the hammer stone over the edge as she had done for as long as she could remember. Her thumb smoothed the roundness of this edge.

*****

I smiled at the beauty of the blade. SF 64 from 16.0E/ 7.8N was a chert blade (blue/grey). Good parallel sides, small punctiform platform showing edge scars where abrasion to the platform has strengthened it.

The bulb of percussion was neat and smooth. Bare ripples could be seen running down the ventral surface. This may have been used as it was, although no edge damage or polish is visible. Other blades have been altered to form microliths.

SF 120 is a trapeze fragment 10 x 5 x 2 mm, snapped from a blade which would have been notched before breaking. There is retouch along c. 75% of the edge. Accentuated to a point.

*****

The blade was quickly notched and snapped, the resulting rectangle of chert being held between her thumb and forefinger. She rested it on the round anvil stone which balanced between her legs, and carefully retouched the edges she knew were right for the end result to be reached. The opposite end she retouched at a more oblique angle, allowing a blunter edge to be created. She hardly gave the shaping of the piece much thought, and hummed quietly as she worked.

She wanted to make about 20 more pieces like this, so as to have a full set for her arrow, and so she selected another blade with good, parallel sides. The finished microlith was popped into her pouch, to be fixed to the shaft at a later date.

The leaves chased each other in swirls, children imitated their hypnotic movements. Her work was nearly done. She could leave this spot with its fresh debris soon. When they all moved on, the leaves would cover her marks.

December

> *It is the sun that leads the dance of the year along pathways of light and warmth, which may rise to celestial heights or wind deep into the chambers of our heart. Our joy in the seasons carries us along this path, and the festivals wait for us on the way, each one opening up a particular view of life's landscape, each one helping us to assess the progress of our life's journey.*
>
> *Druitt et al 1995, 124.*

The midwinter sunset dies behind Tinto Hill when one is situated to the north east, at Black Mount. Tinto lies 16 km from this area, and its imposing mass dominates the skyline, and would have done throughout prehistory.

On the 20th December 1998, Tam Ward witnessed the sun setting within 1 degree to the left of the cairn which lies on the summit of Tinto, as he was standing within an enclosure 19m in diameter, with a cairn in the centre 5 m in diameter. Along with a second ring enclosure, which may possibly be an enclosed cremation cemetery, the midwinter sunset was aligned with Tinto from these sites.

The significance of this solar event has been discussed by many in relation to a variety of prehistoric monuments in the past. The above description is significant - for this area when put into the context of the remains excavated from Melbourne, a prehistoric site lying about 3 km SE of the enclosures on Black Mount.

The excavations were situated on the north west facing slope of Broomy Law, between 275 m and 300 m OD. The entire area was ploughed with a rotivator and planted with Christmas trees, and mixed deciduous. The excavations were undertaken over known locations of pottery and lithic scatters which had been uncovered by LADAS in 1995. The main concentrations of scatters lay on natural terraces, from which views stretched south west to Biggar Common, and Tinto Hill. Similar features were excavated from all the terraces. Pits were dug which had a variety of fills. Some held burnt and cracked stone and charcoal, packed tightly into the scoop. Blackened areas around these suggested the area where fires had been.

Early Neolithic carinated wares were recovered, smashed with specific sherds inserted into some pits. Quern stones had also been buried, in one case two lay side by side in the same hole. Cremated human bone was found from nearby pits, along with retouched lithic tools, a broken polished stone axe and pottery.

Scattered in concentrations over these areas were numerous flint, chert and quartz flakes, blades and retouched pieces. Hammer stones and pottery were also recovered from the scattered remains, mainly Grooved Ware and Impressed Ware. One pit contained the smashed remains of a Grooved Ware vessel, along with burnt bone.

A Beaker burial was excavated amongst the earlier remains, barbed-and-tanged arrowheads lay scattered by the rotivator.

On the terrace which lay furthest to the south-west, a saddle quernstone had been placed over early Neolithic pottery, crushing it to the sides and base in the process. The quernstone lay in alignment with the summit of Tinto Hill, as if in an act of sacrifice to the mountain, or whatever it symbolised at that time. These homogenous fills, the shallow, bowl-shaped pits, all suggest prompt digging, deposition and backfilling, typical occurrences throughout Britain at this time (Thomas 1991, 60).

Although these findings are still to be analysed, and the records completed, preliminary interpretations suggest that much activity throughout the Neolithic occurred on these terraces. The structural remains do not suggest permanent settlement. It seems that significant rites of passage took place here, ceremonies which were filled with the preparation, cooking and eating of food, possibly at certain times throughout the year, maybe as the midsummer sunset disappeared behind Tinto Hill. The shortest day of the year may have been celebrated by the burning and burial of recently deceased members of certain communities, not able to survive the harshness of winter. Fires and beacons may have sustained light after sunset, and a variety of offerings made, smashed and buried. The long night would be filled with this communion, and as the sun rose to mark the beginnings of longer days, the landscape below would be visible, giving a wider reference to the proceedings.

The view from this place really is spectacular, and it would be possible to recognise and reference places, events and people through the ceremonies and by altering the earth on these terraces. Items which bound social relationships and activities spread across the landscape were detailed and buried, becoming part of the land, as the scatters strewn across the countryside are sedimented into past and present lives. The cycle and routine of living blends these material residues from the past into the present, giving meaning to them even today.

Chapter ten

Conclusion

The thesis began with a background to the various ways lithics and lithic scatters have been considered over the past three centuries. From there, it was possible to lead up to a description of work undertaken in Scotland. The Scottish Lithic Scatters Project, and the research which this entailed, was outlined in chapter one. An in depth analysis of the database was given, highlighting the amount of bias involved in its construction.

A true understanding of the lithic scatter record necessitated a description of the formation of scatters in all dimensions (chapter two). Although this information was taken initially from the database itself (land use field; see figure 1.15), it has been turned around to show the creation of the scatters *before* the database conception. Additionally, this chapter showed relationships people have had with the material, albeit unconsciously, moving through the various phases of scatter creation, from its birth by the hand of the plough, to the recording processes by fieldwalking.

The relationships experienced by fieldwalkers were considered further in chapter three. The lithic scatter resource as it stands within the database was described, but rather than from the perspective of facts and figures represented within the database, the people behind the scatter record, those responsible for it, were prioritised. This approach hopefully made it clear that the resource is constructed by many people over the past three centuries.

The variety of experiences and practices involved behind the scatter creation and recording again makes it obvious that there is a large amount of personal experience and therefore bias within the lithic scatter resource. It would be wrong to see the dataset as a neat set of objective facts. This throws light on many problems with the way knowledge is constructed in archaeology today, and is discussed further in chapter four.

Hodder argued that the way archaeology has been conducted over the past three decades has 'rigidized' the system, whereby large amounts of data, and the hyper-efficient attitudes brought on by developer funded programmes of work (Chandler 1999), have resulted in data-led interpretations. The *processes* involved in data creation are never realised. Recent experiments with the way archaeological reports are presented, and how interpretations are formed from these, are now current amongst some archaeologists (Bender et al 1997). Consequently a reflexive methodology is created, where relativistic humans are incorporated within "...a recursive, interactive web of interpretation and discussion" (chapter four; Chadwick 1999, 8).

This analysis brings current archaeological thinking up to speed with work undertaken in the social sciences since the 1970s. A more reflexive method of recording allows 'research acts' to be considered on an equal basis to the final product of analysis. The research acts behind the creation of the Lithic Scatters Resource are ultimately bound within the practice of fieldwalking. When we realise the importance of research acts in the creation of data and the formation of knowledge, it is possible to see that from these experiences, our stories and interpretations of the past are formed. By weaving strands of this experience into other analyses on the material component of archaeological work, an overall story of the past is formed.

Chapter five took this argument further, and examined the act of fieldwalking. It was shown that our knowledge is structured by the physical act of walking through the landscape at a particular locale, by spending time in that place, and acting within it. By considering the process of fieldwalking, it is also possible to see parallels between the way we as archaeologists understand the landscape in which we work, and the way it may have been understood in prehistory. Lithic scatters across the landscape act as focal points between both activities, binding these experiences across time.

It was suggested that local knowledge is an essential part of any archaeological enquiry, as local archaeologists and people will have a greater 'sense of place' and familiarity with specific locales. As well as having a reflexive archaeology in place, it is necessary to take in the experience of others, forming a pluralistic record.

Chapter six considered these processes in practice. It was possible to see the divide between apparent 'facts' from the database and the authors analysis of certain lithics from one scatter locale, and the actual construction of knowledge through the experience of fieldwalking. My preconceptions were prejudiced by taking the evidence as self-evident. The recording of the experience delivered a more intimate expression of the place, delineated by the scatter. Consequently, narratives of the past were suggested.

The final section of the thesis corresponds to these expressions. A fuller analysis of the database is given for one specific location, the Southern Pentlands area. The 'facts' of the database are not taken as objective, but complemented with an analysis of the people who recorded them and when they were discovered. It is accepted that these peoples' experiences are now lost, but they can be replaced by the author's own experiences of the locale, through spending time there during fieldwork. These experiences, including doubts and uncertainties of the process, are given in chapter eight.

A pluralistic record is attempted through this analysis, although the author is guilty of narrating with a singular voice; no other experiences or opinions are given, only a general impression of how other people understand themselves and the landscape around them. However, an attempt has been made to recreate an understanding of the plurality of voices which always influence the fieldwork process.

Ultimately, interpretations of the authors own experiences and of activities across prehistory are intimated in chapter nine. A combination of the analysis of the scatters from the database information and the experience of the author bring together various narratives of the past. This chapter has been given structure by placing these accounts within the months of the year, thereby improvising an immediate link between peoples responses now and in prehistory with the changing seasons. A suitable backdrop to fabricate stories of the past is given.

Section two of the thesis ultimately shows the value of the database, despite its flaws, and engineers a path between personal experiences from the processes of fieldwork, and the analysis of the data. Subjectivity is celebrated.

An analysis of the lithic scatters resource for south and central Scotland has been given in detail. The journey took many paths; side-stepping frequently to cover issues which arose throughout the work undertaken during the Lithic Scatter Project. Before finishing, it is important to outline briefly the *future* path of lithic scatters.

The future of the resource

Chapters four and five outlined the importance of creating a multivocal and pluralistic record, and the relevance of including local archaeologists and people to archaeological work. Archaeological work which encompasses lithic scatters can achieve these aims by the simple method of fieldwalking, as many people can take part and respond to the landscape through which they walk. By understanding the extent of the resource, and through fieldwalking to try and find lithic scatters, an understanding of the landscape in terms of prehistoric activity is formed.

The idea that such an inclusive work can be adopted by studying lithic scatters was presented at a Council for Scottish Archaeology fair at the University of Glasgow in 1998. The following dialogue describes the installation designed and set up by the author. Its aim was to educate the general public, the majority of who lived in the city, about the existence of lithic scatters and consequently the space created through their discovery.

Lithic scatter – an installation

The installation outlined some simple concepts surrounding lithic scatters. It was based on the premise that the majority of the public, especially those living in the city, were ignorant to the existence of lithic scatters. Even if some were aware of the presence of scatters, they would probably not know of the significance of them.

The main purpose of the installation was to reveal a scatter by delineating the physical space represented by it. To create this space in an artificial environment (i.e. that of the hall), a sense of place is still achieved, as the viewer interacts with the displays by watching, reading and walking from one to the other.

When the viewer discovers that the chipped and flaked stones of the scatter were shaped by a human hand thousands of years ago, a sense of the past is created. When it is realised that a scatter has been created by activities today, such as ploughing, an alternative understanding of the whole landscape is presented; that it is made up of different parts of the past. As the viewer experiences the various parts of the installation, a scatter is brought to life.

Five different displays were represented, these are described below.

1. *Cine film*. This was projected onto a small white box, and showed a pair of hands knapping a core of flint. The flakes and debris could be seen flying from the core as the knapper works. The real debitage, flakes and chunks from the knapping lie at the foot of the projected image, and form a scatter of material spread approximately half a metre from it (figure 10.1).

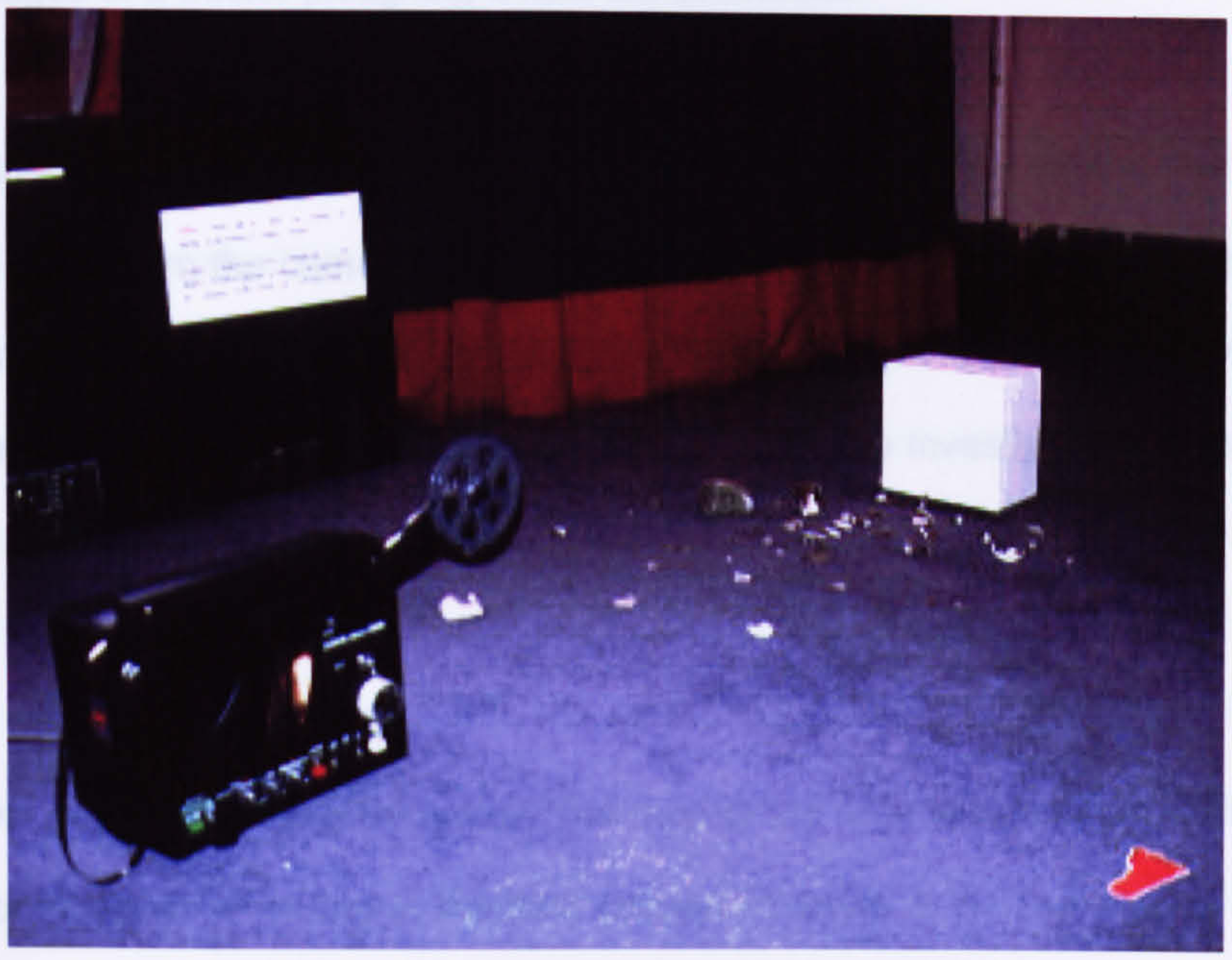


Figure 10.1 Cine projector and knapping debris

2. *Photographs of tractor ploughing.*

Figure 10.2 Tractor ploughing

A series of images of a tractor ploughing a field are presented.

3. *Video.* A video of two people fieldwalking, heads bowed looking for lithics. The film shows them walking away from the camera the length of the field, and then they return towards the camera. This sequence alternates with the view from the walkers' perspective, panning across the furrowed soil, bending down every now and then to investigate a stone. Pin flags are set in the ground when a worked lithic is found. This runs for approximately 20 minutes, is rewound and contiues.

4. *Map of area, plan of scatter, and quotes.* The map of the area is annotated with fieldnotes, giving an impression of recording in the field (shown in figure 8.1). The plan of the scatter gives an alternative representation of the scatter, typical of traditional fieldwork reports (shown in figure 8.2). These images are complemented by quotes concerning lithic scatters by a variety of professional archaeologists, showing how academics have thought about lithic scatters (see below).

> Lithic scatters are an important part of the prehistoric material record, and have been studied and interpreted in a variety of different ways. These studies generally start from the premise that scatters are an indication of prehistoric activity, but they can also be used to illustrate to a wider audience the fact that archaeology is not only about upstanding monuments or isolated to specific locales, it is part of our whole landscape. Even a ploughed field may hold a part of the past. Lithic scatters are created by our actions today, they represent a dynamic and fluid archaeology.
>
> Barrowman, C 1998
>
> ...before one can even attempt to interpret artefact distribution from surface collection, it is necessary to understand the nature and past history of the land surface.

Allen, M J 1991

There is something powerful, fascinating and mysterious about such residues, which are both essentially meagre and represent the measure of time and the condition of mortal life.

Seymour, A 1991

Most types of human behaviour, for whatever period, should be visible through surface collection. Signatures, in the form of artefact scatters, will occur, the one proviso being that material remains were the end product of a given aspect of human behaviour. So long as those remains have survived the passage of time, the patterns should be there.

Schofield, A J 1991

...flint scatters are considered poor data unless a tent or a hut can be resurrected from among the chippings.

Gamble, C 1982

...recent concern with the interpretation of artefact scatters...brings us to the daunting realisation that the evidence artefact distributions across the landscape represent in the *present* is in fact a hierarchy of uncertainties, from the actual activities in the past to deposition, differential preservation, redeposition, differential visibility and collection, which all need to be untangled if we are to approach an understanding of past activities.

Spikins, P 1995

Much current archaeological work is biased towards upstanding remains or corresponding site remnants (i.e. cropmarks). While not wishing to detract from their value, it should also be recognised that much of Scotland's past is not represented by upstanding material, nor by upstanding monuments and cropmarks. Early sites are often unknown in advance of the work that may reveal them, and they may well be represented by lithic assemblages alone. It may be hard to identify them given the current pace and mechanisation of development. Unless we can identify them, however, and take steps to recognise their worth, we shall be losing significant elements of Scottish prehistory.

Wickham-Jones, C R & MacKenzie, J R 1996

More than display or management, presentation of the intangible is a major challenge for archaeologists. Many of the culturally most exciting sites exist beneath ordinary arable fields...yet there is no reason why these should not be celebrated as much as conspicuously visible remains. We have to relate to them through our imagination, a benign and invigorating sense that is all too often suppressed. Artists of all kinds can probably offer the most exciting possibilities for new expression of the importance of such places.

Greeves, T 1989

5. *Box of lithics*. The scatter which has been collected is shown bagged and deposited in a finds box. Typical lithic specialists tools are laid out on the desk (i.e. callipers, notebook, magnifying glass). The final stage in the process of examination.

The following text was also presented as way of explanation, although it was the authors intention to keep the images as abstract as possible. The aim was to allow people to interpret the installation themselves, and draw their own stories from it.

I used to think of a ploughed field as being no more than an area where a farmer grows his crops. I never considered the past history of that field, certainly not in terms of thousands of years. To think that there may have been a small settlement or camp built on that land in the year 3,000BC - nearly 5,000 years ago - is hard to imagine. To think that there were people walking across that land, singing, laughing and telling stories to each other, making clothes and jewellery, pots and stone tools. All that time ago, and not a trace of it all now - or is there ?

It is possible to glimpse at these long gone scenes if the field is studied with a trained eye. Poking out from beneath the soil, small pieces of this culture still remain today, as some of *our* rubbish will remain with us into the future. The objects they made which were created from **stone** have not rotted away, as their wooden houses, spear and arrow shafts, clothes and other organic materials have done.

Certain types of stone, such as **flint** or **chert**, is similar to glass as it has a very sharp edge when broken in a certain way. These stones were therefore used to make an enormous variety of tools such as knives, arrowheads and pins.

Today, when the farmer ploughs his field, the plough digs into the earth and turns it over, revealing these stone tools which may have been buried underneath. The stones (or **lithics**) become **scattered** by the plough. When archaeologists walk across the field, they can spot these lithics and map out concentrations of them. They may indicate more archaeological remains underneath the soil, such as pits and fire spots.

As a postgraduate student at the University of Glasgow, I am being funded by Historic Scotland to collect information on lithic scatters in South and Central Scotland. There are thousands of lithic scatters throughout Scotland, and many fields which are ploughed will reveal remains of a past culture. This is why it is important to investigate them further to see how much information they may tell us about the way people lived in the past.

When I look at moss-covered stone circles or chambered cairns, I often feel a strong sense of the past as I know that these impressive monuments have been in existence for *thousands* of years. Some of the people who built them also made the stone tools which now make up lithic scatters. Although lithic scatters are much harder to see and the sense of past and place not so strong, they are very significant in that they indicate the intensity of human activity which the landscape has absorbed over the past few thousand years, and how we are constantly altering that landscape by our actions today.

Archaeology is part of everyone's environment whether we are aware of it or not. It is impossible to get away from the fact that people have lived here before us for thousands of years, people who make up a fantastic array of different cultures and experiences. Now when I see a ploughed field, I don't just see it as an area where a farmer grows his crops. Next time you see a ploughed field, take a minute to think about the people who may have been living and working there in prehistory, and that a part of them is still with us today !

A comments book had been left to try and gauge how people responded to the installation, and whether or not they actually understood it. Some of these are given below.

I liked the video, but wasn't very sure what the people were doing.

John Barr, Glasgow

Really interesting – needed to ask questions – loads of information.

Christine Lyons, Balmore.

Very good and cool !

Johnny Lyons, Balmore.

Minimalist – but enough.

Susan Jane-Parr, Glasgow.

Fascinating – I'll never walk past a ploughed field again.

C. Reynolds, Glasgow.

A forum for fieldwalking

The installation tried to educate and create a sense of place by describing the formation and creation of a lithic scatter in an artificial place. Ideally, teaching people about the time depth of the landscape and making them aware of the time-depth of the landscape is more suitable in the landscape itself through fieldwalking.

The creation of museums which put the emphasis on local people and activities rather than displays of artefacts could incorporate such a concept. To finish this thesis, a quote will be given which describes this concept in more detail. It seems to sum up what has been put forward throughout this thesis. It would be worthwhile basing such an institution (in the simplest sense) on activities such as fieldwalking and the creation of locality.

> An ecomuseum is an instrument conceived, fashioned and operated jointly by a public authority and a local population. The public authority's involvement is through the experts, facilities and resources it provides; the local population's involvement depends on aspirations, knowledge and individual approach.

It is a mirror in which the local population views itself to discover its own image, in which it seeks an explanation of the territory to which it is attached and of the populations that have preceded it, seen either as circumscribed in time or in terms of the continuity of generations. It is a mirror that the local population holds up to its visitors so that it may be better understood and so its industry, customs and identity may command respect.

It is an expression of man and nature. It situates man in his natural environment. It portrays nature in its wildness, but also as adapted by traditional and industrial society in their own image.

It is an expression of time, when the explanations it offers reach back before the appearance of man, ascend the course of the prehistoric and historical times in which he lived and arrive finally at man's present. It also offers vistas of the future, while having no pretensions to decision-making, its function being rather to inform and critically analyse.

It is an interpretation of space - of special places in which to stop or stroll.

It is a laboratory, in so far as it contributes to the study of the past and present of the population concerned and of its environment and promotes the training of specialists in these fields, in co-operation with outside research bodies.

It is a conservation centre, in so far as it helps to preserve and develop the natural and cultural heritage of the population.

It is a school, in so far as it involves the population in its work of study and protection and encourages it to have a clearer grasp of its own future.

This laboratory, conservation centre and school are based on common principles. The culture in the name of which they exist is to be understood in its broadest sense, and they are concerned to foster awareness of its dignity and artisitic manifestations, from whatever stratum of the population they derive. Its diversity is limitless, so greatly do its elements vary from one specimen to another. This triad, then, is not self-enclosed: it receives and it gives.

Rivière, Georges Henri 1985.

