Iron Age flint utilisation in central and southern Britain: the last "Stone Age?"

an integrated theoretical and empirical study

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Abstract

To shed light on past social and economic processes it is crucial to analyze the ways in which past societies absorb and develop new technologies. It is generally thought that technological development is a linear process, particularly in prehistory and the British Iron Age is a very useful period in which to address and challenge this accepted notion. It has previously been argued that flint tools and technology ceased at the end of the Bronze Age, being replaced by metals. Close scrutiny of excavation records in fact reveals the fallacy of such arguments and this thesis seeks to challenge these assumptions by establishing that flint definitely was used in the Iron Age. Most archaeologists are unaware of the existence of contemporary lithics as a significant component of Iron Age artefact repertoires. As such, there is no Iron Age lithic typology which might facilitate the study and identification of this very late lithic material. This study provides fresh insights into Iron Age studies that have previously been neglected and sets out to establish a fluid typology where Iron Age flint assemblages can be recognised and recorded, to explore who was producing and using the flint artefacts and what they were using them for. Thus, this thesis provides an in-depth re-analysis of the flint materials from a catalogue of sites with potential Iron Age assemblages, a re-consideration of Iron Age material cultures, and a wider theoretical analysis of social and material transitions from the Late Bronze Age to Iron Age. It is believed that the new information and hypothesis resulting from this study will greatly increase our understanding of the diversity and complexity of technological change and maximise our data resources, both of which will impact on our existing and future research on wider issues of social and economic practices.

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List of Illustrations

List of Tables

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Chapter 1

Introduction

"Most archaeologists would of course claim that their data are mute. Certainly an object as an object, alone, is mute. But archaeology is not the study of isolated objects. Objects in their 'text' may not be totally mute if we can read the language. Of course all languages have to be interpreted, and so, in one sense, all utterances and material symbols are mute, but a material symbol in its 'text' is no more or less mute than any grunt or other sound used in speech. The artefacts do speak (or perhaps faintly whisper) to us – the problem comes in the interpretation."

Hodder 1986: 126

When asked to compile a book on innovative theoretical approaches to stone tools in the late 1970s, Robin Torrence found it difficult to find thoughtful research on lithics that "transcended stone tools" and developed into major "theory building" issues that were relevant to the discipline as a whole – and noted that by the end of the eighties the situation had not improved much (Torrence 1989: *vii*). She highlighted that at that time archaeological research had moved from the "artefacts to ecofacts and direct evidence for subsistence"(*ibid.*), but eventually she came across a number of researchers where

> "attempts were being made to look at the general causes lying behind the variability in stone tool form and production, so well replicated and documented in the past but poorly understood. Perhaps now stone tools might be worth snatching from the grasp of the specialists who control their study and restored to their rightful place in the centre of archaeological studies of past human behaviour."
>
> (Torrence 1989: *vii*)

It is my intention that this thesis will bring flint analysis to its rightful place in the study of Iron Age archaeology, increasing the potential volume of Iron Age material culture to be studied and enriching the data we have for a better understanding of the period. Yet to establish the existence of Iron Age flint utilisation, where it has long been rejected and ignored, is simply not enough. It is equally important to investigate why flint implements continued to be used into the Iron Age and what and how much of a role did they play.

It has long been a general notion in archaeology that flint utilisation ceased to be an integral part of life by the end of the Bronze Age, with the exception of *ad hoc* and isolated, specialised uses (*i.e.* Roman flint utilisation at Kimmeridge for shale working (Calkin 1948)).

As a result, archaeology has largely neglected to identify, in some cases recover, and most importantly, discuss the appearance of Iron Age flint assemblages in the archaeological record. When Smith (1981) attempted to highlight the potential contemporary Iron Age date for the Meare Village West flint assemblage in 1979, Saville was forthright in his argument when he replied that 'regular production and use of flint artefacts for everyday domestic activities declined and ceased altogether within the Later Bronze Age' (Saville 1981, 6). Lord also held this view when he stated that 'while undiscovered continents continued with their respective stone ages, in Britain, Europe and the Middle East, the end of the Bronze Age heralded a lull in the utilisation of flint' (Lord 1993, 12). He adds that with the exception of road construction and building material, flint did not find its place again until the development of gunpowder where wedges of flint were knapped into gunflints for firearms (*ibid.* 15), a practice which continued into the twentieth century. The fact that such esteemed flint analysts as Saville and knappers like Lord have maintained this viewpoint, has led to the stagnation of flint analysis beyond the Bronze Age resulting in a catch-22 situation for post Bronze Age flint studies (fig. 1-1).

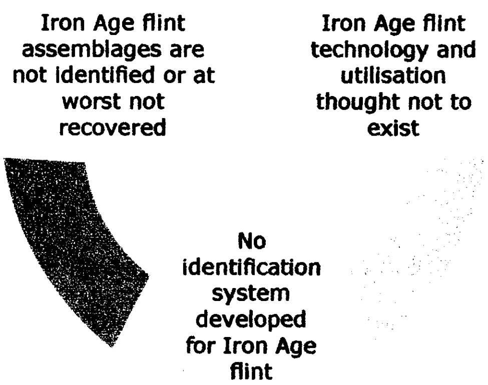

Figure 1-1: Circular argument for the non-acceptance and evidence of post Bronze Age flint assemblages.

The argument for the decline and abandonment of flint utilisation by the end of the Bronze Age has not always been so dominant. As early as 1868 Col A. Lane Fox published a paper entitled '*On Some Flint Implements Found Associated with Roman Remains in Oxfordshire and the Isle of Thanet*' (cited in Bullied and