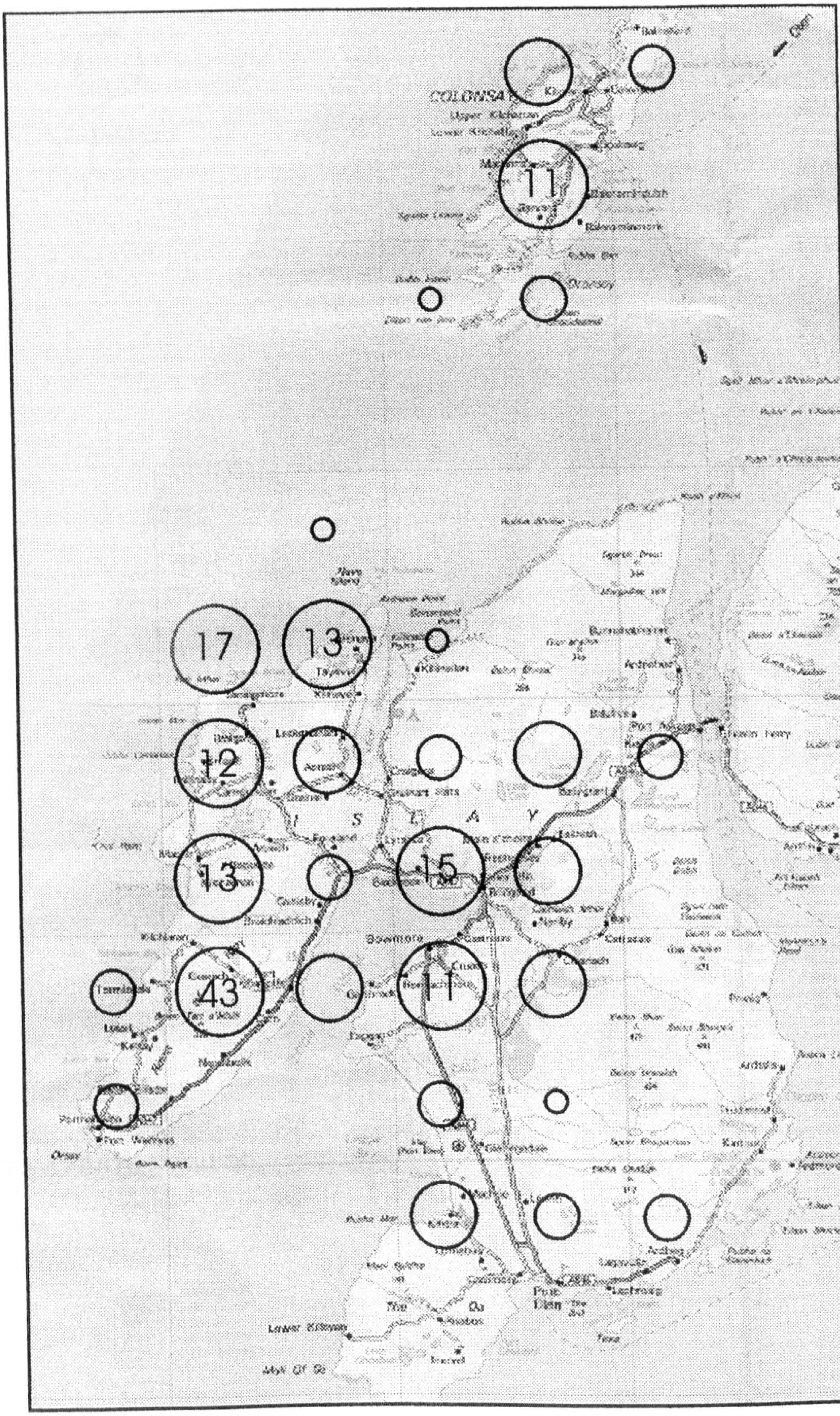
Appendix one

Map sheets showing distribution of scatters

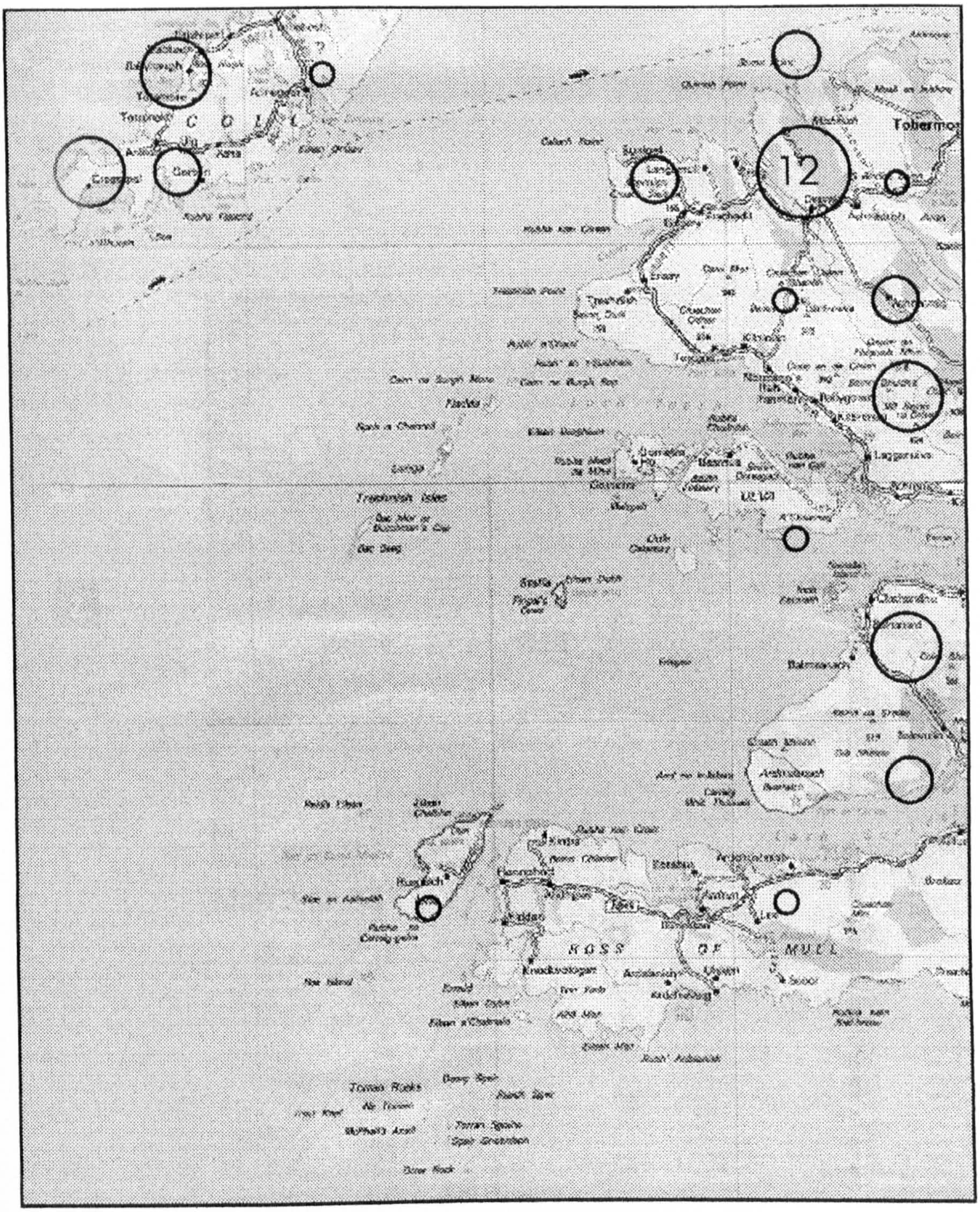
Reference list to map sheets

Map number	*Bottom left hand grid square*	*Area covered*
1	NR14	Islay and Colonsay
2	NM10	West Mull and Coll
3	NL92	Tiree
4	NR50	South Kintyre
5	NR54	North Kintyre and Jura
6	NM50	East Mull and Morvern
7	NW92	Luce Bay
8	NW98	Girvan and South Arran
9	NR94	Cowal and North Arran
10	NM90	Loch Awe
11	NX32	Wigtown Bay
12	NX38	Loch Doon and Kilmarnock
13	NS34	City of Glasgow
14	NN30	Stirling
15	NX72	Dumfries
16	NX78	Sanquar
17	NS74	Falkirk
18	NY12	Annan

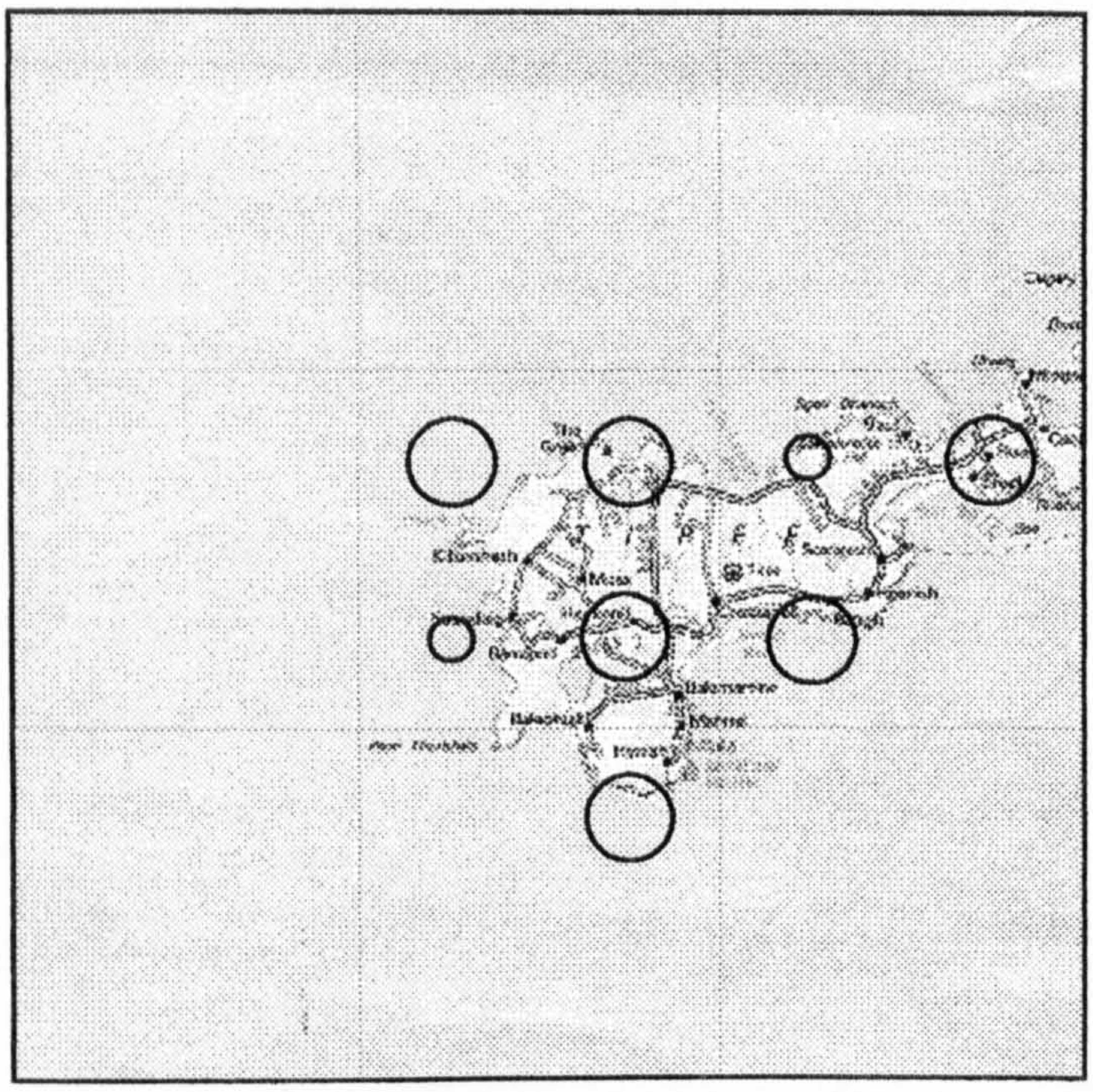
19	NY18	Innerleithen
20	NT14	City of Edinburgh
21	NO10	City of Dundee
22	NY58	Jedburgh
23	NT54	East Lothian
24	NO50	Arbroath
25	NT94	St Abbs



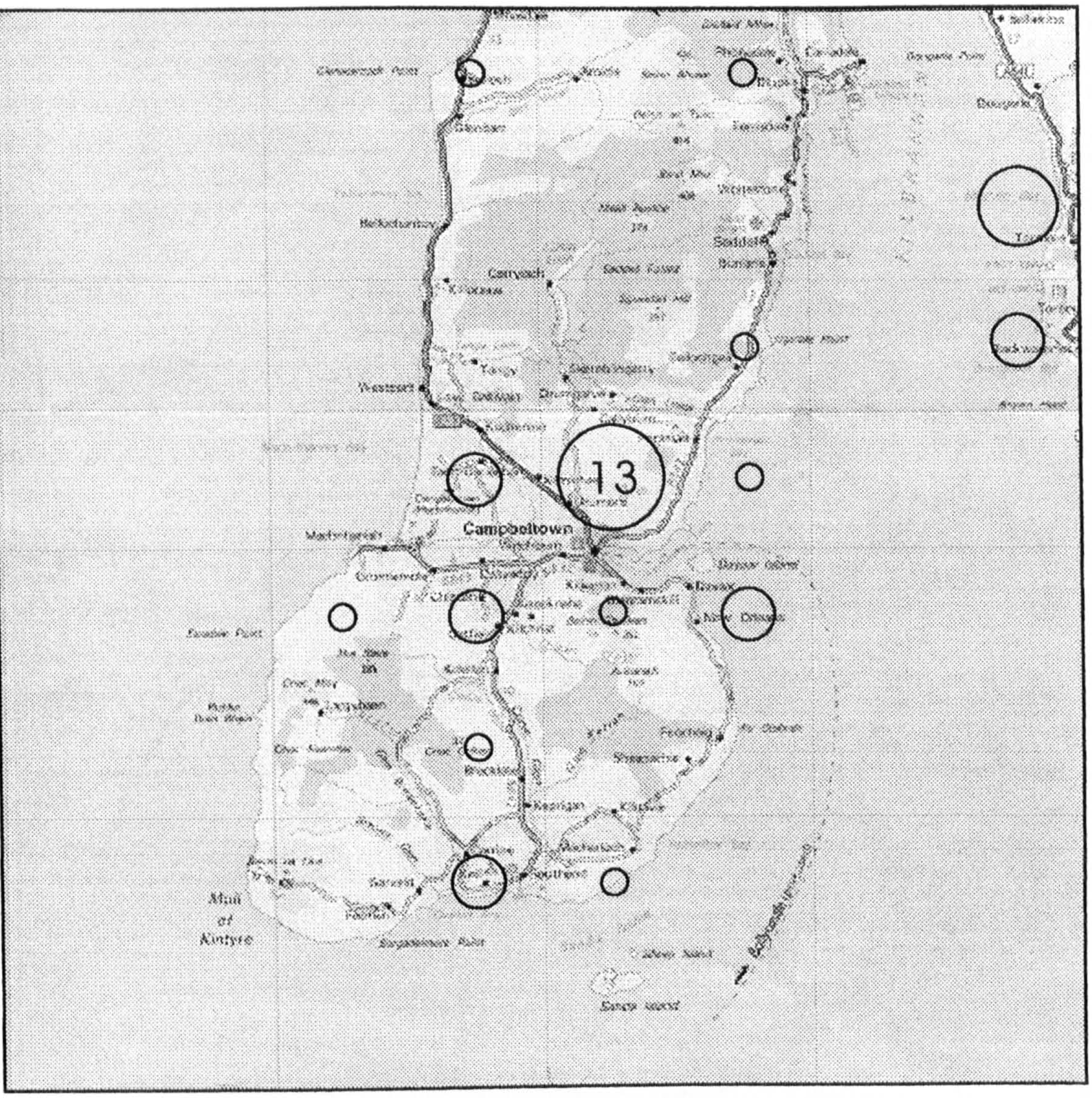
Map 1 NR14 Islay and Colonsay



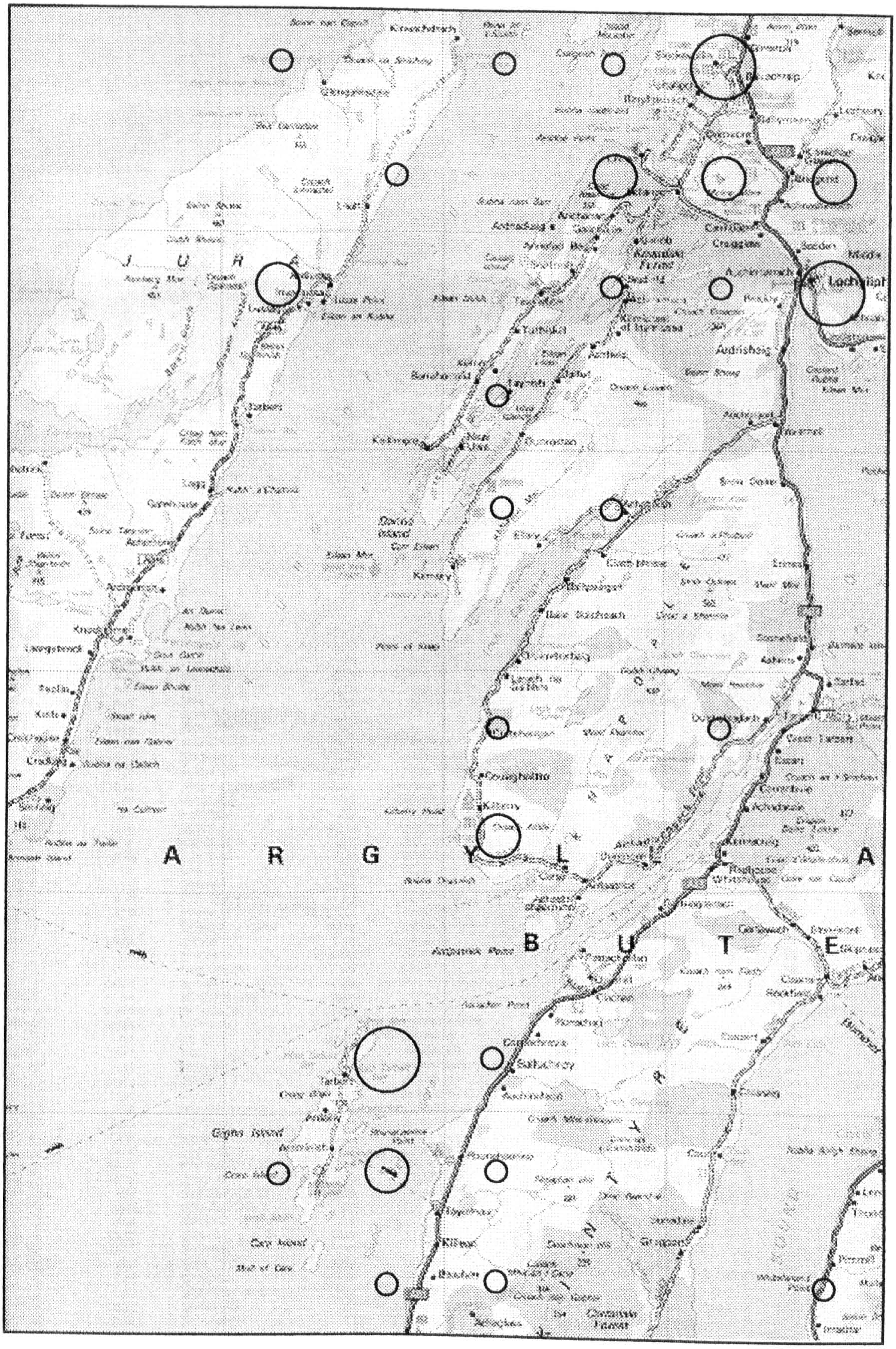
Map 2 NM10 West Mull and Coll



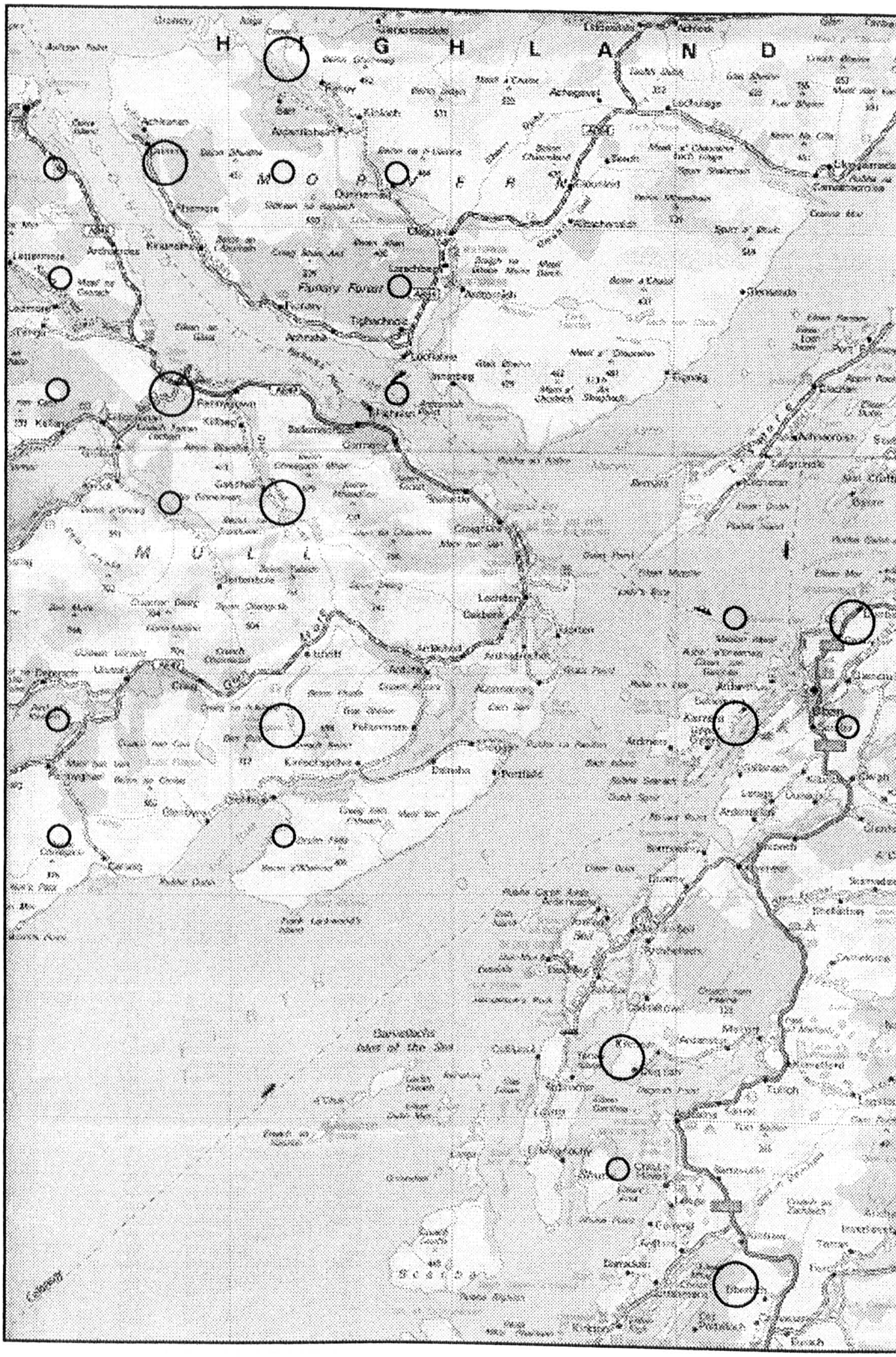
Map 3 NL92 Tiree



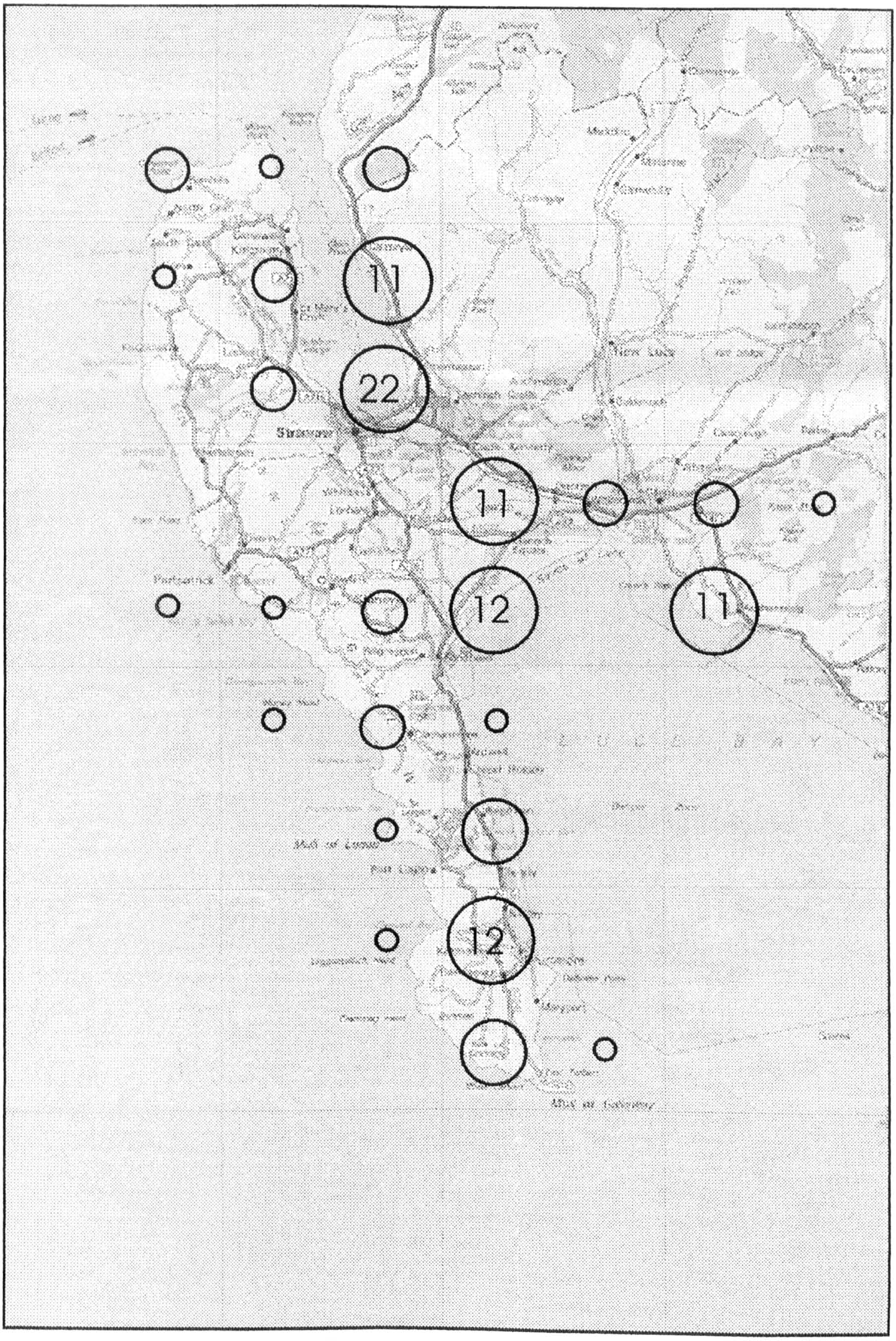
Map 4 NR50 South Kintyre



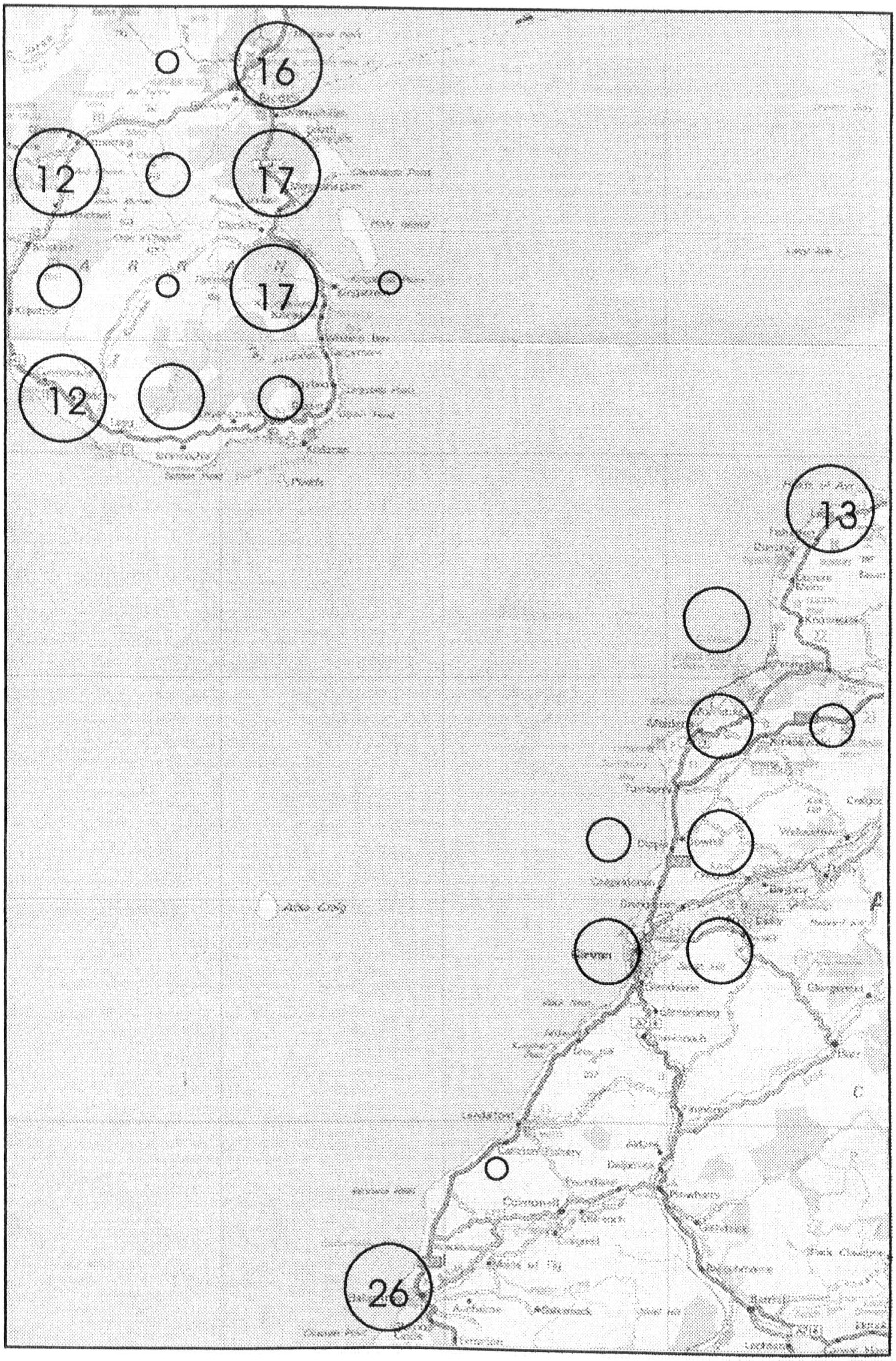
Map 5 NR54 North Kintyre and Jura



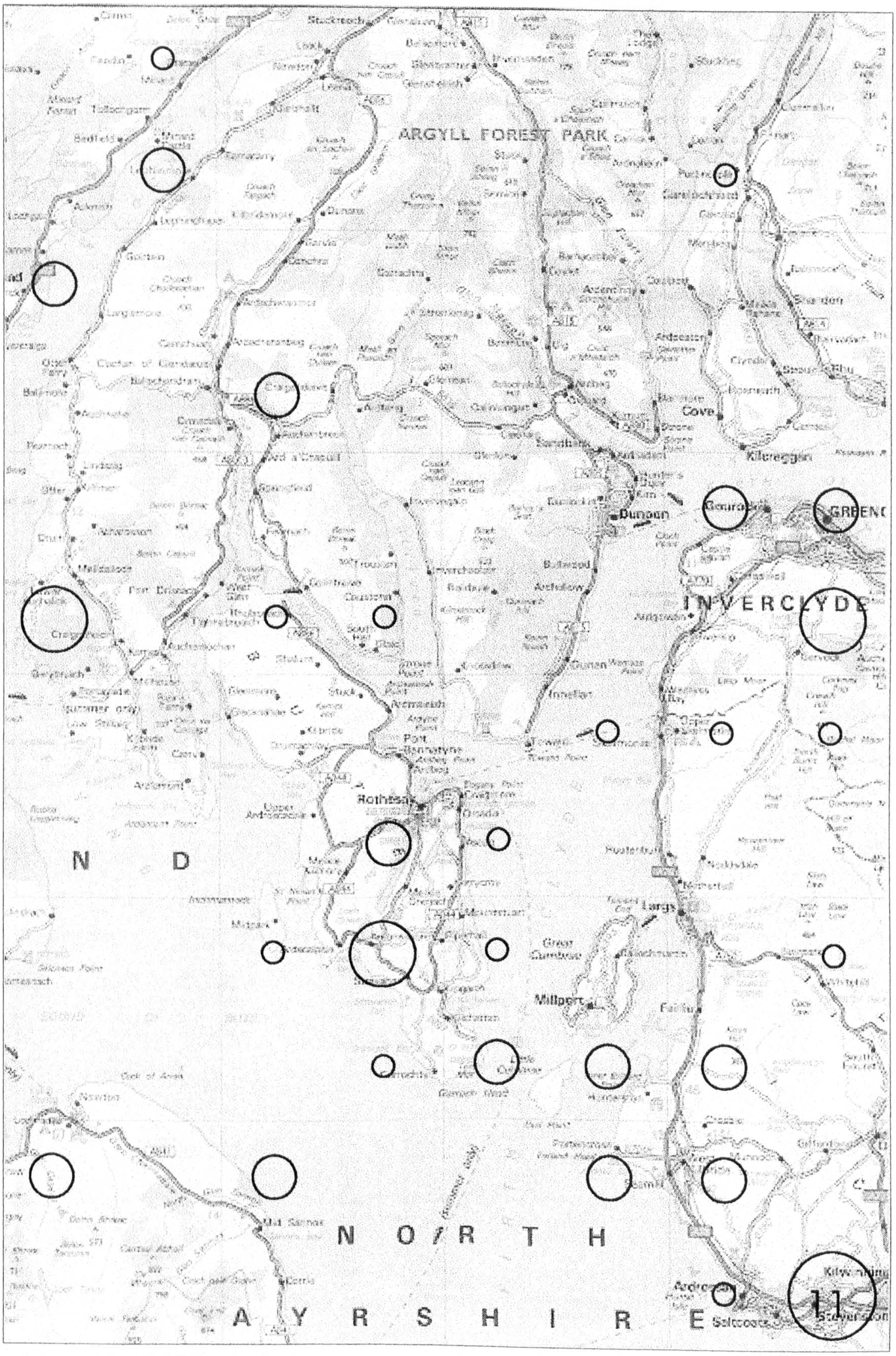
Map 6 NM50 East Mull and Morvern



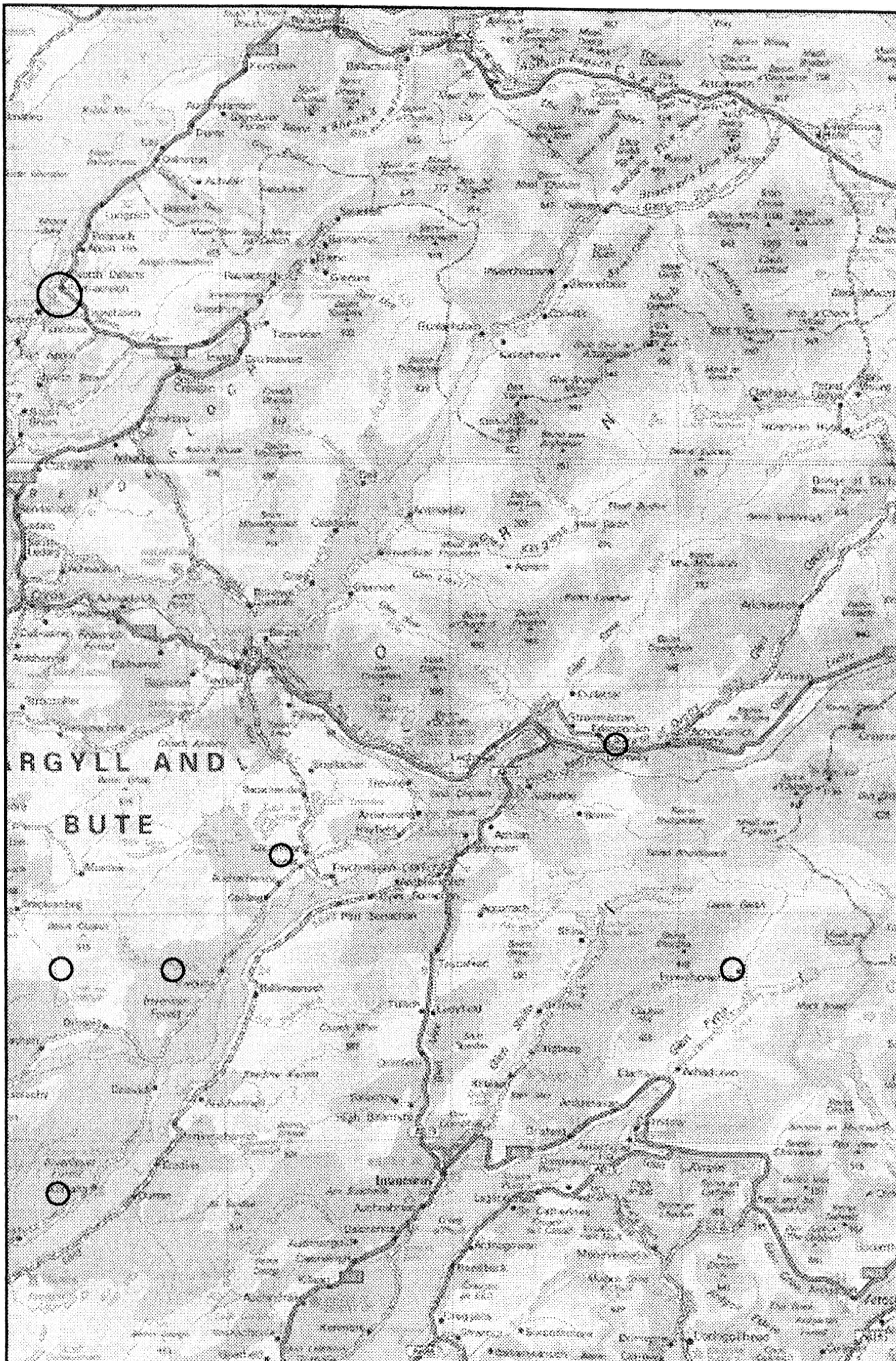
Map 7 NW92 Luce Bay



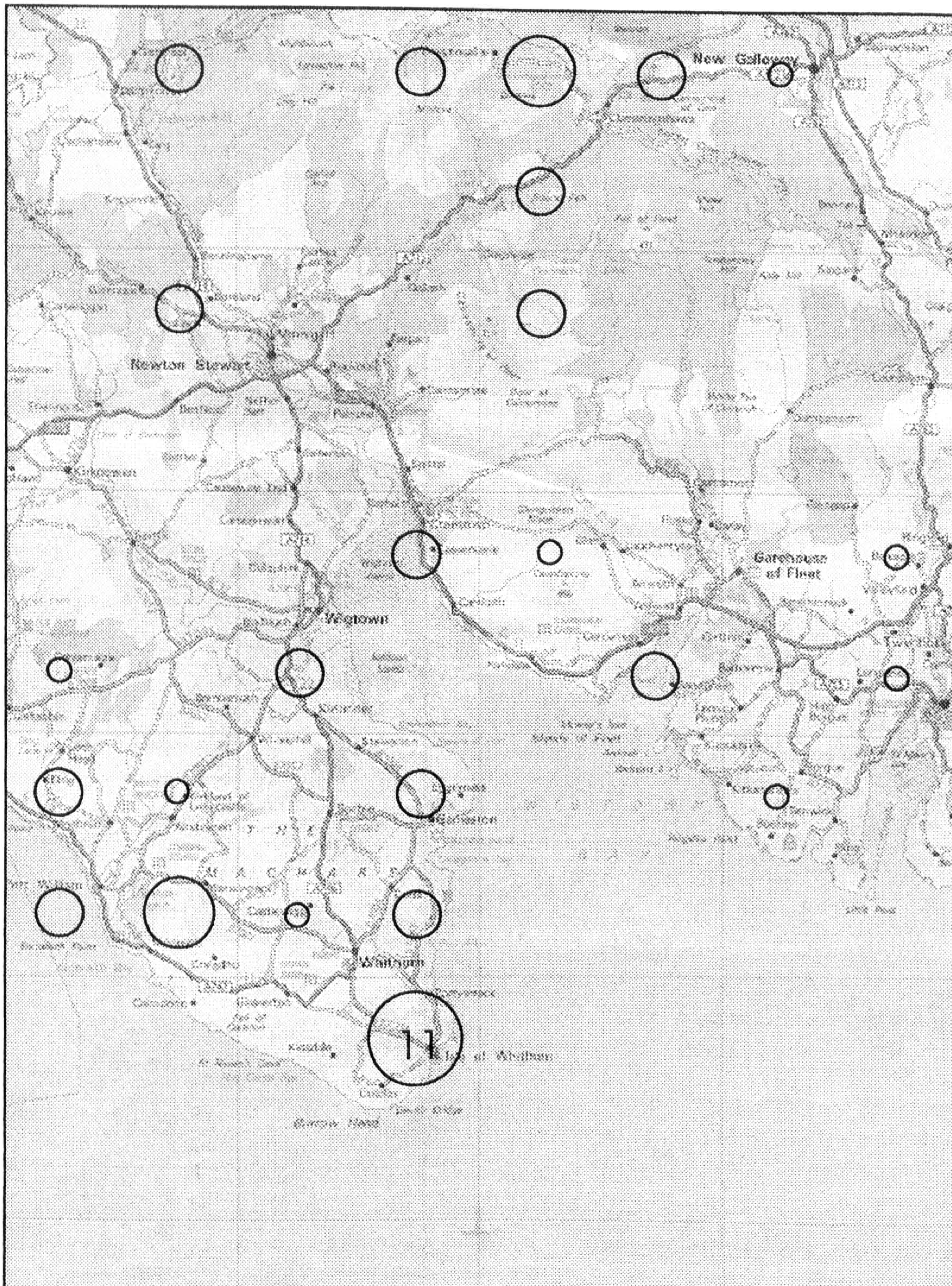
Map 8 NW98 Girvan and South Arran



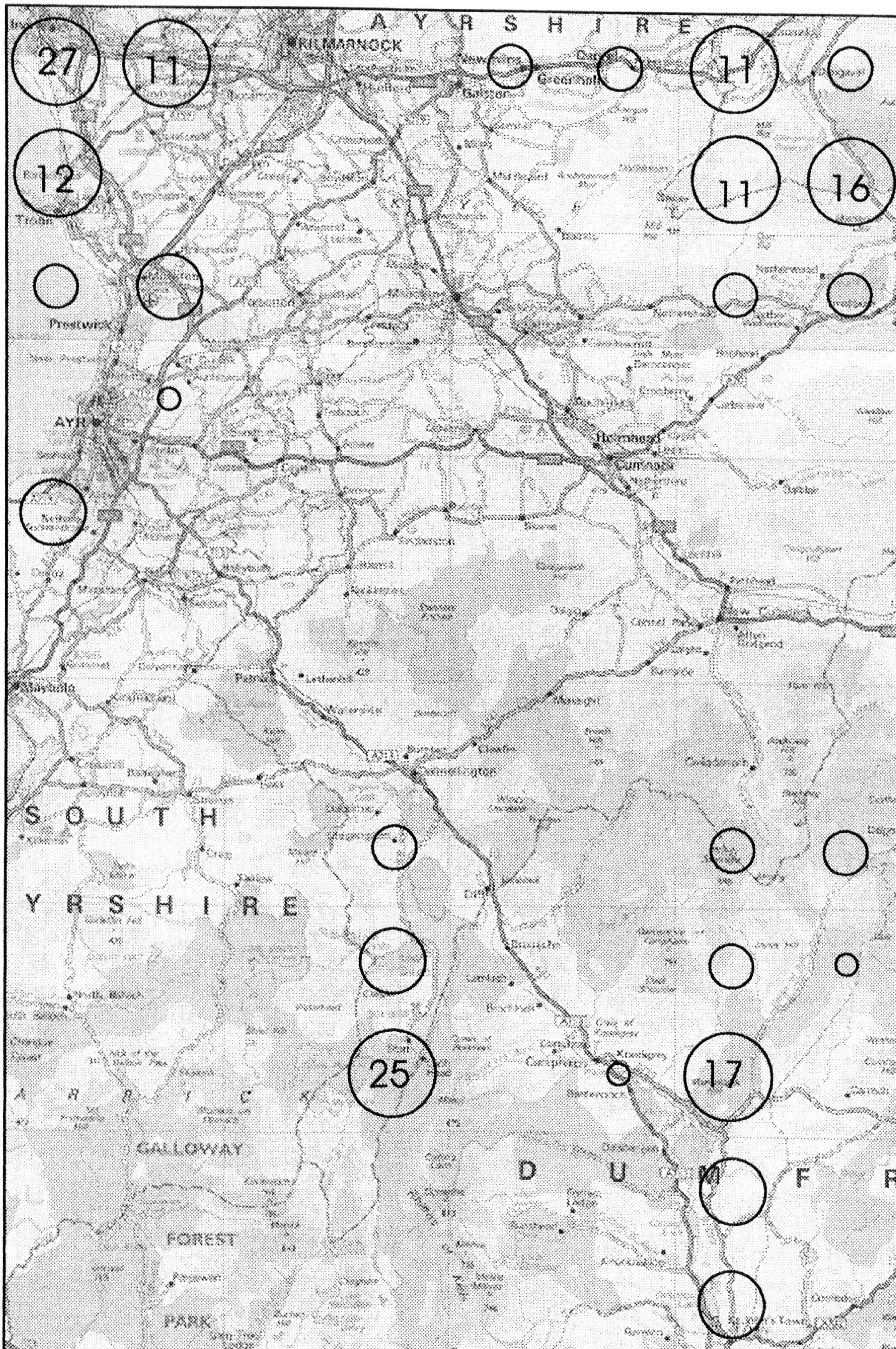
Map 9 NR94 Cowal and North Arran



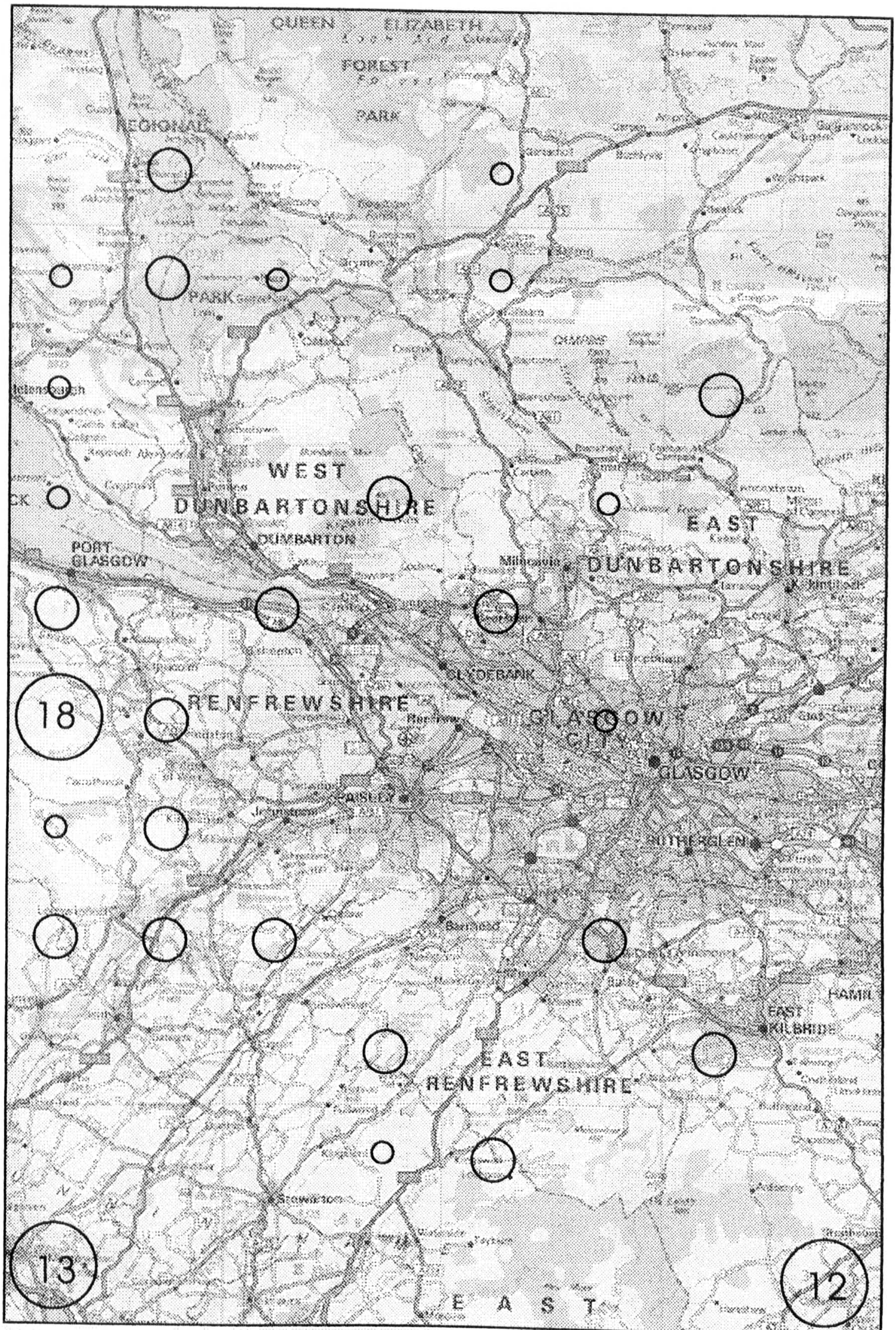
Map 10 NM90 Loch Awe



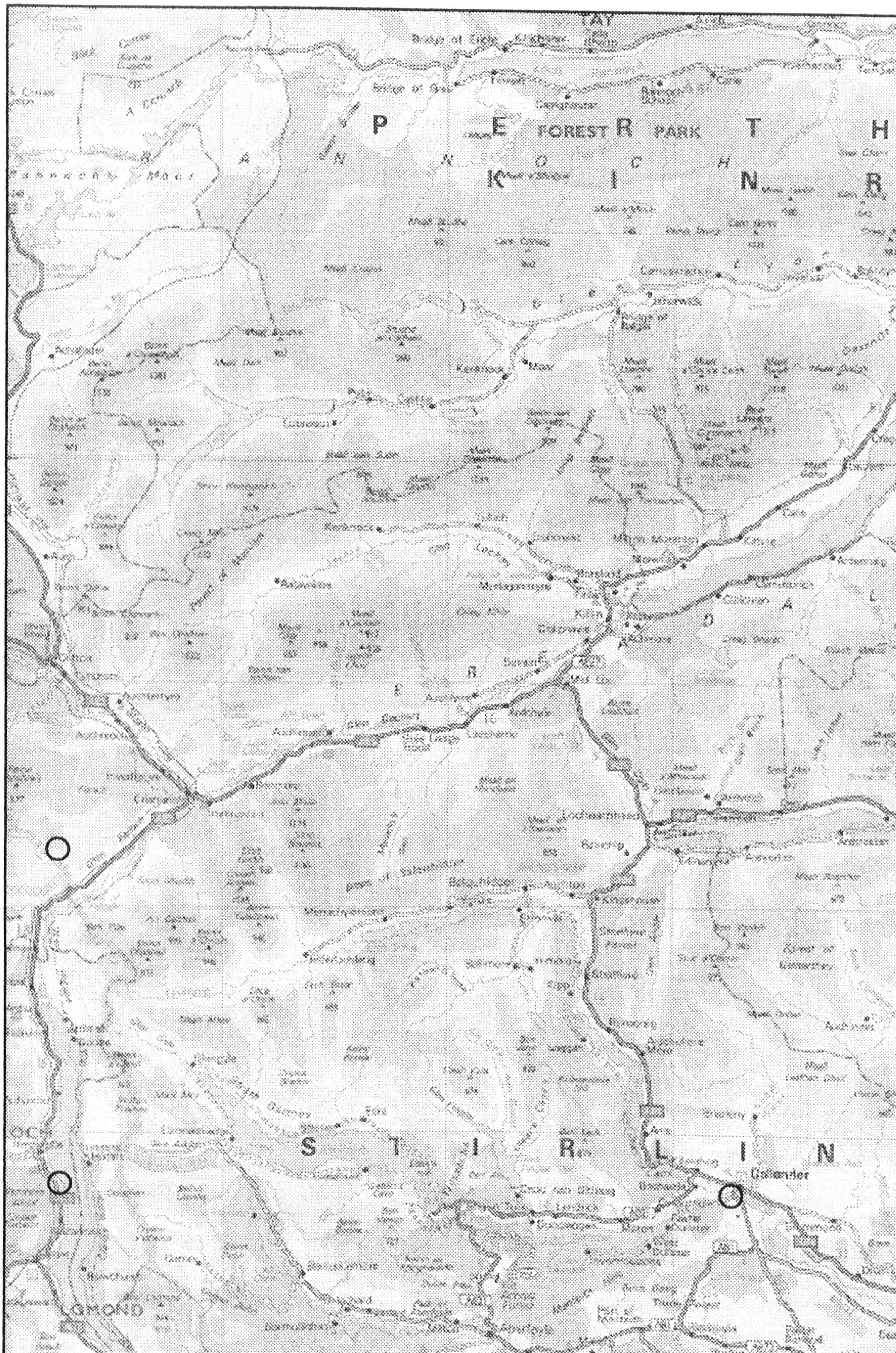
Map 11 NX32 Wigtown Bay



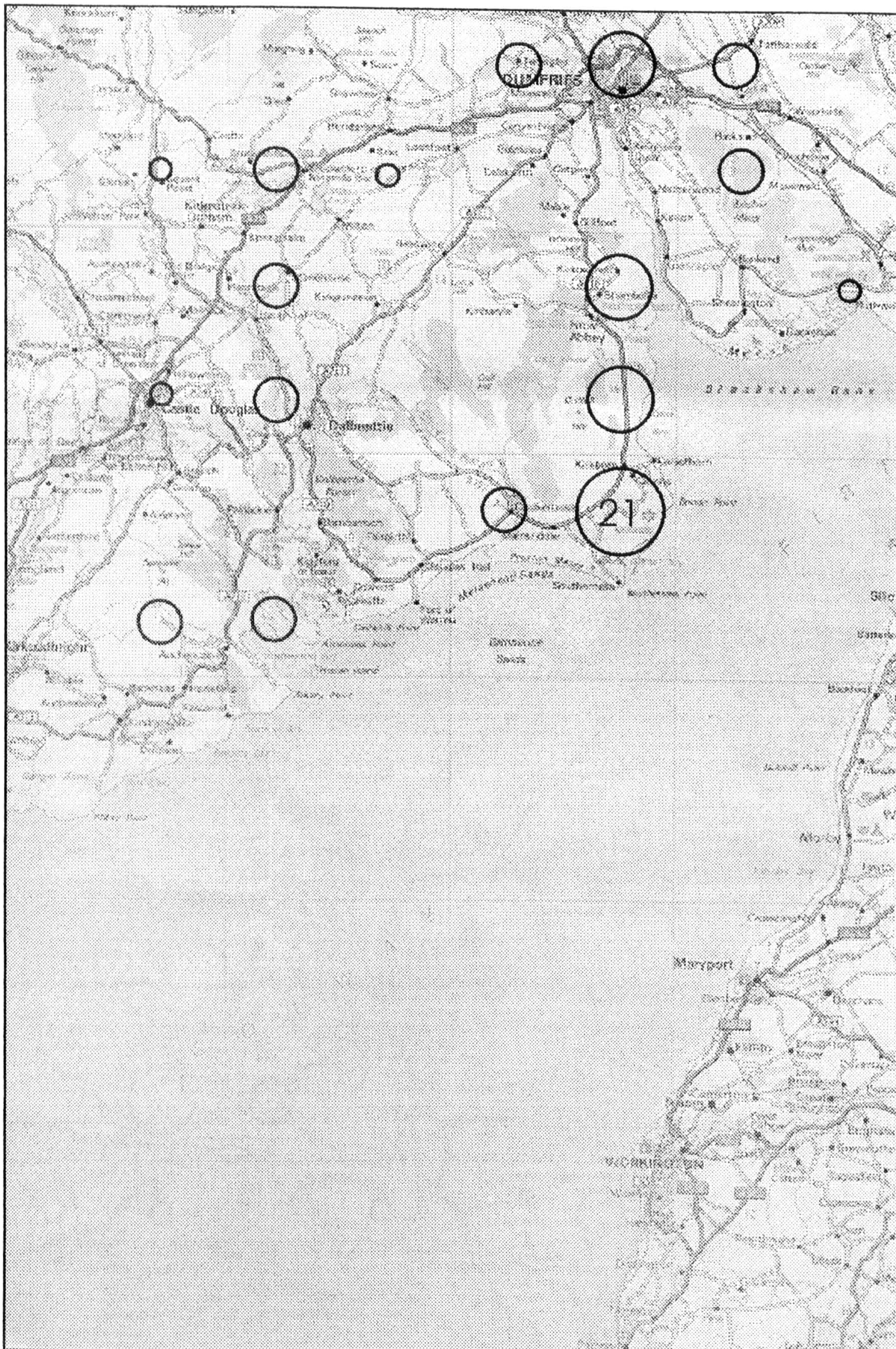
Map 12 NX38 Loch Doon and Kilmarnock



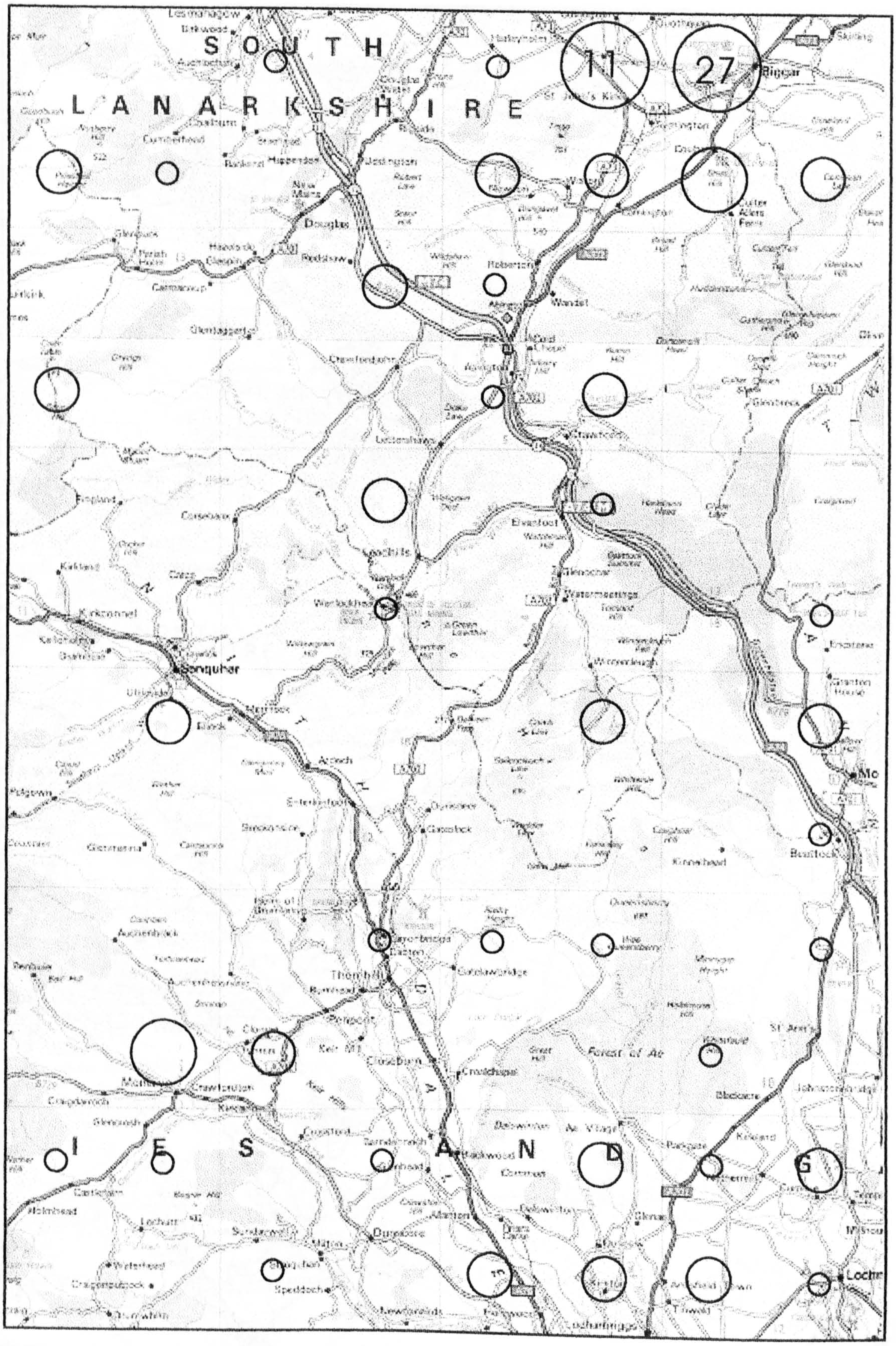
Map 13 NS34 City of Glasgow



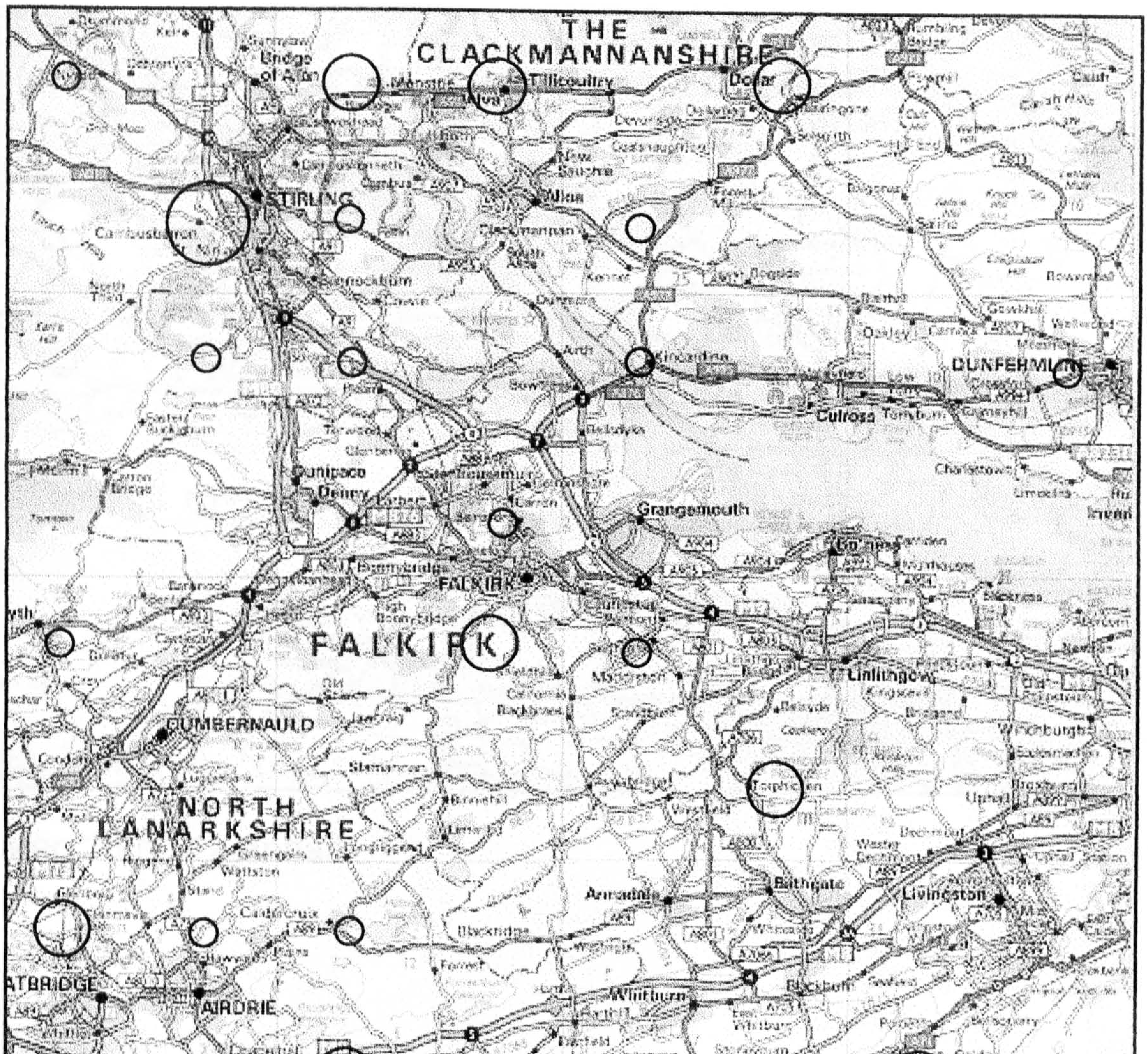
Map 14 NN30 Stirling



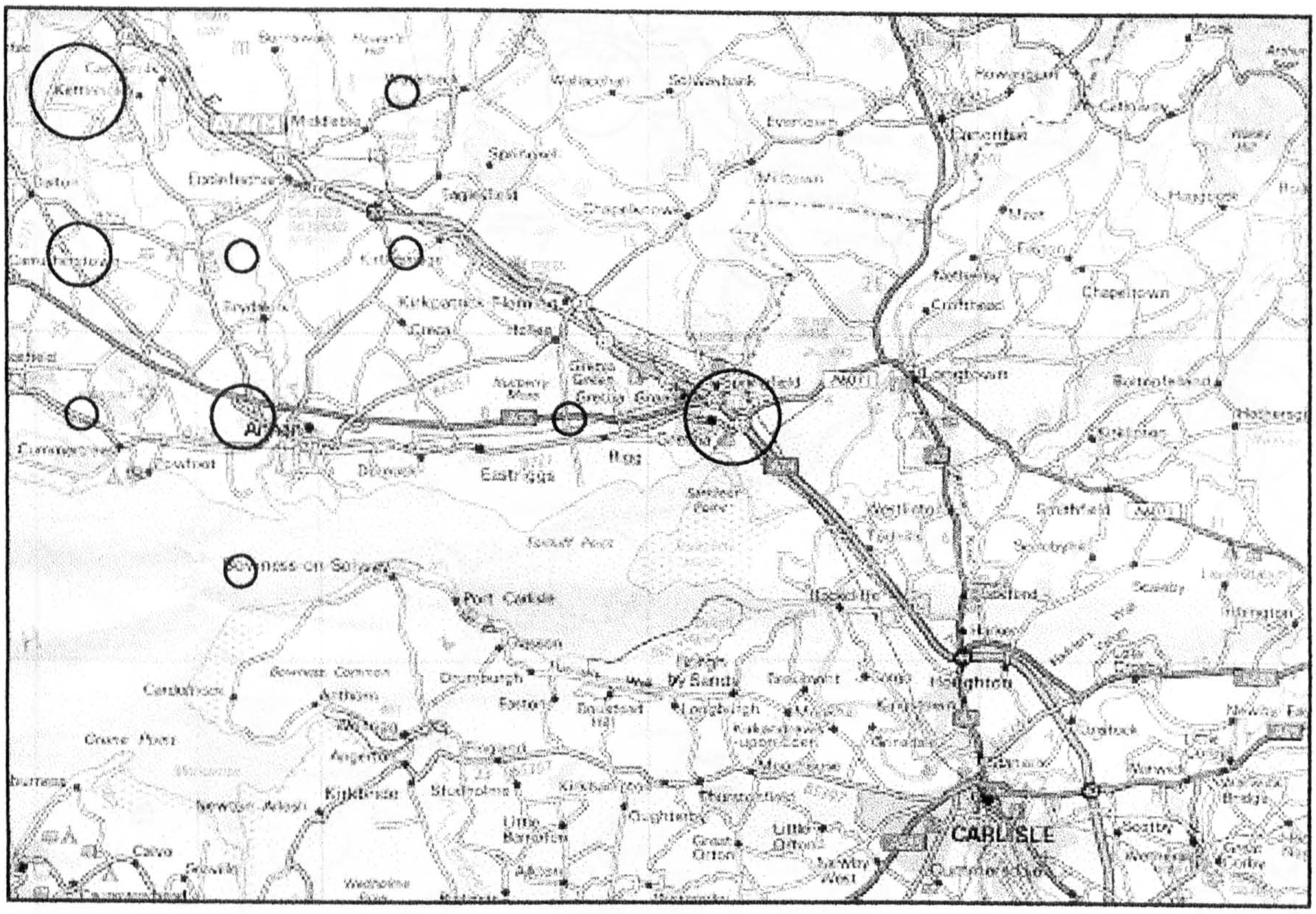
Map 15 NX72 Dumfries



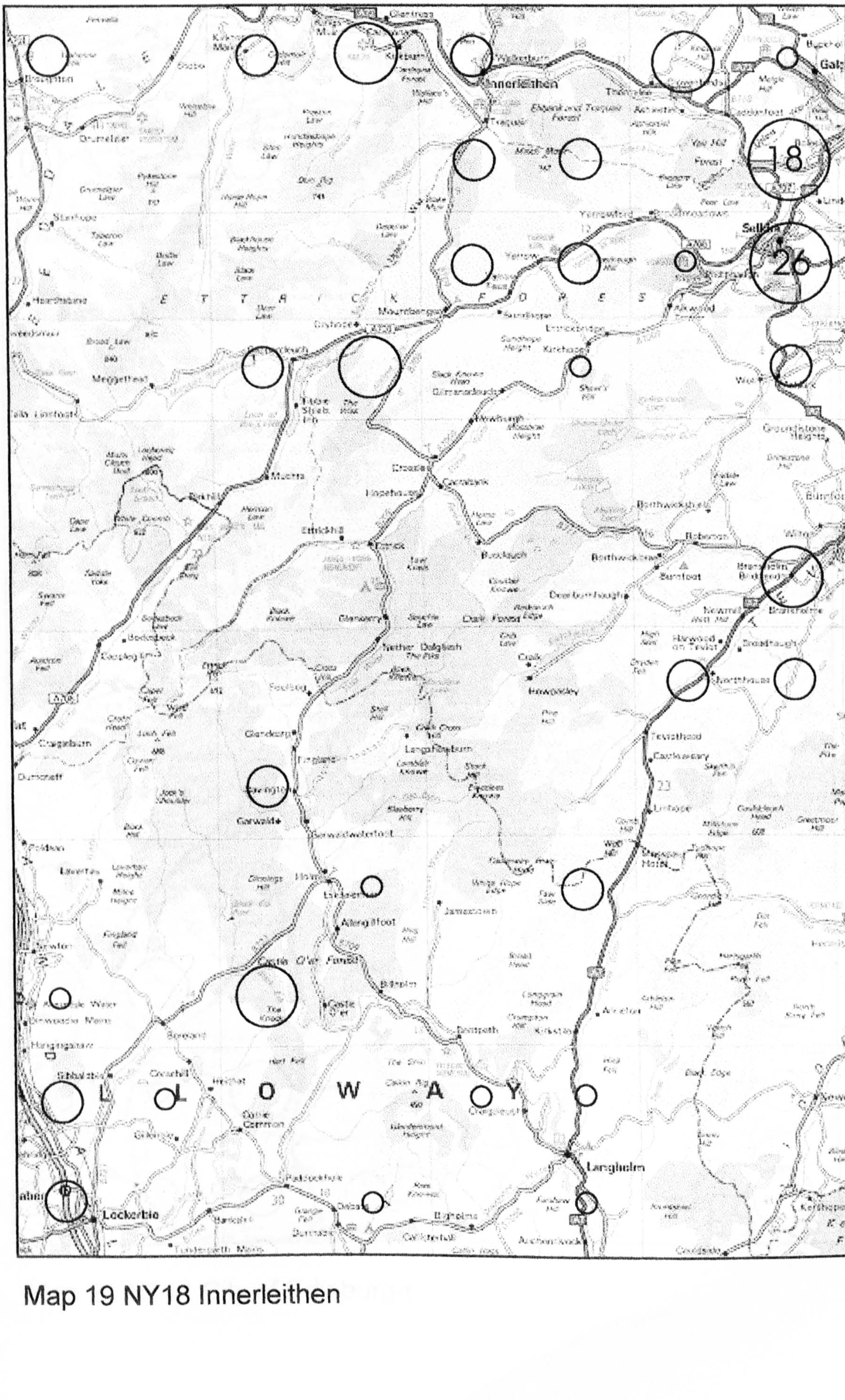
Map 16 NX78 Sanquar



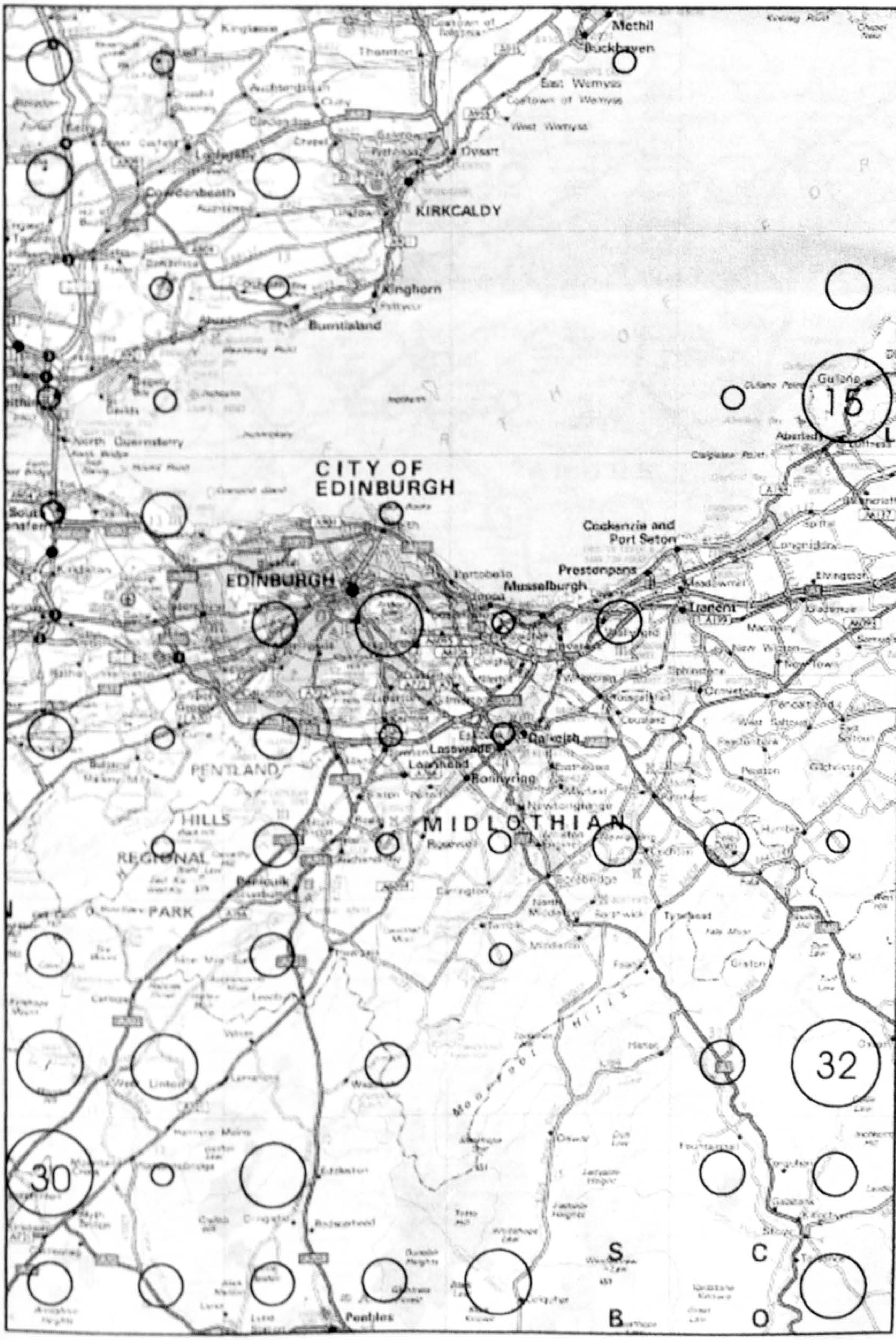
Map 17 NS74 Falkirk



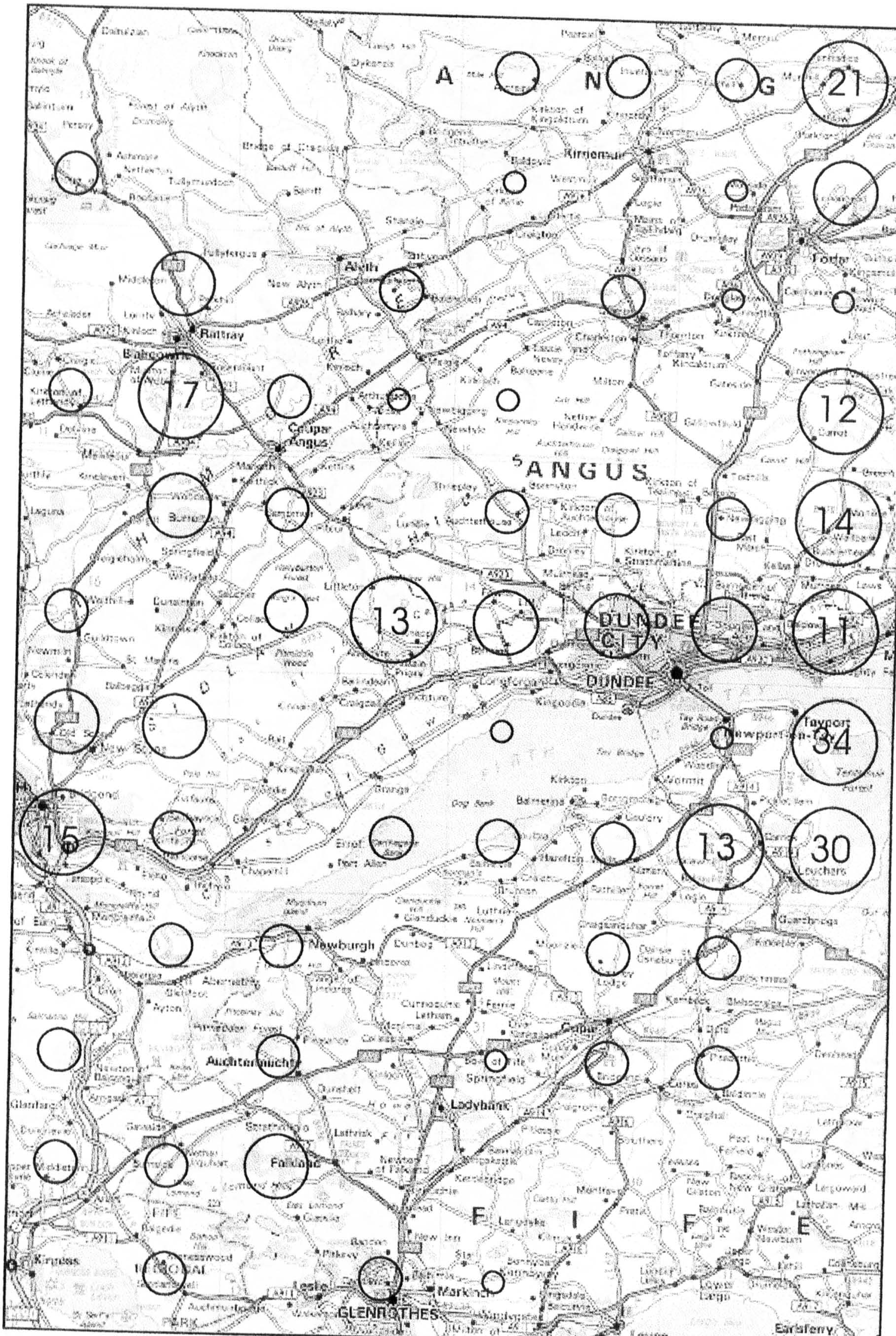
Map 18 NY12 Annan



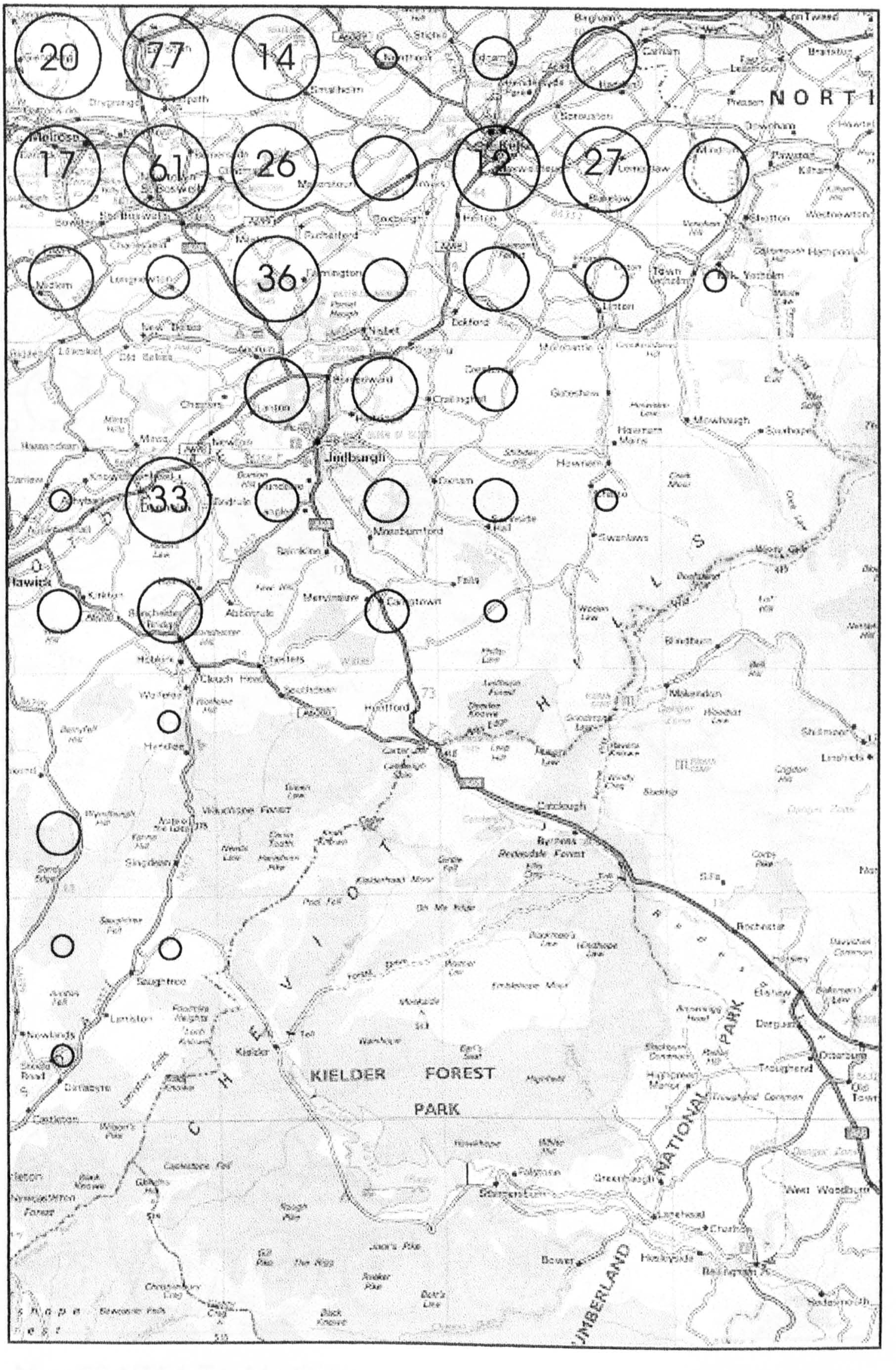
Map 19 NY18 Innerleithen



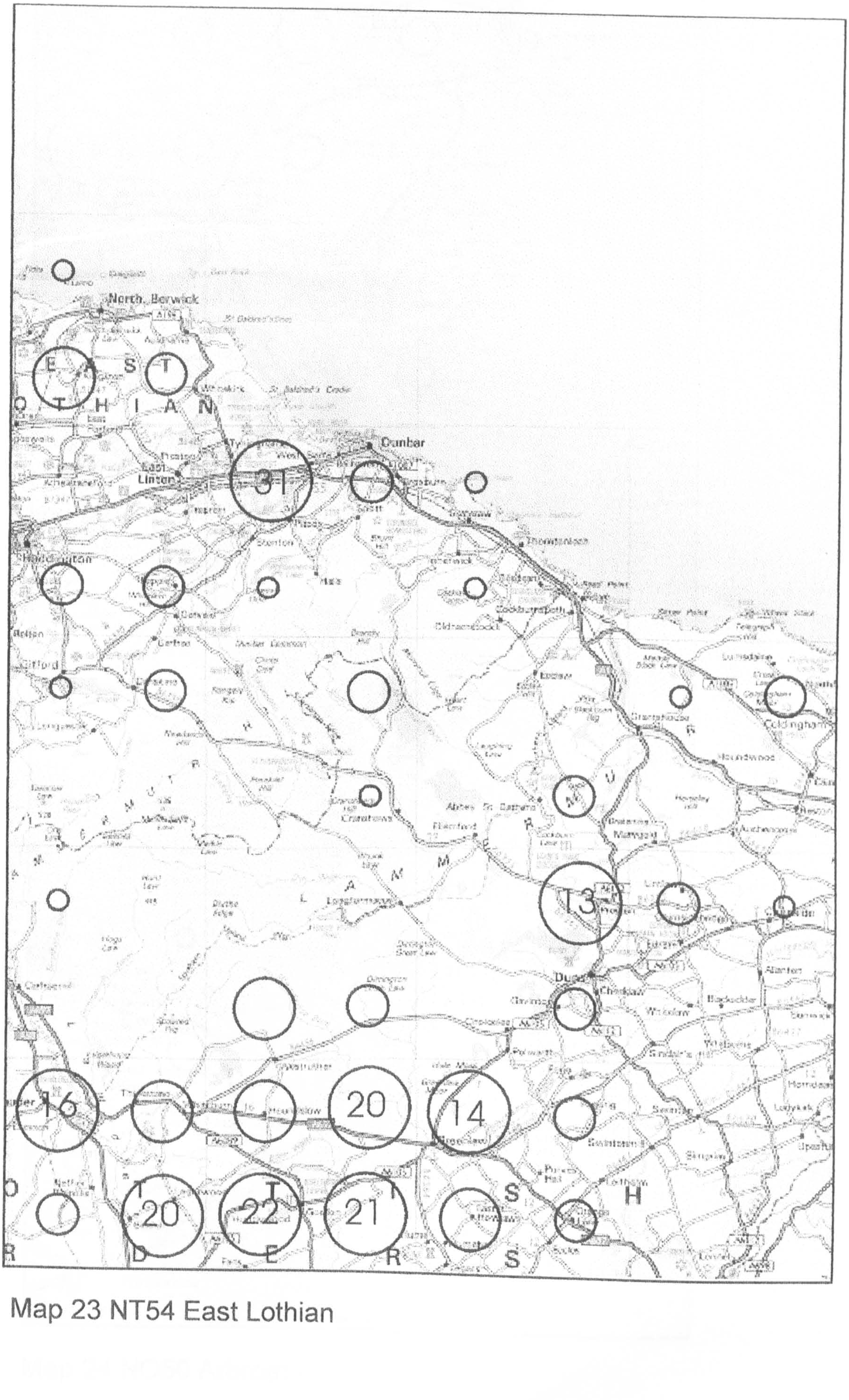
Map 20 NT14 City of Edinburgh



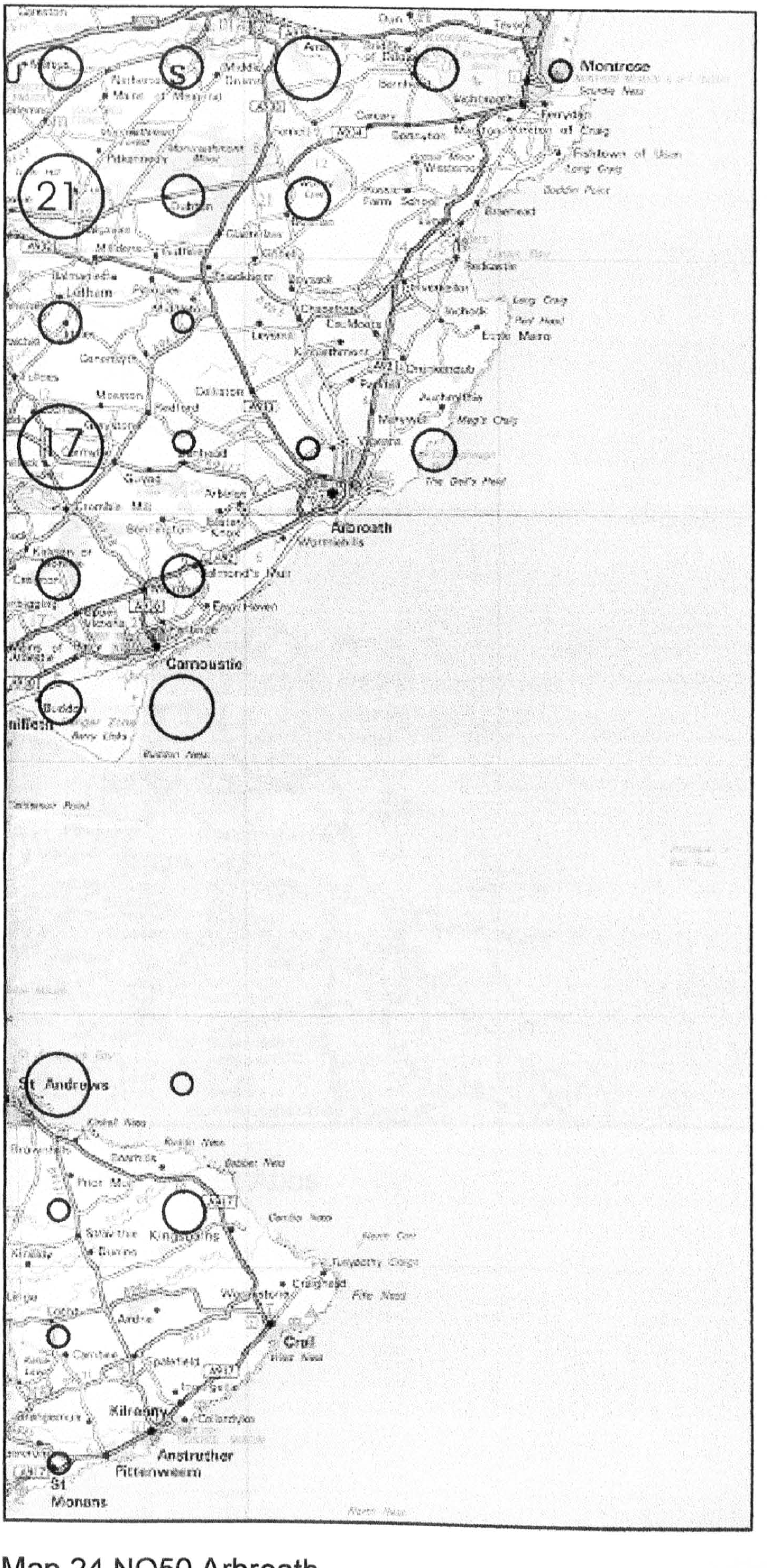
Map 21 NO10 City of Dundee



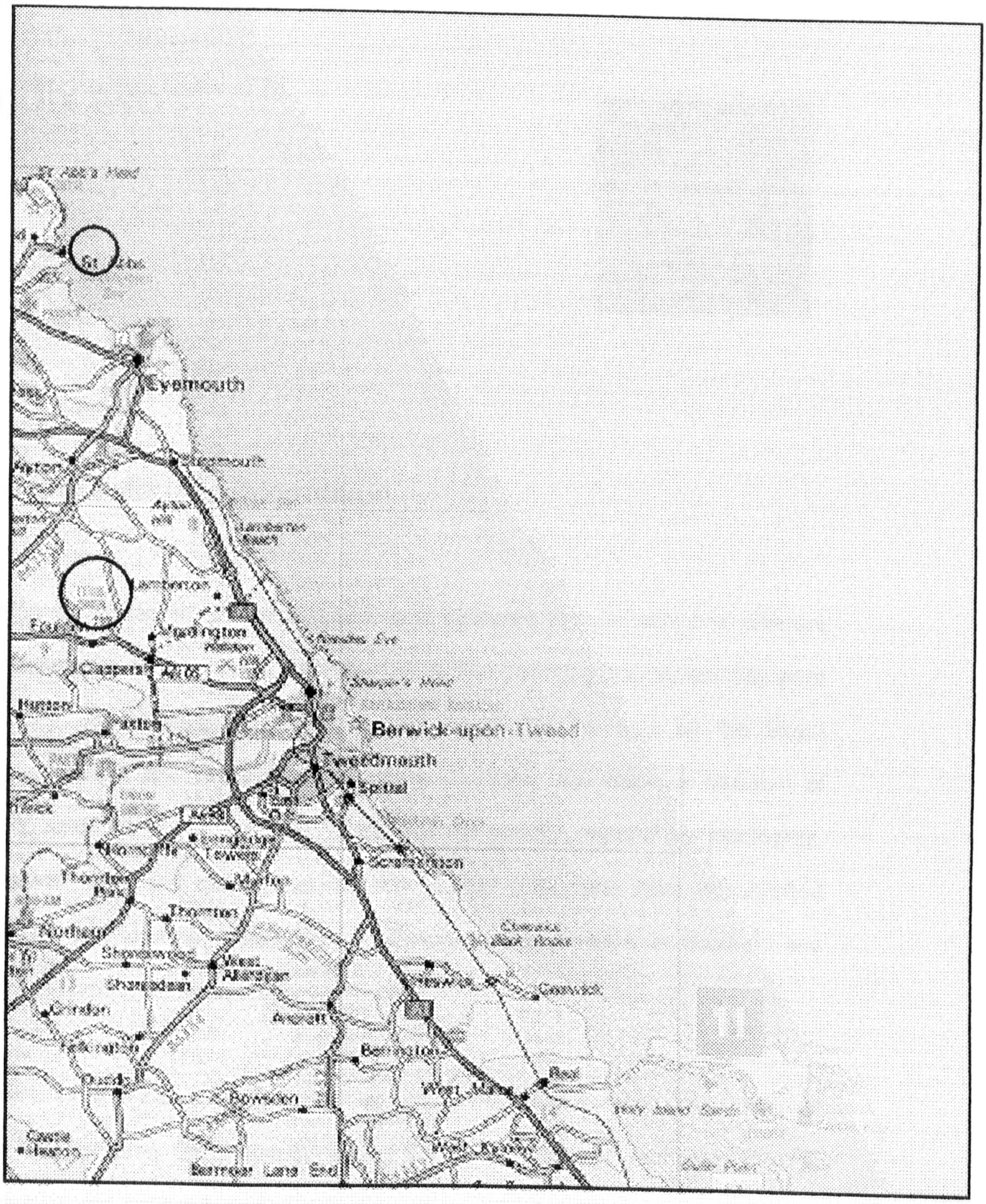
Map 22 NY58 Jedburgh



Map 23 NT54 East Lothian

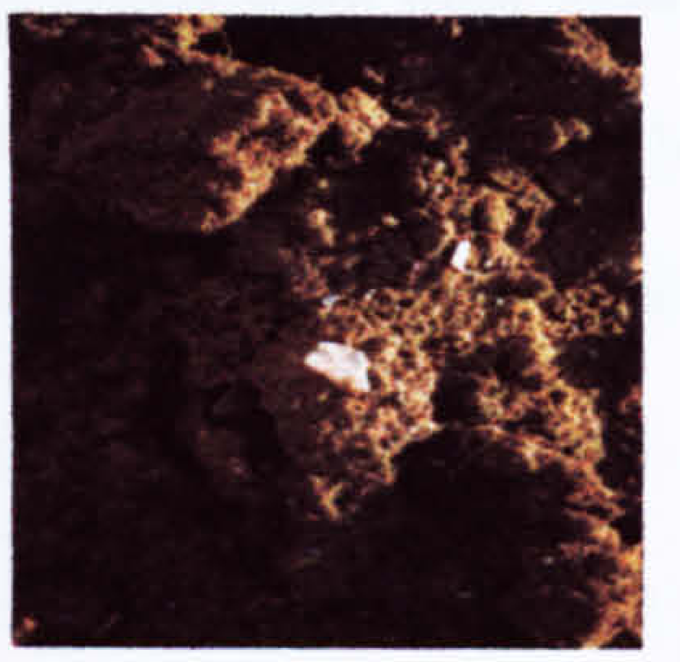


Map 24 NO50 Arbroath



Map 25 NT94 St Abbs

Appendix two



Sources of the database information

The information subsumed within the database was collected from a variety of different sources over the course of the projects duration. The largest and most obvious sources were consulted initially, these being: the National Monuments Record, held by the Royal Commission on Ancient and Historic Monuments of Scotland; the National Museum of Scotland, which holds the largest collection of lithics in the country; regional archaeologists, who hold regional sites and monuments records; rescue units, who have unpublished reports; and the main journals, these being Discovery and Excavation in Scotland and Proceedings of the Society of Antiquaries.

Local museums were synchronously consulted, as were archaeological and historical organisations and societies. Consequently, less obvious sources were discovered through amateur collection and fieldwork undertaken through an affiliation to a local museum or society. This list expanded as private collectors were contacted, and in some areas a network of amateur involvement was apparent.

The large volume and widespread nature of sources investigated reflects the diversity within archaeology as a subject, being undertaken and recorded by an array of different institutions, societies and persons at many different levels of intensity. The task of compiling a database such as the Lithic Scatters one was large, and this can be seen by the number of sources consulted. It is very likely that there are many known lithic scatters which have not been an amateur capacity, and by farmers and walkers who have uncovered lithics from their local area, or who have inherited collections. An appeal was sent out via local newspapers to try and encourage private collectors and enthusiasts to reveal the whereabouts of their collections and this was met with great success.

A gazetteer of all sources contacted follows after this initial discussion of each source group.

National Monuments Record

This source was the initial one investigated as it holds information on the majority of known archaeological sites and monuments in Scotland. The database used by the NMR is compatible with the software used by this project, and so transfer of information was fairly easy. Unfortunately searching for specific categories of object (i.e. lithic scatters) on the NMR database is slightly awkward as it operates on a 'key-word' basis, and lithic scatters have been entered into the system under a number of various descriptive terms. The easiest way to extract information on scatters was therefore to do a search using a number of variable terms.

The majority of the information was contained in 'report' fields which ran as a length of text. This field has been added to the database for reference. The text had to be broken down into the specific fields which are used by the Lithic Scatter database. The only way to do this was to extract the details manually for each site by reading the text and extracting the relevant information for each field.

The assimilation of this data formed the back-bone of the Lithic Scatter Database, and further information added subsequently has acquired a similar form.

National Museum of Scotland

The museum catalogue, which spans from 1845 to the mid 1970s, has thousands of entries which are housed within the museum. Many of these are from specific private collections which have been donated to the museum since the 19th century. All flint and flaked lithic assemblages which were not from excavated material were entered into the database, and subsequently cross-referenced with information already inputted from the NMR. The post 1970 museum acquisitions were tracked down by reference to various box files and the museums computer database, with most recent treasure trove items being easily collected from succinct lists.

The National Museums journal, the Proceedings of the Society for Antiquaries of Scotland, was also cross-checked with the catalogue, as further information may have been recorded in the 'donations to and purchases from' section. As one might expect the information tallies very closely. The more venerable editions often contain a 'notice' or article in addition to donations made by various members, which give details of findspots otherwise unmentioned in the donations section. Sadly the notices fade away and by about 1880 are very rare.

Local Museums

The Kelvingrove and Hunterian catalogues were searched, with the latter holding most information on surface lithic scatters, especially from South and Central Scotland. All relevant information was entered into the database, with duplicates deleted subsequently.

All the smaller, local museums (just over 60 in all) were contacted within the first year of the project (1995), and the response was very successful. Relevant catalogue entries were inputted, with many museums having large amounts of unprovenanced data, or no lithic material at all. In some cases local museums were visited as catalogues were large. It also proved useful to have a look at assemblages in person to cross reference brief catalogue entries. Depending on the state of the catalogues, the amount and quality of information was variable: some catalogues had a limited amount of information concerning the assemblage, and it proved difficult to uncover more explicit details as collections were lost or hard to find. In these cases the more explicit details concerning the site in question were not included in the database entries. This has resulted in some entries being less full than others.

The collections of artefacts within each of the local museums are usually directly related to the area in which the museums are situated e.g. the lithics in the Arran Heritage Museum are primarily from Arran, the assemblages within the Rothesay Museum on Bute are from the island of Bute, and so on. This reflects the amount of work done in each specific area by amateurs and locals who are connected to the museum in some form. Museums which seem to have little or no lithic assemblages are situated in areas which have had little fieldwork undertaken in them, or in some cases the lack of artefacts within these museums may be due to their proximity to the larger museums (those being the NMS in Edinburgh, and the Kelvingrove and Hunterian in Glasgow), which dominate the areas closer to the central belt.

Each area in south and central Scotland is covered in most respects by either a local museum or one of the larger ones. The largest collections of lithic scatters are split between the relevant local museums and larger ones. The vast collection of artefacts from Luce Bay are housed in Stranraer museum, Dumfries museum, the Hunterian and the National Museum in Edinburgh as are assemblages from the numerous river terraces of the south-west. The finds from around the upper Clyde area are divided between Biggar museum and Edinburgh, while collections from the west coast are dispersed between Campbeltown, Brodick, Rothesay, Port Charlotte and the Hunterian museums.

There are a large number of lithics from the Borders, the majority of which are in the National Museum in Edinburgh , with samples situated in Dumfries, Tweeddale, Selkirk and Hawick museums. All the finds from the Lothians are within the National Museum. There is a surprisingly small number of lithics from Fife, most of which again are to be found in Edinburgh, with some in Dunfermline and St Andrews. There are a limited number of finds from Stirling, housed in the NMS and Smith Institute, Stirling, and this is probably a reflection of the lack of fieldwork in the area.

Voluntary Sector & Individual Collectors

Local enthusiasts were usually contacted via local museums and/ or societies, and in some cases valuable information was uncovered through talking to these archaeologists, especially when private collections were hard to come by.

Archaeological and Natural History Societies

Many local societies were contacted, with other contacts and sources which may have information (these being private collectors or local museums) being suggested from these. No fieldwalking is being undertaken to any great extent by these societies (at the time of contact, 1995-1999), apart from the Kintyre Antiquarian and Historical Society, the Arran Antiquarian Society, the Buteshire Natural History Society, and the Lanarkshire and District Archaeological Society. Out of these, only the Arran Antiquarians and Lanark District Society are and have been involved in large scale fieldwalking programmes. The Arran Antiquarians have amassed a large collection which is currently housed in the Heritage Museum in Brodick. Fiona Gorman has been involved with the fieldwalking programme and the museum and society have built up close links with the local farmers and landowners on the island. Tam Ward has been organising the other large scale fieldwalking project in Clydesdale, with the Lanarkshire and District Archaeological Society. The fruits of their labours are well documented by Tam, and further prehistoric sites are being uncovered every year. The Lithics Project worked with this society on local excavations at Melbourne and Weston, and fieldwalking was undertaken in this area as part of the Lithic Scatters Project.

Regional Archaeologists

All the regional archaeologists were contacted before the reorganisation of the regions took place in April 1996. Strathclyde region has been divided into several parts, and these are now dealt with by the West of Scotland Archaeological Service (WOSAS). These organisations hold regional Sites and Monuments Records, containing information which is sometimes lacking on the NMR. Private collectors and individual researchers were also revealed through contacting these archaeologists.

Units and Researchers

Many of the units contacted had surprisingly little information to offer, save GUARD and AOC (Scotland). This may be due to the amount of recording which is undertaken by such units, and the lack of time available for disseminating information accumulated from many excavations and surveys. Current and more recent work and findings may also be confidential depending on the contracts taking place.

GUARD have worked on several sites which were discovered through surface scatter evidence. A few examples are Kirkhill in the Borders, Girvan on the west coast which has produced thousands of Mesolithic flints over several years and Garvald Quarry in Clydesdale which again has Mesolithic and Neolithic chert and flint tools. Units should automatically record what they find in official publications, such as DES, with a certain guarantee of completeness and it has therefore been possible to complete the records by this means.

Findings from work carried out for no commercial gain, but purely as research, has been more readily available. Steve Mithen has given details on the findings of the South Hebrides Mesolithic Project, and research by fellow students has also yielded data. Past papers by individuals such as Helen Mulholland (Tweed Valley), Kevin Edwards, Michael Ansell and Bridget Carter (South-west Scotland), and John Coles (South-west Scotland) to name a few has also been referred to and increased the resource. These sources lead onto the next category, that being journals.

Journals

The main journal in Scotland is the 'Proceedings of the Society of Antiquaries Scotland'. Information within this derives primarily from the NMS, and any new published data shown in the journal will inevitably be deposited in the NMR catalogue. As mentioned above, PSAS was cross referenced with the information held in the National Museum catalogues.

'Discovery and Excavation in Scotland' holds the bulk of information on fieldwork since 1954 , and data entry was simple due to its logical layout. The majority of this data is also in the NMR, although again, cross-referencing for duplicate entries was necessary In the Highlands and Islands it was found that plenty of sites mentioned in DES were not located elsewhere.

Many other journals have been consulted, which has been a relatively large task given that each volume was checked for any mention of scatters. There are numerous articles and books which have also been consulted in the search for any lithic scatters which may not be mentioned elsewhere. These are too numerous to list.

Museums

Bailey, Geoff/ Scott,	Keeper of Arch and Local	Falkirk Museums
Biddlecombe, Julie	Temp District Curator	Cunninghame Mus Services
Batey, Colleen	Curator	Kelvingrove Art Gallery and Museum
Boa, Valerie	Curator	McLean Museum and Art Gallery
Bradman , M S	Hon Curator	Crail Museum Heritage Centre
Brown, I	Curator	Selkirk Museum
Brownlee, Stuart	District Librarian	Cumnock and Doon Valley District
Chesters, Robin	Curator	The Almond Valley Heritage Trust
Collis, L	Museums' Curator	Dunfermline District Museum
Colton, Fiona	Curator	Hawick Museum and the Scott
Davenport, J	Curator	North Ayrshire Museum
Devereux, Dr	Curator	Stewartry Museum
Douglas-Home,	Curator	Hirsel Homestead Museum
Fortune, Susan	Branch Librarian	Public Library and Museum
Gorman , Fiona	Voluntary Archivist	Isle of Arran Heritage Museum
Hancock, Elizabeth	Keeper of collections	Hamilton Museum
Hannay, Rosemary	Curator	Tweeddale Museum, Chambers
Hunter, Jim	Curator	Dick Institute
Keppie, L	Curator	Hunterian Museum
King, Michael D	Curator	NE Fife District Museum Service
Macqueen, Eila	Museums Development	Campbeltown Museum
Pickin, John	Curator	Stranraer Museum
Ratchford, Siobhan	Museums Officer	Sanquar Tolbooth Museum
Selwyn, Susan M	Museum Curator	Strathkelvin District Museums
Sheridan, Alison	Assistant Keeper	National Museums of Scotland
Speirs, Anne	Hon Organising Secretary	Bute Museum
Ward, Tam	Archaeologist	Biggar Museum Trust
Waugh, Carolyn/	Museum Assistants	Cumbernauld & Kilsyth District
	Curator	Auchindrain Museum
	Curator	Brechin Museum
	Curator	Buckhaven Museum
	Curator	District History Centre & Baird Inst.
	Curator	Moffat Museum
	Curator	Weavers Cottage Museum

Private Collectors/Amateurs

Bell, Rae	Private Collector	Coldstream, Borders
Cormack, W F	Private Collector	Lockerbie, Dumfries and Galloway
Crawford, Mrs	Private Collector	Dalmally, Argyll and Bute
Cruickshank, J & C	Private Collectors	Selkirk, Borders
Elliot, Walter	Private Collector	Selkirk, Borders
Kennedy, D N Mr	Private Collector	Isle of Tiree, Argyll and Bute
Knox, Robert	Private Collector	Peebles, Borders
Macneill, Malcolm	Private Collector	Ayrshire
Malcolm , E (Mrs)	Private Collector	Dalmally, Argyll and Bute
McFadzean, H	Private Collector	Stirling
Newall, Frank	Private Collector	Dunoon, Argyll and Bute
Robb, T	Private Collector	Kelso, Borders
Robertson, Lena	Private Collector	Kelso, Borders
Truckell, A E	Private Collector	Dumfries, Dumfries and Galloway
Wilson, Paul	Private Collector	Melrose, Borders

Archaeological and Natural History Societies

Baney, Helen	Secretary	Dalmally History Association
Bickers, Valerie	Branch Leader	Largs and District Hist Soc
Binnie, Dr G A C	Librarian	Berwickshire Naturalists Club
Dodds, K (Mrs)	Convenor	Clarwood Heritage Trust
Douglas, Meg	Chairperson	Mull Hist Soc
Dunsmure, James	Executive Director	The Hebridean Trust
Elliot, Peter S		Hawick Arch Soc
Hastings, Andrew	Secretary	West Linton Hist Society
Hood, Frances		Kintyre Antiq and Nat
Kay, Margaret	Chairman	Lorn Archaeological and Hist Soc
Mathews, T	Hon Secretary	Ayrshire Arch Soc
McKerrel, Hugh		Arran Antiquarians
Milne, Dorothy J.M.	Hon Secretary	Stirling Field and Arch Soc
Muir, Jean		Dum and Gall Nat Hist
Rennie, Elizabeth	Field Officer	Cowal Arch & Hist Soc
Smith, David	Secretary	Dalkeith Hist Soc
Ward, Tam		Lanark and District Arch Soc
	Secretary	Mid Argyll Nat Hist
	Secretary	Cardenden Local Hist Group
	Secretary	Strathearn Arch Soc
	Secretary	Gullane Local Hist Soc/Dirleton Local
	Secretary	Tayside and Fife Arch Committee
	Secretary	Kirkcaldy Naturalist Soc

Regional Archaeologists

Brann, Jane (Mrs)	Regional Archaeologist	Dumfries and Galloway
Dent,	Regional Archaeologist	Borders
King, Muriel	Resource Assistant	East Lothian
Main, Lorna	Regional Archaeologist	Central
Swanson, Carol	Regional Archaeologist	Strathclyde
Yeoman, Peter	Regional Archaeologist	Fife

Units and Researchers

Bonsall, Clive	Archaeologist	Edinburgh University
Finlay, Nyree	Research Student	Department of Archaeology
Finlayson, Bill	Director	Centre for Field Archaeology
Flowers, Crispin	Regional Archaeologist	WOSAS
Leslie, Alan	Director	GUARD
Lewis, John	Director	Scotia Archaeology
McCullugh, Rod	Fieldwork Manager	AOC (Scotland) Ltd
Miller, Darren	Archaeologist	
Proudfoot, Mrs	Previous arch.	St Andrews Heritage Services
Ragan, Beth	Research Student	Pennsylvania State University
SUAT	Rescue Unit	SUAT

Journals

Proceedings of the Society of Antiquaries for Scotland

Proceedings of the Prehistoric Society

Discovery and Excavation in Scotland

Transactions of the Glasgow Archaeological Society

Glasgow Archaeological Journal

Transactions of the Dumfries and Galloway Natural History and Antiquarian Society

Transactions of the Buteshire Natural History and Antiquarian Society

The Berwickshire Naturalists' Club Histories

Transactions of the East Lothian Antiquarian and Field Naturalists' Society

Appendix three

Phosphate sampling - the Spot-Test Field method.

The samples taken from Garvald Burn were tested using the Spot-Test field method described by Hamond in 'Landscape Archaeology in Ireland', (Reeves-Smith and Hamond 1983, 55). This methodology is described below with some alterations which I found to be suitable for my circumstances, and after some discussion with Ian Banks (pers comm).

Two reagents are prepared beforehand. Reagaent 'A' consists of 5 g ammonium molybdate dissolved in 100 ml water, to which 30 ml 6N hydrochloric acid are added. Reagent 'B' comprises 0.5 g ascorbic acid (vitamin C) **freshly made up each day**, with 100 ml water.Two drops of A are added to a small soil sample (the size of the end of a micro-spatula) on filter paper, resting on a glass dish. This causes the phosphate to be released, and combines with the molybdate. Thirty seconds later, two drops of B are added, the phosphomolybdate is then reduced to form a molybdate blue complex. Over the next two minutes, the time of appearance of this blue colour is noted, and at the end of this period, its extent and intensity. This data was recorded on a three-point scale of relative phosphate ratings: a high rating given if a colour change appeared within the first 30 seconds; a medium rating if a change occurred between 30-90 seconds; and a low rating was given after 90 seconds. It was found that if the blue colour did not appear after 90 seconds, it would not do so.

I found it took approximately 30 seconds to add reagent 'A' to twelve samples, and so carried out the testing in groups of twelve. There was either an immediate reaction, in which case I described the sample as being high in phosphate, or a reaction within 60 seconds, which I described as having medium phosphate levels. After 90 seconds, I described the remaining samples as being low in phosphates.

Although Hamond describes this method as being 'robust' (ibid. 1983, 55), he also mentions four problems with it, which I must also briefly describe before analysing my results.

Hamond states that it is difficult to gauge accurately the colour development brought about by ascorbic acid reduction, and he finds that it is sufficient to measure the time of appearance of the colour, rather than its intensity. He also describes how problems may occur in determining the sample's phosphate rating precisely, as it is purely subjective in deciding the exact appearance time of the blue colour. Use of a three-point scale of reference is suggested to reduce the error margin, and this proved to be 72% accurate in duplicate sample tests carried out by Hamond (ibid. 56).

The third problem with this method is that only a proportion of total phosphate present will be released. This creates problems when trying to determine indications of anthropogenic phosphates from high readings compared to phosphates from a fertiliser-rich natural soil. Hamond stresses that spot-test ratings should be regarded as qualitative, rather than quantitative.

Bibliography

Abernethy, D 1996 *Girvan Sewerage Scheme Phase 4: Archaeological Fieldwalking*, GUARD structures report 279.2. Glasgow.

Abernethy, D 1997 'Monadh An Tairbh, flint scatter', *Discovery and Excavation in Scotland*, (1997), 21.

Abernethy, D 1998 'Longwalk, flint scatter', *Discovery and Excavation in Scotland*, (1998), 20

Adams, M 1991 'A Logic of Archaeological Inference', *Journal of Arch Theory*, 2 (1991), 1-11.

Adams, M & Brooke, C 1995 'Unmanaging the past: truth, data and the human being', *Norw Arch Rev*, 28 No.2 (1995), 93-104.

Affleck, T 1984 'Loch Doon Starr 1 mesolithic site', *Discovery and Excavation in Scotland*, (1984), 33-34.

Affleck, T 1986 'Loch Doon Starr 1, *Discovery and Excavation in Scotland*, (1985), 49.

Affleck, T 1989 'Archaeological and palynological studies at the mesolithic pitchstone and flint site of Auchareoach, Isle of Arran', *Proc Soc Antiq Scot*, 118 (1988), 37-59.

Allen, C & Edwards, K 1987 'The distribution of lithic materials of possible Mesolithic age on the Isle of Arran', *Glasgow Arch Journal*, 14 (1987), 19-25.

Allen, K M, Green, S W & Zubrow, E B W 1990 *Interpreting Space: GIS and Archaeology*. London.

Allen, M J 1991 'Analysing the landscape: a geographical approach to an archaeological problem', *in* Schofield (ed), (1991), 39-58.

Ammerman, A J & Feldman, M W 1978 'Replicated collection of site surfaces', *American Antiquity*, 43 (1978), 734-740.

Anderson, A & Smith, I 1996 'The transient village in Southern New Zealand', *World Archaeology*, 27, 3 (1996).

Anderson, J & Black, G F 1888 'Reports on local museums in Scotland, obtained through Dr R H Gunning's Jubilee gift to the Society', *Proc Soc Antiq Scot*, 22 (1887-8), 381.

Andrefsky Jr, W 1998 *Lithics Macroscopic Approaches to Analysis*. Cambridge.

Anon. 1927 'Donations to and Purchases for the Museum and Library' *Proc Soc Antiq Scot*, 61 (1926-7), 236.

Anon. 1927 'Donations to and Purchases for the Museum and Library', *Proc Soc Antiq Scot*, 61 (1926-27), 237.

Anon. 1934 'Donations to and Purchases for the Museum and Library' *Proc Soc Antiq Scot*, 68 (1933-34), 19.

Anon. 1936 'Donations to and Purchases for the Museum and Library' *Proc Soc Antiq Scot*, 70 (1935-6), 16, 21, 24.

Anon. 1950 'Donations to and Purchases for the Museum and Library' *Proc Soc Antiq Scot*, 84 (1949-50), 227.

Anon. 1951 'Donations to and Purchases for the Museum and Library' *Proc Soc Antiq Scot*, 85 (1950-1), 183.

Appadurai, A 1986 *The Social Life of Things*. Cambridge.

Appadurai, A 1995 'The production of locality', *in* Fardon (ed), (1995), 204-225.

Appleton, J 1975 *The Experience of Landscape*. London.

Areni, A 1997 *Stairways to the Stars Skywatching in Three Great Ancient Cultures*. London.

Århem, K 1998 'Powers of place: landscape, territory and local belonging in Northwest Amazonia', *in* Lovell (1998a), 78-102.

Ashmore, P J 1996 *Neolithic and Bronze Age Scotland*. London.

Ashton, N & David, A (eds) 1994 *Stories in Stone*. Oxford. (=Lithic Studies Soc Occ 4).

Atkins S M & Mackey, E C 1995 *The Natural Heritage of Scotland: an Overview*. Edinburgh.

Atkinson, J 1996 *Excavations at Chapelfield, Cowie*. GUARD structures report, 153.2. Glasgow.

Atkinson, J, Banks, I & O'Sullivan, J 1996 *Nationalism and Archaeology: Scottish Archaeological Forum*. Glasgow.

Augé, M 1995 *Non-places Introduction to an Anthropology of Supermodernity*. London.

Auster, P 1987 *New York Trilogy*. London.

Auster, P 1997 *Hand to Mouth*. London.

Bachelard, G 1964 *The Poetics of Space*. Boston.

Bailey, G (ed) 1983 *Hunter-gatherer Economy in Prehistory: a European Perspective*. Cambridge.

Bain, S & Leslie, A 1993 *Girvan Sewerage Scheme Archaeological Assessment*. GUARD Structures report 160. Glasgow.

Bang-Andersen, S 1996 'Coast/inland relations in the Mesolithic of southern Norway', *World Archaeology*, 27, 3 (1996), 427-443.

Banks, I 1995 'The excavation of three cairns at Stoneyburn Farm, Crawford, Lanarkshire', *Proc Soc Antiq Scot*, 125, vol 1 (1995), 289-344.

Barclay, G J 1995 'What's new in Scottish prehistory', *Scottish Arch Review*, 9 (1995), 3-14.

Barclay, G J 1997 *State-funded Rescue Archaeology in Scotland: Past, Present and Future*. Edinburgh: Historic Scotland. (= *Ancient Monuments Division Occas Pap*, 2).

Barclay, G J 1998 'Postscript Site Conservation Issues' *in* Barclay & Maxwell (1998), 126-130.

Barclay, G J & Maxwell, G S 1998 *The Cleaven Dyke and Littleour Monuments of the Neolithic of Tayside*. Edinburgh. (= *Soc Antiqs Scot Monograph Series No. 13*).

Barclay, G J & Russell-White, C J 1993 'Excavations in the ceremonial complex of the fourth to second millenium BC at Balfarg/ Balbirnie, Glenrothes, Fife', *Proc Soc Antiq Scot*, 123 (1993), 43-211.

Barrett, J C 1987 'Contextual archaeology', *Antiquity*, 61 (1987), 468-73.

Barrett, J C 1987 'Fields of discourse: reconstituting a social archaeology', *Critique of Anthropology*, 7 (1987), 5-16.

Barrett, J C 1990 'Archaeology in the age of uncertainty', *Scot Arch Review*, 7 (1990), 31-36.

Barrett, J C 1994 *Fragments from Antiquity*. Oxford.

Barrett, J C 1995 'Some challenges in contemporary archaeology', Archaeology in Britain conference 1995. Unpublished.

Barrett, J C 1999 'Chronologies of Landscape', *in* Ucko & Layton (1999), 21-30.

Barrett, J C, Bradley, R & Green, M 1991 *Landscapes, Monuments and Society: the Prehistory of Cranborne Chase*. Cambridge.

Barret, J C & Kinnes, I (eds) 1988 *The Archaeology of Context in the Neolithic and Bronze Age: Recent Trends*. Sheffield.

Barrowman, C S 1997a 'Garvald Burn', *Discovery and Exacavtion in Scotland*, (1997), 67.

Barrowman, C S 1997b *Interim Report on Fieldwalking on South Bute*. Unpublished fieldwalking report.

Barrowman, C S 1998 'Garvald Burn' *Discovery and Excavation in Scotland*, (1998), 80.

Barrowman, C S forthcoming 'Lithic scatters and dynamic archaeology', *in* Maloney, H & Shott, M forthcoming.

Barrowman, C S forthcoming 'Report on the pottery', *in* Ward, T forthcoming.

Barrowman, C S & Stuart, E forthcoming *Scottish Lithic Scatters Project*. Historic Scotland Publication.

Barton, R N E , Berridge, P J, Walker, M J C, Bevins, R E 1995 'Persistent places in the Mesolithic landscape: an example from the Black Mountain uplands of South Wales' *PPS*, 61 (1995), 81-116.

Baudrillard, J 1968 *Le Système des Objects*. Paris.

Bell, M & Boardman, J 1992 *Past and Present Soil Erosion: Archaeological and Geographical Perspectives*. Oxford. (= Oxbow monographs 22).

Bender, B 1978 'Gatherer-hunter to Farmer: a social perspective', *World Archaeology*, 10 (1978), 204-22.

Bender, B (ed) 1993 *Landscape: Politics and Perspectives*. Oxford.

Bender, B 1998 *Stonehenge Making Space*. Oxford.

Bender, B, Hamilton, S, Tilley, C 1997 'Leskernick: stone worlds; alternative narratives; nested landscapes', *PPS* 63 (1997), 147-78.

Benjamin, D N, Stea, D & Saite, D (eds) 1995 *The Home: Words, Interpretations, Meanings and Environments*. Aldershot.

Beveridge, 1903 *Coll and Tiree*. Edinburgh.

Bibby, J S 1982 *Land Capability Classification for Agriculture*. Aberdeen.

Binford, L R 1980 'Willow smoke and dog's tails: hunter-gatherer settlement systems and archaeological site formation', *American Antiquity*, 45, 1 (1980), 4-20.

Binford, L R 1982 'The archaeology of place' in *Journal of Anthropological Archaeology*, 1 (1982), 5-31.

Binford, L R 1986 *In Pursuit of the Past*. London.

Bird-David, N 1990 'The giving environment: another perspective on the economic system of gatherer-hunters', *Current Anthropology*, 31 (1990), 189-96.

Bird-David, N 1993 'Tribal metaphorization of human-nature relatedness: a comparitive analysis' *in* Milton (ed), (1993), 112-25.

Birks, H H, Briks, H J B, Kaland, P & Moe, D (eds) 1988 *The Cultural Landscape: Past, Present and Future*. Cambridge.

Bishop, W W 1961 'Late glacial deposits near Lockerbie, Dumfriesshire' *Trans Dum Gall Nat Hist Soc*, 40 (1961), 117-132.

Bjerck, H B 1989 'Mesolithic types and settlement patterns at Vega, Northern Norway', *Acta Archaeologia*, 60 (1989), 1-32.

Boismier, W A 1997 *Modelling the Effects of Tillage Processes on Artefact Distributions in the Ploughzone: a Simulation Study of Tillage-Induced Pattern Formation.* Oxford. (=BAR British Series 259).

Bonney, D J 1980 'Damage by medieval and later cultivation in Wessex', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 41-48.

Bonsall, C (ed) 1985 *The Mesolithic in Europe.* Edinburgh.

Bonsall, C 1988 'Morton and Lussa Wood, the case for early Flandrian settlement of Scotland: comment on Myers', *Scot Arch Review*, 5 (1988), 30-33.

Bourdieu, P 1977 *Outline of a Theory of Practice.* Cambridge.

Bourdieu, P 1984 *Distinction: a Social Critique of the Judgement of Taste.* Cambridge.

Bourdieu, P 1998 *Practical Reason: on the Theory of Action.* Oxford.

Bourdieu, P & Wacquant, L J D 1992 *An Invitation to Reflexive Sociology.* Cambridge.

Bowden, M, Ford, S, Gaffney, V, & Tingle, M. 1991. 'Skimming the surface or scraping the barrel: a few observations on the nature of surface and sub-surface archaeology', *in* Schofield, A (1991).

Bowen, H C 1980 'Ploughing in Perspective', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 38-40.

Boyd, W 1982 'Archaeological implications of a new palaeoenvironmental model for part of the Ayrshire coast', *Glasgow Arch Journal*, 9 (1982), 15-17.

Bradley, A G 1927 *When Squires and Farmers Thrived*. London.

Bradley, R 1970 'The excavation of a Beaker settlement at Belle Tout, East Sussex, England', *PPS*, 36 (1970), 312-79.

Bradley, R 1978 *The Prehistoric Settlement of Britain*. London.

Bradley, R 1987 'A field method for investigating the spatial structure of lithic scatters', *in* Brown & Edmonds (eds), (1987), 39-48.

Bradley, R 1991 'Ritual, time and history', *World Archaeology*, 23 (1991), 209-19.

Bradley, R 1993 *Altering the Earth*. Edinburgh (= *Soc Antiq Scot Monograph Series No. 8*).

Bradley, R 1996 'Ancient landscapes and the modern public', *in* Morgan et al (1996), 38-46.

Bradley, R 1998 *The Significance of Monuments.* London.

Bradley, R, Cleal, R, Gardiner, J, Green, M & Bowden, M 1984 'The Neolithic sequence in Cranborne Chase', *in* Bradley and Gardiner (eds), (1984), 87-105.

Bradley, R, Durden, T and Spencer, N 1994 'The creative use of bias in field survey' *Antiquity* 64 (1994), 343-6.

Bradley, R & Edmonds, M 1993 *Interpreting the Axe Trade: Production and Exchange in Neolithic Britain*. Cambridge.

Bradley, R & Gardiner, J (eds) 1984 *Neolithic Studies: a Review of Some Current Research.* Oxford. (=BAR 133).

Bradley, J & Holgate, R 1984 'The Neolithic sequence in the Upper Thames Valley', *in* Bradley & Gardiner (eds), (1984), 107-34.

Breeze, D 1974 'Plough marks at Carrawburgh on Hadrian's Wall', *Tools and Tillage*, 11:3 (1974), 188-90.

Breeze, D 1987 'Forestry and monuments: the role of SDD HBM for antiquities (part 2)', *in* Proudfoot (eds), (1987), 20-21.

Brooks, I & Phillips, P (eds) 1989 *Breaking the Stony Silence: papers from the Sheffield Lithics Conference 1988.* Oxford. (= BAR British series 213).

Brown, A G 1987 *Fieldwork for Archaeologists and Local Historians.* London.

Brown, A G 1995 'Beyond stone-age economics: a strategy for a contextual lithic analysis', *in* Schofield (ed), (1995b), 27-36.

Brown, A G 1995 'Context means everything', *in* Schofield (ed), (1995b), 139-141.

Brown, A G and Edmonds, M R (eds) 1987 *Lithic Analysis and Later British Prehistory Some Problems and Approaches.* Oxford. (=BAR British Series 162).

Brown, G M 1971 'Ploughman and Whales', *in* Brown, G M 1971 *Fishermen with Ploughs: a Poem Cycle*. London.

Burch, E S 1972 'The caribou/ wild reindeer as human resource', *Antiquity*, 37, 3 (1972), 339-68.

Burton, J 1980 'Making sense of waste flakes: new methods for investigating the technology and economy behind chipped stone assemblages', *Journal Arch Science*, 7 (1980), 131-48.

Callander, J G 1911 'Notice of the discovery of two vessels of clay on the Culbin Sands', *Proc Soc Antiq Scot*, 45 (1911), 158-81.

Callander, J G 1911 'Notice of the discovery of two vessels of clay on the Culbin Sands, the first containing wheat and the second from a kitchen-midden, with a comparison of the Culbin Sands and the Glenluce Snads and of the relics found on them', *Proc Soc Antiq Scot*, 45 (1910-11), 158-181.

Callander, J G 1924 'Stone, Bronze and Iron Ages', *Trans Dum Gall Nat Hist Antiq Soc*, 11 (1923-4), 100-45.

Callander, J G 1927 'A collection of Tardenoisian implements from Berwickshire', *Proc Soc Antiq Scot*, 61 (1927), 318-27.

Callander, J G 1928 'A collection of stone and flint implements from Airhouse, Parish of Channelkirk, Berwickshire', *Proc Soc Antiq Scot*, 62 (1928), 166-80.

Camille, W & Ebert, D 1992 'Artifact reuse and recycling in continuous surface distributions and implications for interpreting land use patterns', *in* Rossignol and Wandsnider (1992).

Candow, R D M 1989 *Prehistoric Morton the story of the Mesolithic discoveries on Morton Farm on Tentsmuir in North East Fife*. Dundee.

Carman, J 1990 'Commodities, rubbish and treasure: valuing archaeological objects', *Arch Review of Cambridge*, 9 (1990), 195-207.

Carter, S 1997 The Archaeology of Tentsmuir. A synthesis and interpretation of existing records, Headland Archaeology Ltd unpublished report.

Carver, M O H 1989 'Digging for ideas', *Antiquity*, 63 (1989), 666-74.

Carver, M O H 1996 'On Archaeological Value', *Antiquity*, 70 (1996), 45-56.

Certeau, M de 1984 *The Practice of Everyday Life*. London.

Chadwick, A 1999 'Archaeology at the edge of chaos: further towards reflexive excavation methodologies', *Assemblage*, 3. (http://www.shef.ac.uk/~assem/3/3chad.htm).

Chambers, F M (ed) 1993 *Climate Change and Human Impact on the Landscape*. London.

Chandler, R 1953 *The Long Good-bye*. London.

Chapman, R W (ed) 1948 *Johnson's Journey to the Western Isles of Scotland and Boswell's Journal of a Tour to the Hebrides*. Oxford.

Chatwin, B 1993 *The Songlines*. London.

Cherry, P J & Cherry, J 1997 'Two late mesolithic sites in the Luce Bay area', *Trans Dum Gall Nat Hist Soc*, 72 (1997), 109.

Childe, V G 1956 *Piecing Together the Past*. London.

Chippendale, C 1990 *Who Owns Stonehenge ?*. London.

Clark, J G D 1932 *The Mesolithic Age in Britain*. London.

Clark, J G D 1972 *Star Carr: a case study in bio-archaeology*. Reading.

Clark, M 1984 *The Airhouse Collection: an Empirical Study of Material Remains*. Unpublished undergraduate dissertation. University of Glagow.

Clark, R H & Schofield, A J 1991 'By experiment and calibration: an integrative approach to archaeology of the ploughsoil', *in* Schofield (ed), (1991), 93-106.

Clarke, A 1989 'Corse Law, Carnwath, Lanarkshire: a lithic scatter', *Proc Soc Antiq Scot*, 119 (1989), 43-54.

Clarke, D V 1996 'Presenting a national perspective of prehistory and early history in the Museum of Scotland', *in* Atkinson et al (1996), 67-76.

Clarke, D V 1998 'New things set in many landscapes: aspects of the Museum of Scotland', *Proc Soc Antiq Scot*, 128 (1998), 1-13.

Clutton-Brock, T H 1989 *Red Deer in the Highlands*. Edinburgh.

Cobbett, W 1821 *Cobbett's Cottage Economy*. London.

Cohen, A P 1985 *The Symbolic Construction of Community*. Chichester.

Coles, J M 1964 'New aspects of the Mesolithic settlement of south-west Scotland', *Trans Dum Gall Nat Hist Antiq Soc*, 41 (1964), 67-98.

Coles, J M 1971 'The early settlement of Scotland:excavations at Morton Fife', *PPS*, 37 2 (1971), 284-366.

Coles, J M 1983 'Morton revisited' *in* O'Connor & Clarke (eds) *From the Stone Age to the Forty Five:Studies*, Edinburgh, 9-18.

Collcutt, S N (ed) 1986 *The Palaeolithic of Britain and its Nearest Neighbours: Recent Trends*. Sheffield.

Connolly, J 1996 'Knapped stone report' *in* Hodder (ed) (1996), 173-198.

Cook, M 1998 *Excavations of a multi-period landscape at Haughhead Farm, Garvald Quarry*. AOC Ltd unpublished structures report. Edinburgh.

Cormack, W F 1961 'Prehistoric site at Kirkburn, Lockerbie', *Trans Dum Gall Nat Hist Soc*, 40 (1961-2), 53-59.

Cormack, W F 1963a 'Palisaded enclosure at Harthill, Lockerbie', *Trans Dum Gall Nat Hist Antiq Soc*, 41 (1963), 116.

Cormack, W F 1963b 'Prehistoric site at Beckton. Lockerbie', *Trans Dum Gall Nat Hist Antiq Soc*, 41 (1962-3), 111.

Cormack, W F 1964 'Daltonhook, Dumfriesshire', *Discovery and Excavation in Scotland*, (1964), 25-6.

Cormack, W F 1968 'A burial cairn in Luce Sands, Wigtownshire', *Trans Dum Gall Nat Hist Antiq Soc*, 45 (1968), 240.

Cormack, W F 1968 'A Mesolithic site at Low Clone, Wigtownshire', *Trans Dum Gall Nat Hist Antiq Soc*, 45 (1968), 44-72.

Cormack, W F 1970 'A Mesolithic site at Barsalloch, Wigtownshire', *Trans Dum Gall Nat Hist Soc*, 47 (1970), 63-80.

Cormack W F 1982 'Sheddock, midden and mesolithic site', *Discovery and Excavation in Scotland*, (1982), 9.

Cormack, W F 1983 'A flint blade from Redkirk Point, Dumfriesshire', *Trans Dum Gall Nat Hist Antiq Soc*, 58 (1983), 92.

Cormack, W F 1985 'A note on Mesolithic sites on Bute', *Trans Buteshire Nat Hist Soc*, 22 (1985), 6.

Cormack, W F 1986 'Little Kilchattan, mesolithic site', *Discovery and Excavation in Scotland*, (1986), 26.

Cormack, W F & Coles, J M 1968 'Mesolithic site at Low Clone, Wigtownshire', *Trans Dum Gall Nat Hist Soc*, 45 (1968), 44-72.

Corrie, J M 1916 'Notes on some stone and flint implements found near Dryburgh, in the Parish of Mertoun, Berwickshire', *Proc Soc Antiq Scot*, 50 (1915-16), 307-13.

Corrie, J M 1924 'Notes on a group of chipped stone implements from Roxburghshire and Berwickshire', *Proc Soc Antiq Scot*, 59 (1924-5), 32.

Corrie, J M 1927 'Kirkcudbrightshire in the Stone, Bronze and Early Iron Age', *Trans Dum Gall Nat Hist Antiq Soc*, 14 (1926-8), 272-372.

Corrie, J M 1935 'Donations and purchases to the museum', *Proc Soc Antiq Scot*, 70 (1935), 21.

Cowie T G 1993 *A report on Sandy Hill, Ingraston.* Unpublished. Edinburgh.

Cowie T G 1996 'Torrs Warren, Luce Sands, Galloway: a report on archaeological and palaeoecological investigations undertaken in 1977 and 1979' *Trans Dum Gall Nat Hist Antiq Soc*, 71 (1996), 11-106.

Craig, D 1985 *Native Stones a Book about Climbing.* London.

Crawford, J 1997 'Archaeological collections from sandhill sites in the Isle of Coll, Argyll and Bute', *Proc Soc Antiq Scot*, 127 (1997), 467-511.

Cribb, R 1991 *Nomads in Archaeology.* Cambridge.

Cullen, I 1994 'Girvan Sewerage Scheme Archaeological Fieldwalking at Girvan Mains Farm', GUARD structures report 168. Glasgow.

Culpin, C 1986 *Farm Machinery.* London.

Curwen, E 1939 'Blunted axe-like implements', *PPS*, 5 (1939), 196-201.

Daniel, G E 1950 *A Hundred Years of Archaeology.* London.

Darling, F F 1937 *A Herd of Deer A Study in Animal Behaviour.* Oxford.

David, A 1995 *Geophysical Survey in Archaeological Field Evaluation.* London. (= Research and Professional Services Guideline No. 1, Ancient Monuments Laboratory, English Heritage Society).

Davis, J 1994 'Events and processes: marriages in Libya, 1932-79', *in* Hastrup K & Hervik P (eds), (1994), 200-223.

Davis, K L 1997 'Sites Without Sites, Interpreting Closed Excavations', *in* Jameson, (ed), (1997), 84-98.

Davis, P & Knipe, T (eds) 1984 *A Sense of Place: Sculpture in the Landscape*. Sunderland.

Department of Agriculture and Fisheries for Scotland 1948 *Agricultural Statistics, Scotland 1939-44 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1952 *Agricultural Statistics, Scotland 1945-49 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1953 *Agricultural Statistics, Scotland 1950 & 1951 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1954 *Agricultural Statistics, Scotland 1952 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1955 *Agricultural Statistics, Scotland 1953 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1956 *Agricultural Statistics, Scotland 1954 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1957 *Agricultural Statistics, Scotland 1955 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1958 *Agricultural Statistics, Scotland 1956 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1959 *Agricultural Statistics, Scotland 1957 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1960 *Agricultural Statistics, Scotland 1958 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1962 *Agricultural Statistics, Scotland 1959 & 1960 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1964 *Agricultural Statistics, Scotland 1961 &1962 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1965 *Agricultural Statistics, Scotland 1963 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1966a *Agricultural Statistics, Scotland 1964 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1966b *Agricultural Statistics, Scotland 1965 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1967 *Agricultural Statistics, Scotland 1966 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1975 *Agricultural Statistics, Scotland 1974 Part 1*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1981 *Economic Report on Scottish Agriculture 1980*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1986 *Economic Report on Scottish Agriculture 1985*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1990 *Economic Report on Scottish Agriculture 1989*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1991 *Economic Report on Scottish Agriculture 1990*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1992 *Economic Report on Scottish Agriculture1991*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1993 *Economic Report on Scottish Agriculture 1992*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1994 *Economic Report on Scottish Agriculture 1994*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1997 *Economic Report on Scottish Agriculture 1997*. Edinburgh.

Department of Agriculture and Fisheries for Scotland 1998 *Economic Report on Scottish Agriculture 1998*. Edinburgh.

Derrida, J 1997 *Deconstruction in a Nutshell*. New York.

Dewar, R E & McBride, K A 1992 'Remnant Settlement Patterns', *in* Rossignol & Wandsnider (1992), 80-95.

Druitt, A, Fynes-Clinton, C & Rowling, M 1995 *All Year Round*. Gloucestershire.

Don, M & Don, S 1999 *Fork to Fork*. London.

Donnelly, M 1998a 'Evaluation of lithics', *in* Duncan et al (1998), 13-17.

Donnelly, M 1998b 'Lithics report' *in* Cooke, M (1998).

Donnelly, M 1999 'Fieldwalking' *in* Lelong, O (1999), 26-7.

Donnelly, M 1999 *Gallow Hill, Grivan Sewerage Pipeline Corridor*. GUARD structures report 547. Glasgow.

Donnelly, M forthcoming *Excavations in Arran*. GUARD report unpublished.

Donnelly, M & Pollard, A 1998 *Girvan Sewerage Scheme, Test Pit Programme – summary report*. GUARD. Glasgow.

Downes, J & Richards, C 1993 'The Fieldwalking Exercise', *in* Barclay, G J & Russell-White C J (1993), 162-65.

Dunbar, J G 1987 'Archaeology and forestry: the role of the Royal Commission on the Ancient and Historical Monuments of Scotland in survey and record', *in* Proudfoot (ed), (1987), 13-17.

Duncan, J S et al 1998 *The Watching Briefs and Evaluation at Garvald Quarry*. GUARD Report No. 322.4. Glasgow.

Duncan, K & Usher, M B 1996 'Natural Heritage Management of the Sand Dunes of Scotland: Raising some issues', *in* Whittington (1996), 58-73.

Dunnell, R C 1992 'The Notion Site', *in* Rossignol & Wandsnider (1992), 21-41.

Eckford, R J A 1952 'Glacial phenomena in the West Linton – Dolphinton region', *Trans Edin Geol Soc*, 15 (1952), 133-49.

Edgar, W 1939 'A Tardeniosian site at Ballantrae, Ayrshire', *Trans Dum Gall Nat Hist Antiq Soc*, 9 (1937-40), 184-88.

Edlin, H L 1969 *Forests of Central and Southern Scotland*. Edinburgh.

Edmonds, M 1990 'Science, technology and society', *Scot Arch Review*, 7 (1990), 23-30.

Edmonds, M 1995 *Stone Tools and Society*. London.

Edmonds, M 1999 *Ancestral Geographies of the Neolithic*. London.

Edmonds, M, Evans, C & Gibson, D 1999 'Assembly and collection – lithic complexes in the Cambridgeshire Fenlands', *PPS*, 65 (1999), 47-82.

Edwards, K J & Mithen, S J 1995 'The colonisation of the islands of western Scotland: evidence from the palynological and archaeological records', *World Archaeology*, 26 (1995), 348-65.

Edwards, K J, Ansell, M & Carter, B A 1983 'New Mesolithic sites in southwest Scotland and their importance as indicators of inland penetration', *Trans Dum Gall Nat Hist Antiq Soc*, 58 (1983), 9-15.

Edwards, K J 1996 'A mesolithic of the Western and Northern Isles of Scotland?', *in* Pollard & Morrison (eds), (1996), 23-38.

Edwards, J 1998 'Place and past in English identity', *in* Lovell (1998a), 147-67.

Ellen, R & Fukui, K (eds) 1996 *Redefining Nature Ecology, Culture and Domestication.* Oxford.

Elliot, J W 1967 'Dryburgh Mains Farm near St Boswell's, flint implements', *DES* (1967), 49.

Emerson, R M, Fretz, R I & Shaw, L L 1995 *Writing Ethnographic Fieldnotes.* Chicago & London.

Entwistle, R & Richards, J 1987 'The geochemical and geophysical properties of lithic scatters', *in* Brown & Edmonds (eds), (1987), 19-38.

Erskine, D 1836 *Annals and Antiquities of Dryburgh and Other Places on the Tweed.* Kelso.

Evans, C, Pollard, J & Knight, M 1999 'Life in woods: tree-throws, 'settlements,' and forest cognition', *Oxford Jou of Arch*, 18, 3 (1999), 241-54.

Evans, D M, Salway, P, Thackray, D (eds) 1996 *The Remains of Distant Times.* Woodbridge. (= Society of Antiq London occ paper 19).

Fabre, J H 1921 *The Story Book of Fields.* London.

Fardon, R (ed) 1995 *Counterworks: managing the diversity of knowledge.* London.

Fasham, P J 1980 'Archaeology in wood and field', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 95-104.

Fenton, A 1962 'Early and traditional cultivating implements in Scotland', *Proc Soc Antiq Scot*, 96 (1962-3), 264-317.

Fenton, A 1970 'The plough-song. A Scottish source for Medieval plough history', *Tools and Tillage*, 1: 3 (1970), 175-191.

Fine, D 1992 'Archaeology; ecology; and the media', *in* Macinnes & Wickham-Jones (1992), 202-210.

Finlayson, B 1990 'Lithic exploration during the Mesolithic in Scotland', *Scot Arch Rev,* 7 (1990), 41-57.

Finlayson, B 1997 'The lithic collections', *in* Crawford (1997), 495-6.

Finlayson, B, Finlay, N, Mithen, S, 1996 'Mesolithic chipped stone assemblages', *in* Pollard & Morrison (eds), (1996), 252-268.

Fleming, A 1999 'Phenomenology and the megaliths of Wales. A dreaming too far?', *Oxford Jou of Arch*, 18, 2 (1999), 119-25.

Fletcher, J 1997 'Forestry – ten years on- is our heritage still vanishing?', *Scot Arch News*, 25. (=Council for Scottish Archaeology publication).

Foard G 1978 'Systematic fieldwalking and the investigation of Saxon Settlement in Northants', *World Archaeology* 9, 3 (1978), 357-374.

Foley, R 1981a *Off-siteArchaeology and Human Adaptation in Eastern Africa: Analysis of Regional Artefact Density in the Amboseli, Southern Kenya.* Oxford. (= Cambridge monographs in African archaeology 3, BAR International series 97).

Foley, R 1981b 'Off-site archaeology: an alternative approach for the short-sited', *in* Hodder, et al (eds), (1981), 157-85.

Ford, S 1987 'Chronological and functional aspects of flint assemblages', *in* Brown & Edmonds (eds), (1987), 67-83.

Ford, S, Bradley, R, Hawkes, J & Fisher, P 1984 'Flint working in the metal age', *Oxford Jou Arch*, 3 (1984), 157-73.

Fowler, P J (ed) 1972 *Archaeology and the Landscape*. London.

Fowler, P J 1981 'Archaeology, the public and the sense of the past', *in* Lowenthal & Binney (1981), 57-66.

Fowler, P J 1990 'Academic claims and responsibilities', *in* Chippendale et al (1990), 120-38.

Fowler, P J 1992 *The Past in Contemporary Society*. London.

Fowler, P J 1995 'Writing on the countryside', *in* Hodder et al (eds), (1995), 100-109.

Fowler, P J 1996 'Landscape: personality, perception and perspective', *in* Evans et al (eds), (1996), 10-20.

Fowles, J 1979 *The Tree*. London.

Fraser, S M 1998 'The public forum and the space between', *PPS*, 64 (1998), 203-24.

Fussell, G E 1952 *The Farmers Tools: a History of British Farm Implements, Tools and Machinery Before the Tractor Came*. London.

Gamble, C S 1982 'Review of Foley 1981', *PPS*, 48 (1982), 529-30.

Gamble, C 1995 'Lithics and social evolution', *in* Schofield (ed), (1995b), 19-26.

Gamble, C S & Boismier, W A (eds) 1991 *Ethnoarchaeological Approaches to Mobile Campsites*. Michigan.

Gardiner, J 1984 'Lithic distribution and Neolithic settlement patterns in Central Southern England', *in* Bradley & Gardiner (ed), (1984), 15-40.

Gardiner, J 1987 'Tales of the unexpected: approaches to the assessment and interpretation of museum flint collections', *in* Brown & Edmonds (1987), 49-66.

Geertz, C 1973 *The Interpretation of Cultures*. London.

Gell, A 1985 'How to read a map: remarks on the practical logic of navigation', *Man*, 20 (1985), 271-86.

Gemmell, A M D & Kesel, R H 1977 'Developments in the study of the Buchan flint deposits', *Scott Arch Forum*, 9 (1977), 66-77.

Gero, J M 1991 'Genderlithics: women's roles in stone tool production', *in* Gero & Conkey (eds), (1991), 163-93.

Gero, J M & Conkey, M W (eds) 1991 *Engendering Archaeology: Women and Prehistory*. Oxford.

Gibbon, L G 1988 *Sunset Song*. Edinburgh.

Giddens, A 1984 *The Constitution of Society: Outline of a Theory of Structuration*. Cambridge.

Goldsworthy, A 1985 *Rain Sun Snow Hail Mist Calm*. Leeds.

Goldsworthy, A 1995 *Black Stones Red Pools*. London.

Gorman, F 1993 'Machrie & Kildonan, mesolithic sites', *Discovery and Excavation in Scotland* (1993), 79-80.

Gorman, F, Murray, B & Lambie, E 1995 'Kildonan and Machrie, Arran: mesolithic sites', *Discovery and Excavation in Scotland* (1995), 72.

Gosden, C 1994 *Social Being and Time*, Oxford.

Gould, R A 1978 (ed) *Explorations in Ethnoarchaeology*. Albuquerque.

Gould, R A 1980 *Living Archaeology*. Cambridge.

Gould, R A & Schiffer, M B (eds) 1981 *Modern Material Culture: the Archaeology of Us*. London.

Graham, A 1956 'Cairnfields in Scotland', *Proc Soc Antiq Scot*, (1956-7), 7-23.

Gray, J 1998 'Family farms in the Scottish Borders: a practical definition by hill sheep farmers', *Journal of Rural Studies*, 14, no.3 (1998), 341-56.

Green, H S 1980 *The flint arrowheads of the British Isles*. Oxford (= BAR British series 75).

Greeves, T 1989 'Archaeology and the Green Movement: a case for Perestroika', *Antiquity*, 63 (1989), 659-66.

Guemple, L 1991 'Teaching social relations to Inuit children', *in* Ingold et al (eds), (1991), 131-49.

Gunn, N 1991 *Wild Geese Overhead*. Edinburgh.

Hall, A 1996 *Environmental Archaeology Bibliography*. University of York.

Ham, S H 1994 'Cognitive psychology and interpretation: synthesis and application', *in* Hooper-Greenhill (ed), (1994), 107-17.

Hamilton, W R, Woolley, A R & Bishop, A C 1990 *The Hamlyn Guide to Minerals, Rocks and Fossils*. London.

Hamond, F W 1983 'Phosphate analysis of archaeological sediments', *in* Reeves-Smith & Hamond (1983), 47-80.

Hanson, W S & Macinnes, L 1991 'The archaeology of the Scottish Lowlands', *in* Hanson and Slater (1991), 153-66.

Hanson, W S & Slater, E A 1991 *Scottish Archaeology: New Perceptions*. Aberdeen.

Harding, A F 1987 *Henge Monuments and Related Sites of Great Britain*. Oxford. (= BAR British series 185).

Harding, J 1995 'Social histories and regional perspectives in the Neolithic of Lowland England', *PPS*, 61 (1995), 117-136.

Harry, R C 1994 'Archaeology as art', *in* MacKenzie(ed), (1994), 131-139.

Harry, R C 1995 *Arran Discovery Centre and Car Park*. GUARD structures report 87.1. Glasgow.

Harry, R C 1999 *Excavations at Melbourne by Glasgow University*. Unpublished structures report.

Harvey, D 1990 *The Condition of Postmodernity*. Cambridge.

Haselgrove, C, Millet, M & Smith, I 1985 *Archaeology from the Ploughsoil*. Sheffield.

Hastrup, K & Hervik, P (eds) 1994 *Social Experience and Anthropological Knowledge*. London.

Healy, F 1994 'Typology: the maker's or the analyst's', *in* Ashton & David (1994), 179-181.

Henderson, W 1937 'Scottish late Bronze Age axes and swords', *Proc Soc Antiq Scot*, 72 (1937-8), 169.

Henshall, A 1972 *The Chambered Cairns of Scotland, volume 2*. Edinburgh.

Hepher, J 1999 *Luce Sands: The Archaeology of the Area in Relation to Geological Influences of Settlement*. Unpublished undergraduate dissertation. University of Glasgow.

Hewison, R 1987 *The Heritage Industry*. London.

Hinchcliffe, J 1980 'Effects of ploughing on archaeological sites: assessment of the problems and some suggested approaches', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 11-17.

Hinchcliffe, J & Schadla- Hall, R (eds) 1980 *The Past Under the Plough*. London. (= Directorate of Ancient Mons and Historic Buildings occas paper 3).

Hodder, I 1984 'Archaeology in 1984', *Antiquity*, 58 (1984), 25-32.

Hodder, I 1986 *Reading the Past*. Cambridge.

Hodder, I 1987 *Archaeology as Long-term History*. Cambridge.

Hodder, I 1989a (ed) *The Meaning of Things*. Cambridge.

Hodder, I 1989b 'Postmodernism, post-structuralism and post processual archaeology', *in* Hodder, (1989a), 64-78.

Hodder, I 1989c 'This is not an article about material culture as text', *Journal of Anth Arch*, 8 (1989), 250-69.

Hodder, I 1989d 'Writing archaeology: site reports in context', *Antiquity*, 63 (1989), 268-74.

Hodder, I 1990 *The Domestication of Europe*. Oxford.

Hodder, I 1992 *Theory and Practice in Archaeology*. London.

Hodder, I 1994 'The contextual analysis of symbolic meanings', *in* Pearce (1994), 12.

Hodder, I (ed) 1996 *On the Surface: Catalhoyuk 1993-95*. Cambridge.

Hodder, I 1997 'Always momentary, fluid and flexible: towards a reflexive excavation methodology', *Antiquity*, 71 (1997), 691-700.

Hodder, I 1999 *The Archaeological Process: an Introduction*. Oxford.

Hodder, I, Isaac, G & Hammond, N (eds) 1981 *Patterns of the Past Studies in Honour of David Clarke*. Cambridge.

Hodder, I, Shanks, M, Alexandri, A, Buchli, V, Carman, J, Last, J & Lucas, G 1995 *Interpreting Archaeology Finding Meaning in the Past*. London.

Hole, F & Heizer, R F 1969 *An Introduction to Prehistoric Archaeology*. New York.

Holgate, R 1988a *Neolithic Settlement of the Thames Basin*. Oxford. (= BAR British series 194).

Holgate, R 1988b 'A review of Neolithic domestic activity in Southern Britain', *in* Barrett, J & Kinnes, I (eds), (1988), 104-12.

Holgate, R 1994 'Binford's hyperbole: the curation of flintwork', *in* Ashton & David (1994), 99-103.

Hood, F 1994 'Peninver Beach, worked flint', *Discovery and Excavation in Scotland*, (1988), 52.

Hooper-Greenhill, E 1994 *The Educational Role of the Museum*. London and New York.

Hubert, F 1985 'Ecomuseum in France: contradictions and distortion', *Museum*, 37 No. 4 (1985), 186-90.

Hughes, I 1988 'Megaliths: space, time and the landscape – a view from the Clyde', *Scot Arch Review*, 5 (1988), 41-56.

Hughes, I 1991 'Solway and Clyde: some comments', *Scot Arch Review*, 8 (1991), 33-4.

Hunter, F 1992 'West Water reservoir', *Discovery and Excavation in Scotland*, (1992), 9-10.

Hunter, F 1993 'West Water reservoir', *Discovery and Excavation in Scotland*, (1993), 10.

Hunter, F 1995 'West Water reservoir', *Discovery and Excavation in Scotland*, (1995), 11.

Ingold, T 1980 *Hunters, Pastoralists and Ranchers*. Cambridge.

Ingold, T 1986 *The Appropriation of Nature*. Manchester.

Ingold, T 1993 'Temporality of the landscape', *World Arch*, 25 No.2 (1993), 152-74.

Ingold, T 1995 'Building, dwelling, living. How animals and people make themselves at home in the world', *in* Strathern, M (ed) 1995 *Shifting Contexts, Transformations in Anthropological Knowledge*. London, 57-80.

Ingold, T 1996 'Hunting and gathering as ways of perceiving the environment', *in* Ellen et al (eds), (1996), 117-56.

Ingold, T, Riches, D & Woodburn, J (eds) 1988 *Hunters and Gatherers vol 1 History, Evolution and Change*. Oxford.

Ingold, T, Riches, D & Woodburn, J (eds) 1991 *Hunters and Gatherers vol 2 Property, Power and Ideology*. Oxford.

Isaac, G L 1981 'Stone age visiting cards', *in* Hodder et al (eds), (1981), 131-56.

Jackson, A M 1978 *Forestry and Archaeology: a Study in Survival of Field Monuments in South-west Scotland*. Hertford.

Jacobi, R M 1986 'The contents of Dr Harley's show case', *in* Collcutt, (1986), 62-68.

Jacobi, J M 1994 'Mesolithic radiocarbon dates: a first review of some recent results', *in* Ashton & David(eds), (1994), 192-198.

Jameson, J H (ed) 1997 *Presenting Archaeology to the Public*. London.

Jeffrey, A 1855 *The History and Antiquities of Roxburghshire vol 1-3*. London.

Johnston, D A 1997 'Biggar Common, 1987-93: an early prehistoric funerary and domestic landscape in Clydesdale, South Lanarkshire', *Proc Soc Antiq Scot*, 127, 1 (1997), 185-254.

Jones, A & Bradley, R 'The significance of colour in European archaeology', *Cambridge Arch Jou*, 9, 1 (1999), 112-14.

Kirkby, J S, Owen, M & Powcliffe., J M 1999 *Geese and their interaction with agriculture and the environment*. Edinburgh.

Kroll, E M & Price, T D 1991 *The Interpretation of Archaeological Spatial Patterning*. New York.

Lacaille, A D 1930 'Mesolithic implements from Ayrshire', *Proc Soc Antiq Scot*, 64 (1929-30), 34-47.

Lacaille, A D 1940 'Some Scottish corer-tools and ground flake implements', *Proc Soc Antiq Scot*, 74 (1939-40), 6-13.

Lacaille , A D 1945 'The stone industries associated with the raised beach at Ballantrae', *Proc Soc Antiq Scot*, 79 (1944-45), 81-106.

Lacaille, A D 1947 'The Stone Age background of Scotland', *Trans Dum Gall Nat Hist Antiq Soc*, 26 (1947-8), 9-41.

Lacaille, A D 1954 *The Stone Age in Scotland*. Oxford.

Lambrick, G 1980 'Effects of modern cultivation equipment on archaeological sites', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 18-21.

Lee, R 1988 'Reflections on primitive communism', *in* Ingold et al (eds), (1998a), 252-68.

Lefebvre, H 1991 *The Production of Space*. Oxford.

Lelong, O 1999 *Blackshouse Burn Environs Project, South Lanarkshire*. GUARD structures report 275.2. Glasgow.

Lelong, O & Pollard, A 1998 'The excavation and survey of prehistoric enclosures at Blackshouse Burn, Lanarkshire', *Proc Soc Antiq Scot*, 128 (1998), 13-54.

Leopold, A 1949 *A Sand County Almanac, and Sketches Here and There*. New York.

Lerch, G 1986 'Ridged fields and profiles of plough-furrows', *Tools and Tillage*, 3 (1986), 131-56.

Lewarch, D E & O'Brien, M J 1981 'The expanding role of surface assemblages in archaeological research', *Advances in Arch Method and Theory*, 4 (1981), 297-342.

Liddle, P 1985 *Community Archaeology: a Fieldworker's Handbook of Organisation and Techniques*. Leicestershire (= Leicestershire Museums Art Galleries and Records Service publication No. 61).

Lissau, R 1987 *Rudolf Steiner Life, Work Inner Path and Social Initiatives*. Hawthorn Press.

Long, R 1991 *Walking in Circles*. London.

Long, R 1998 *Mirage*, London.

Lovegrove, R & Barrett, P 1982 *Birdwatcher's Diary*. London.

Lovell, N (ed) 1998a *Locality and Belonging*. London.

Lovell, N 1998b 'Introduction: belonging in need of emplacement ?', *in* Lovell (ed), (1998a), 25-52.

Lowenthal, D & Binney, M 1981 *Our Past Before: Us Why Do We Save It ?* London.

Lowenthal, D 1985 *Our Past is a Foreign Country.* Cambridge.

Mabey, R 1980 *The Common Ground.* London.

McCartan, S 1988 *A Surface Assemblage from Weston, Lanarkshire.* Unpublished archive report. Department of Archaeology, University College, Cork.

McCartan, S 1990 'The lithic assemblage: secondary technology', *in* Wickham-Jones, 1990.

McFadzean, H 1984a 'Ayrshire Mesolithic sites', *Discovery and Excavation in Scotland,* 3, 28, 31-32.

McFadzean, H 1984b 'A venture into Scottish perhistory', *Scottish Arch Gazette*, 6, 7-9. (= CBA Scotland).

McFadzean, H & Scott, J G 1985 'A prehistoric chipping floor of agates on the hills of south Bute', *Trans Buteshire Nat Hist Soc,* 22 (1985), 33-38.

MacGregor, G 1994 *Littlehill Bridge, Girvan: watching brief and excavation.* GUARD structures report 168.2. Glasgow.

MacGregor, G & Donnelly, M in press 'The characterisation of archaeological deposits at Littlehill Bridge, Girvan'.

Macinnes, L & Wickham –Jones, C R 1992 *All Natural Things: Archaeology and the Green Debate*. Oxford. (= Oxbow monograph 21).

MacKenzie, I M (ed) 1994 *Archaeological Theory: Progress or Posture ?*. Aldershot.

Mackey, E C 1995 *The Natural Heritage of Scotland: an overview*. Edinburgh.

MacKie, E 1975 *Scotland: an Archaeological Guide*. London.

MacNeill, M 1965 'Ballantrae', *Discovery and Excavation in Scotland*, 13.

MacNeill, M 1975. 'Small finds, Dreghorn and Drybridge', *Discovery and Excavation in Scotland*, 58.

Mallouf, R J 1982 'Analysis of plow-damaged chert artefacts', *Journal of Field Arch*, 9 (1982), 79-98.

Maloney, H & Shott, M forthcoming *Proceedings of the Groundstone and Lithics Analysis Conference 1998*. London.

Martin, A 1996 'By hill and by shore', *Kintyre Antiq and Nat Hist Soc Magazine*, 40 (1996), 26-36.

Martin, A 1997 'By hill and by shore', *Kintyre Antiq and Nat Hist Soc Magazine*, 42 (1997), 16-27.

Martin, A 1999 'By hill and by shore', *Kintyre Antiq and Nat Hist Soc Magazine*, 46 (1999), 14-25.

Mason, W D 1931 'Prehistoric man at Tweed Bridge, Selkirk', *Proc Soc Antiq Scot*, 65 (1931), 414.

Masters, L 1989 'Westruther Burn (Carnwath Parish), cairnfield', *DES*, (1989), 60.

Maxwell, G 1974 'The excavation of ring-ditched enclosures in Annadale and Clydesdale', *Glasgow Arch Journal*, 3 (1974), 1-8.

Mellars, P A 1976 'Fire ecology, animal populations and man: a study of some ecological relationships in prehistory', *PPS*, 42 (1976), 15-45.

Mellars, P A 1981 'Cnoc Coig, Druim Harstell and Cnoc Riach: problems of the identification and location of shell middens on Oronsay', *Proc Soc Antiq Scot*, 111 (1981), 516-18.

Mellars, P (ed) 1987 *Excavations on Oronsay: Prehistoric Human Ecology on a Small Island.* Edinburgh.

Mercer, R J 1968 'Stone tools from a washing-limit deposit of the highest post-glacial transgression, Lealt Bay, Isle of Jura', *Proc Soc Antiq Scot*, 100 (1967-8), 1-46.

Mercer, R J 1970a 'Flint tools from the present tidal zone, Lussa Bay, Isle of Jura, Argyll', *Proc Soc Antiq Scot*, 102 (1969-70), 1-30.

Mercer, R J 1970b 'The microlithic succession in North Jura, Argyll', *Quaternaria*, 13 (1970), 177-85.

Mercer R J 1971 'A regression time stone-workers' camp, 33 ft OD, Lussa River, Isle of Jura', *Proc Soc Antiq Scot*, 103 (1971), 1-32.

Mercer, R J 1972 'Microlithic and bronze age camps, 75-26 ft OD, N Carn, Isle of Jura', *Proc Soc Antiq Scot*, 104 (1972), 1-22.

Mercer, R J 1974a 'Glenbatrick Waterhole, a microlithic site on the Isle of Jura', *Proc Soc Antiq Scot*, 105 (1972-4), 9-32.

Mercer, R J 1974b 'The Neolithic level at Lussa Wood 1, Notrh Jura, Argyll', *Glasgow Arch Journal*, 3 (1974), 77.

Mercer, R J 1980a 'Lussa Wood 1: the late-glacial and early post-glacial occupation of Jura', *Proc Soc Antiq Scot*, 110 (1979-80), 1-31.

Mercer, R J 1980b 'Evaluation of modern ploughing threats to prehistoric sites', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 105-8.

Mercer, R J 1981 'The excavation of a late Neolithic henge-type enclosure at Balfarg', *Proc Soc Antiq Scot*, 111 (1981), 63-171.

Mercer, R J 1987 'Coming down from the trees: approaches to prehistoric and historic landscapes in Northern Scotland', *in* Proudfoot (ed), (1987), 11-12.

Mercer, R J & Searight, S 1986 'Glengarnisdale: confirmation of Jura's third phase', *Proc Soc Antiq Scot*, 116 (1986), 41-55.

Miles, R S & Tou, A F 1994 'Outline of a technology for effective science exhibits', *in* Hooper-Greenhill (1994), 87-100.

Milton, K (ed) 1993 *Environmentalism the View from Anthropology* Routledge.

Mithen, S J 1989a *Thoughtful Foragers: a study of prehistoric decision makers*. Cambridge.

Mithen, S J 1989b 'New evidence for mesolithic settlement on Colonsay', *Proc Soc Antiq Scot*, 119 (1989), 33-41.

Mithen, S J 1991 'A cybernetic wasteland ? Rationality, emotion and Mesolithic foraging', *PPS*, 57, 2 (1991), 9-14.

Mithen, S J & Finlayson, B F 1991 'Red deer hunters on Colonsay ?', *PPS*, 57 (1991), 1-8.

Mithen, S J, Finlayson, B, Finlay, N & Lake, M 1992 'Excavations at Bolsay Farm, a Mesolithic settlement on Islay', *Cambridge Arch Journal*, 2 (1992), 242-53.

Mithen, S J & Lake, M 1996 'The Southern Hebrides Mesolithic Project: reconstructing Mesolithic settlement in western Scotland', *in* Pollard & Morrison (eds), (1996), 123-151.

Morrison, A 1982 'The Mesolithic period in south-west Scotland: a review of the evidence', *Glasgow Arch Journal*, 9 (1982), 1-14.

Morrison, A & Hughes, I 1989 *The Stone Ages in Ayrshire*. Ayrshire.

Mulholland, H 1970 'The microlithic industries of the Tweed Valley', *Trans Dum Gall Nat Hist Soc*, 47 (1970), 82-108.

Munro, W A 1950 'Donations to and Purchases for the Museum', *Proc Soc Antiq Scot*, 84 (1949-50), 227.

Murray, P 1980 'Discard location: the ethnographic data', *American Antiquity*, 45 (1980), 490-502.

Myers, A 1987 'All shot to pieces? Inter-assemblage variability, lithic analysis and mesolithic assemblage 'types'; some preliminary observations', *in* Brown & Edmonds (eds), (1987), 137-154.

Myers, A 1988 'Scotland inside and outside of the British mainland Mesolithic: a tale of chronology', *Scot Arch Review*, 5 (1988), 23-30.

Myers, A 1989 'Reliable and maintainable technological strategies', *in* Torrence (ed), (1989), 64-80.

Nicholson, R J 1980 'Modern ploughing techniques', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 22-25.

Oakley, K 1972 *Man the Tool-Maker.* London.

O'Connor, B & Cowie, T 1985 'A group of bronze socketed axes from the Eildon Mid Hill near Melrose, Roxburghshire', *Proc Soc Antiq Scot*, 115 (1985), 157.

Odell, G H 1980 'Toward a more behavioural approach to archaeological lithic concentrations', *American Antiquity*, 45 (1980), 404-31.

Odell, G H & Cowan, F L 1987 'Estimating tillage effects on artefact distributions', *American Antiquity*, 52 (1987), 456-484.

Ogilvie, R 1987 'The past and the future: a view from private forestry', *in* Proudfoot (ed), (1987), 28-30.

Ordnance Survey 1952a *Geology Map Solid ed Peebles sheet 24, 3rd ed.* Edinburgh.

Ordnance Survey 1952b *Geology Map Drift ed Peebles sheet 24, 3rd ed.* Edinburgh.

Ordnance Survey 1975 *Soil Survey of Scotland.* Edinburgh.

Ordnance Survey 1983 *Geology Map Solid ed Galashiels sheet 25W.* Edinburgh.

Ordnance Survey 1985 *Geology Map Drift ed Galashiels sheet 25W.* Edinburgh.

Parry, M L 1976 'A typology of cultivation ridges in Southern Scotland', *Tools and Tillage*, 111: 4 (1976), 3-19.

Pearce, S M (ed) 1994 *Interpreting Objects and Collections*. London.

Perec, G 1974 *Species of Spaces and Other Pieces*. London.

Perec, G 1987 *Life a User's Manual*. London.

Petersen, J D 1990 'From foraging to food production in SE Ireland: some lithic evidence', *PPS*, 56 (1990), 89-100.

Pinsky, V & Wylie, A (eds) 1989 *Critical Traditions in Contemporary Archaeology*. Cambridge.

Pitts, M W & Jacobi, R M 1979 'Some aspects of change in flaked stone industries of the Mesolithic and Neolithic in Britain', *Jou Arch Science*, 6 (1979), 163-77.

Plog, S, Plog, F & Wait, W 1978 'Decision making in modern surveys', *Advances Arch Method Theory*, 1 (1978), 383-421.

Pollard, T 1986 'Report on the lithic assemblage recovered from the cairn at Cloburn Quarry, Lanarkshire', GUARD structures report.

Pollard, T 1993 *Kirkhill Farm*. GUARD structures report 130. Glasgow.

Pollard, T 1994 *A Study of Marine Exploitation in Prehistoric Scotland*. Unpublished PhD thesis. University of Glasgow.

Pollard, T 1995 'General discussion, Lithics in ritual and funerary contexts', *in* Banks (1995), 333-6.

Pollard, T & Morrison, A (eds) 1996 *The Early Prehistory of Scotland.* Edinburgh.

Pollock, R 1999 'Stones of wonder in Scotland. A web guidebook', (http://www.geocities.com/sotto/2621/watching.htm).

Pred, A 1983 'Structuration and place: on the becoming of sense of place and structure of feeling', *Journal for the Theory of Social Behaviour,* 13 (1983), 45-68.

Proudfoot, E V W (ed) 1987 *Our Vanishing Heritage: Forestry and Archaeology.* Inverness. (=CSA Occ Paper 2).

Pryor, F 1990 'The reluctant greening of archaeology', *Antiquity,* 64 (1990), 147-50.

Pyefinch, K A 1960 *Trout in Scotland.* Edinburgh.

Redman, C L & Watson, P J 1970 'Systematic, intensive surface collection', *American Antiquity,* 35 (1970), 279-91.

Reeves-Smith, T & Hamond, F 1983 *Landscape Archaeology in Ireland.* Oxford. (BAR British series 116).

Reynolds, P J & Schadla-Hall, R T 1980 'Measurement of plough damage and the effects of ploughing on archaeological material', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 114-19.

Richards, C 1991 *Survey and Excavation of Barnhouse, Stennes, Orkney.* An interim report for Orkney Islands Council on the survey and excavations at Barnhouse, March 1992. Unpublished report.

Richards, C R 1995a *Revised Project Outline for the Evaluation of Lithic Scatters in Scotland.* Unpublished report. Glasgow.

Richards, C R 1995b 'Knowing about the past', *in* Hodder et al, (1995), 216-219.

Richards, C R 1996a 'Henges and water', *Jou of Material Culture*, 1 (1996), 313-36.

Richards, C R 1996b 'Monuments as landscape: creating the centre of the world in late neolithic Orkney', *World Archaeology*, 28, 2 (1996), 190-208.

Richards C R 1999 'Crantit Orkney excavations', (http://www.orkneyislands.com/crantit.dig. html.).

Richards, J 1984 'The development of the Neolithic landscape in the environment of Stonehenge', *in* Bradley & Gardiner (eds), (1984), 177-87.

Richards, J 1988 *The Stonehenge Environs Project*. London. (= English Heritage Archaeol Report 16).

Rivière, G H 1985 'The ecomuseum – an evolutive definition', *Museum*, 37 No. 4 (1985), 182-3.

Robins, P 1993 *M74 Pre-development survey.* GUARD structures report 29.3. Glasgow.

Rossignol, J & Wandsnider, L (eds) 1992 *Space, Time and Archaeological Landscapes*. New York.

Rowan, A 1987 'Antiquities in the countryside: a Forestry Commission view', *in* Proudfoot (ed), (1987), 26-27.

Rowley-Conwy, P 1983 'Sedentary hunters: the Ertebolle example', *in* Bailey (ed), (1983), 111-126.

Rowley-Conwy, P, Zvelebil, M & Blankholm, H P (eds) 1987 *Mesolithic Northwest Europe: Recent Trends*. Sheffield.

Royal Commission on the Ancient and Historical Monuments of Scotland [RCAHMS] 1956 *Roxburghshire volume 1*. Edinburgh.

Royal Commission on the Ancient and Historical Monuments of Scotland [RCAHMS] 1967 *Peebleshire vols 1 & 2*. Edinburgh.

Royal Commission on the Ancient and Historical Monuments of Scotland [RCAHMS] 1971 *Argyll: an Inventory of the Ancient Monuments vol 1 Kintyre*. Edinburgh.

Royal Commission on the Ancient and Historical Monuments of Scotland [RCAHMS] 1978 *Lanarkshire: An Inventory of the Prehistoric and Roman Monuments*. Edinburgh.

Sahlins, M 1972 *Stone Age Economics*. London.

Saville, A 1994 'Exploitation of lithic resources for stone tools in earlier prehistoric Scotland', *in* Ashton & David (1994), 57-70.

Saville, A 1998 'Studying the Mesolithic period in Scotland: a bibliographic gazetteer', *in* Ashton, N, Healy, F & Pettitt, P (eds) 1998 *Stone Age Archaeology: Essays in Honour of John Wymer*, 211-224. Oxford (=Oxbow Monograph 102. Lithic Studies Society Occasional Paper 6.

Schiffer, M B 1987 *Formation Processes of the Archaeological Record*. New Mexico.

Schiffer, M B, Sullivan, A P & Klinger, T C 1978 'The design of archaeological surveys', *World Arch*, 10 (1978), 1-28.

Schlanger, C 1992 'Recognising persistent places in Anasazi, *in* Rossignol & Wandsnider (1992).

Schmalz, R 1960 'Flint and the patination of flint artifacts', *PPS*, 26 (1960), 44-49.

Schofield, A J 1987 'Putting lithics to the test: non-site analysis and the Neolithic settlement of Southern England', *Oxford Journal of Arch*, 6 (1987), 269-86.

Schofield, A J (ed) 1991 *Interpreting Artefact Scatters Contributions to Ploughzone Archaeology*. Oxford. (= Oxbow Monograph 4).

Schofield, A J 1994 'Looking back with regret; looking forward with optimism: making more of surface lithic scatter sites', *in* Ashton & David (eds) (1994), 90-99.

Schofield, A J (ed) 1995a 'Artefacts mean nothing', *in* Scofield (1995b), 3-8.

Schofield, A J (ed) 1995b *Lithics in Context*. London. (=Lithics Study Society Occ Paper 5).

Schofield, A J 1995c 'Settlement mobility and la longue durée: towards a context for surface lithic material', *in* Schofield (ed), (1995b), 105-14.

Schofield, A J & Webster, C J 1990 'Archaeological fieldwork 1990: futrher investigations of artefact conentrations south of quarter wall', *Annual Report of the Lundy Field Society*, 41 (1990), 34-52.

Scott, T 1894 'Collection of flint arrowheads, spearheads, knives, scrapers, borers, flakes', *Hist Berwick Nat Club*, 15 (1894), 166, 168.

Scott-Moncreiff, G 1949 *The Lowlands of Scotland*. London.

Scottish Office 1997 *Countryside Premium Scheme*. Edinburgh.

Scottish Office 1998 *The Scottish Environment, Statistics No. 6*. Edinburgh. (=Government Statistical Service publication).

Searight, S 1984 'The mesolithic on Jura', *Current Archaeology*, 90 (1984), 209-14.

Searight, S 1990 'Mesolithic activity at Carn Southern raised beach, Isle of Jura', *Proc Soc Antiq Scot*, 120 (1990), 7-16.

Searight, S 1993 'Lussa Bay, Isle of Jura, Argyll: a note on additional tools', *Proc Soc Antiq Scot*, 123 (1993), 1-8.

Seymour, A 1991 'Interview with Richard Long', *in* Long, R, (1991), 24.

Seymour, J 1973 *Self-sufficiency The Science and Art of Producing and Preserving your own Food*. London.

Seymour, J 1974 *The Fat of the Land*. London.

Shanks, M 1992 *Experiencing the Past*. London.

Shanks, M & McGuire 1996 'The Craft of Archaeology', *American Antiquity*, 61 (1996), 75-88.

Shanks, M & Tilley, C 1987 *Social Theory and Archaeology*. Cambridge.

Shanks, M & Tilley, C 1992 *Re-Constructing Archaeology Theory and Practice*. London.

Shanks, M & Hodder, I 1995 'Processual, post processual and interpretive archaeologies', *in* Hodder et al 1995, 3-29.

Sharpe, L & Johnson, P 1998 'Geophysical survey on the Cleaven Dyke and Littleour', *in* Barclay & Maxwell (1998), 77-83.

Sharpe, L forthcoming *Clyde Valley Project*. University of Glasgow.

Shennan, S J 1980 'Meeting the plough damage problem: a sampling approach to area-intensive fieldwork', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 125-133.

Shennan S J 1985 *Experiments in the Collection and Analysis of Archaeological Survey Data: the East Hampshire Survey*. Sheffield.

Shepherd, P 1997 *The Cultivated Wilderness*. Cambridge.

Shott, M 1995 'Reliability of archaeological records on cultivated surfaces: a Michigan case study', *Journal of Field Arch*, 22, 1 (1995), 475-90.

Singer, I B 1990 *The King of the Fields*. Penguin.

Sissons, J B 1967 *The Evolution of Scotlands Scenery*. Edinburgh.

Sloan, D & Murray, J F 1980 'Nether Kinneil, Falkirk District, Central Region', *PPS*, 46 (1980), 364-5.

Sloan, D 1982 'Nether Kinneil', *Current Archaeology* 84 (1982), 13-15.

Small, J 1784 *A Treatise on Ploughs and Wheel Carriages*. Edinburgh.

Smith, C 1992a *Late Stone Age Hunters of the British Isles*. London.

Smith, C 1992b 'The population of Late Upper Palaeolithic and Mesolithic Britain', *PPS*, 58 (1992), 37-40.

Smith, J 1882 'On the occurrence of flint nodules and worked flints in the past Tertiary sands of the Ayrshire coast between Saltcoats and Troon', *Trans Geol Soc Glasgow*, 6 (1882), 185-91.

Smith, J 1987 'Highland Scotland: landscape and settlement background', *in* Proudfoot (ed), (1987), 10.

Spencer, T J B (ed) 1980 *Romeo and Juliet by Shakespeare*. Penguin.

Spikins, P 1995 'Virtual landscapes – GIS and lithic scatters', *in* Schofield (ed), (1995b), 95-104.

Spikins, P Ayestaran, H & Conneller, C 1995 'Meaningful patterns or mere pictures: the influence of collection strategy on the interpretation of lithic scatters', *in* Schofield (ed), (1995b), 125-138.

Spindle, K 1995 *The Man in the Ice*. London.

Spoor, G 1980 'Agronomic justification and technique for subsoil disturbance', *in* Hinchcliffe & Schadla-Hall (eds), (1980), 26-31.

Steane, J M & Dix, B F 1978 *Peopling Past Landscapes*. London. (= Council for British Archaeology handbook).

Steinberg, J M 1996 'Ploughzone sampling in Denmark: isolating and interpreting site signatures from disturbed contexts', *Antiquity*, 70 (1996), 368-92.

Steiner, R 1920 *The Threefold State, The True Aspect of the Social Question*. London.

Steiner, R 1991 *Community Life, Inner Development, Sexuality and the Spiritual Teacher*. New York.

Stewart, M E C 1950 'Donations to and purchases for the museum', *Proc Soc Antiq Scot*, 85 (1950-1), 183.

Stirling, T L 1935 'Donations to and purchases for the museum', *Proc Soc Antiq Scot*, 70 (1935), 16.

Symon, J A 1954 *Scottish Farming Past and Present*. Edinburgh.

Tacon 1991 'The power of stones', *Antiquity*, 65 (1991), 192-207.

Tallgren, A M 1937 'The method of prehistoric archaeology', *Antiquity*, 11 (1937), 152-61.

Taylor, C 1974 *Fieldwalking in Medieval Archaeology*. London.

Thoms, L M *Early Man in the Scottish Landscape*. Edinburgh. (= Scottish archaeological forum 9).

Thomas, C (ed) 1983 *Research Objectives in British Archaeology*. London. (=Council for British Archaeology publication).

Thomas, J 1991 *Rethinking the Neolithic*. Cambridge.

Thomas, J 1991 'The hollow men ? A reply to Steve Mithen', *PPS*, 57, 2 (1991), 15-20.

Thomas, J 1996 *Time, Culture, Identity: an Interpretative Archaeology*. London.

Thomas, R S 1913 'Soil', *in* Blackburn, J 1980 *Gallery Poets Past and Present*. London.

Thoreau, H D 1883 *Walden*. Boston.

Thorpe, O N & Thorpe, R S 1984 'The distribution and sources of archaeological pitchstone in Britain', *Journal of Arch Science*, 11 (1984), 1-31.

Tilley, C 1989a 'Archaeology as socio-political action', *in* Pinsky & Wylie (eds), (1989).

Tilley, C 1989b 'Excavation as theatre', *Antiquity*, 63 (1989), 275-80.

Tilley, C 1989c 'Interpreting material culture', *in* Hodder (ed), (1989a), 183-94.

Tilley, C 1993 *Interpretive Archaeology*. Cambridge.

Tilley, C 1994 *A Phenomenology of Landscape*. Oxford.

Tilley, C 1996a *An Ethnography of the Neolithic*. Cambridge.

Tilley, C 1996b 'The powers of rocks', *World Archaeology*, 28, 2 (1996), 161-76.

Tilley, C 1999 *Metaphor and Material Culture*. Oxford.

Timms D (ed) 1974 *The Stirling Region*. University of Stirling

Tipping, R 1995 'Holocene evolution of a lowland Scottish landscape', *Holocene*, 5 (1995), 69-81.

Tolstoy, L 1978 *Anna Karenin*. London.

Tomaszewski, A J & Willis, R 1993 'Tool-kits and burial rites: the case of the Janislawice Mesolithic grave', *PPS*, 59 (1993), 105-12.

Torrence, R (ed) 1989 *Time, Energy and Stone Tools*. Cambridge.

Trigger, B 1995 *A History of Archaeological Thought*. Cambridge.

Tringham, R 1978 'Experimentation, ethnoarchaeology and the leapfrogs in archaeological methodology', *in* Gould (ed), (1978), 169-99.

Tringham, R 1991 'Households with faces: the challenge of gender in prehistoric architectural remains', *in* Gero & Conkey (eds), (1991), 93-131.

Tringham, R 1995 'Archaeological houses, households, homework and the home', *in* Benjamin, D A et al (1995), 77-107.

Truckell, A E 1951 'Some recent museum acquisitions', *Trans Dum Gall Nat Hist Antiq Soc*, 29 (1950-1), 139-42.

Truckell, A E 1961 'The Mesolithic in Dumfries and Galloway: recent developments', *Trans Dum Gall Nat Hist Soc*, 40 (1961-2), 43-47.

Tsouvalis-Gerber, J 1998 'Making the invisible visible: ancient woodlands, British forest policy and the social construction of reality', *in* Watkins, C (ed), (1998), 215-229.

Turnbull, C 1961 *The Forest People*. London.

Turnbull, C 1983 *The Mbuti Pygmies Change and Adaptation*. London.

Ucko, P & Layton, R 1999 *The Archaeology and Anthropology of Landscape*. London.

Vermeersch, P M & Van Peer, P 1990 *Contributions to the Mesolithic in Europe*. Leuven.

Wagstaff, J M 1987 *Landscape and Culture*. Oxford.

Wagstaff, J M 1991 'The archaeological site from a geographical perspective', *in* Schofield (ed), (1991a), 9-10.

Walsh, K 1992 *The Representation of the Past: Museums and Heritage in the Post-modern World*. London.

Walsh, K 1995 'A sense of place: a role for cognitive mapping in the 'postmodern' world ?', *in* Hodder et al 1995, 131-40.

Wandsnider, L 1992 'Archaeological landscape studies', *in* Rossignol & Wandsnider (eds), (1992).

Wandsnider L & Camilli, E L 1992 'The character of surface archaeological deposits and its influence on survey accuracy', *Journal Field Arch*, 19, 1 (1992).

Ward, T 1992 *Upper Clyde Valley Through the Ages*. Biggar Museums.

Ward, T 1993 'Neolithic/ Bronze Age artefact scatters', *Discovery and Excavation in Scotland*, (1993), 87.

Ward, T 1994 'Cornhill, find-spot', *Discovery and Excavation in Scotland*, (1992), 72

Ward, T 1995 'Daer reservoir (Crawford Parish): bastle house, cairns, find-spots, Mesolithic knapping site, *Discovery and Excavation in Scotland*, (1995), 87.

Ward, T 1996a 'Melbourne Crossroads', *Discovery and Excavation in Scotland*, (1996), 100.

Ward, T 1996b *Prehistory North of Biggar Project, 2nd interim report 31st Dec 1996*. Unpublished report. Biggar Museum.

Ward, T 1997 'Melbourne Crossroads', *Discovery and Excavation in Scotland*, (1997), 76.

Ward, T 1998 'Melbourne Crossroads', *Discovery and Excavation in Scotland*, (1998), 90.

Ward, T 1998 *Biggar Museum Trust Prehistory north of Biggar project. Weston Project NT04NW The story so far 8th March 1998*. Unpublished report. Biggar Museum.

Ward T 1999 *Interim report on the excavations at Melbourne*. Unpublished report. Biggar Museum.

Ward, T 1999 *Prehistory of Biggar Project Weston Fieldwalking and Excavations*

Watkins, C (ed) 1998 *European Woods and Forest Studies in Cultural History*. Cambridge. (=CAB International).

Welfare, H 1976 'A Beaker cist at Newbiggingmill Quarry, Lanarkshire', *Proc Soc Antiq Scot*, 108 (1976-7), 73-79.

Whittington, G 1996 *Fragile Environments*. Edinburgh.

Wickham-Jones, C R 1981 'Report on the analysis of the flaked stone assemblage', *in* Mercer 1981, 115-27.

Wickham-Jones, C R 1986 'The procurement and use of stone for flaked tools in Prehistoric Scotland', *Proc Soc Antiq Scot*, 116 (1986), 1-10.

Wickham-Jones, C R 1990 *Rhum Mesolithic and Later Sites at Kinloch Excavations 1984-86*. Edinburgh. (=*Soc Antiq Scot Mono Series 7*).

Wickham-Jones, C R 1994 *Scotlands First Settlers*. London.

Wickham-Jones, C R forthcoming 'Springwood Park flaked lithic material', *Proc Soc Antiq Scot.*

Wickham-Jones, C R & Collins G H 1978 'The sources of flint and chert in northern Britain', *Proc Soc Antiq Scot*, 109 (1977-8), 7-21.

Wickham-Jones, C R & Dallard, M 1998 'A small Mesolithic site at Fife Ness, Fife, Scotland', *Internet Archaeology*, 5 (http://intarch.ac.uk/journal/issue5/wickham/cwj6.3.html).

Wickham-Jones, C R & MacKenzie, J R 1996 'An unusual lithic assemblage from Lunahead, Angus', *Proc Soc Antiq Scot*, 126 (1996), 1-16.

Wilson, D 1863 *Prehistoric Annals of Scotland volume 1*. London.

Wood, R & Johnson, D L 1978 'A survey of disturbance processes in archaeological site formation', *Advances Arch Method Theory*, 1 (1978), 315-70.

Woodman, P C 1978 *The Mesolithic in Ireland: Hunter-gatherers in an Insular Environment*. Oxford. (=BAR British series 58).

Woodman, P C 1989 'A review of the Scottish Mesolithic: a plea for normality!', *Proc Soc Antiq Scot*, 119 (1989), 1-32.

Woodman, P C 1994 'Towards a definition of the Irish Early Neolithic lithic assemblages', *in* Ashton & David (1994), 213-218.

Yates, M J 1984 'Groups of small cairns in northern Britain – a view from southwest Scotland', *Proc Soc Antiq Scot*, 114 (1984), 217-34.

Young, R 1987 *Lithics and Subsistence in NE England.* Oxford. (= BAR British series 161).

Young, R 1989 'Mesolithic-Neolithic transition in north-east England and mixed lithic scatters', *in* Brooks & Philips (eds), (1989), 161-186.

Zetterlund, P 1990 'The lithic assemblage', *in* Wickham-Jones, C R, (1990), 64-85.

Zola, E 1980 *The Earth.* Penguin Classics translated by Parmee, D.

Zvelebil, M 1994 ' Plant use in the Mesolithic and its role in the transition to farming', *PPS*, 60 (1994), 35-74.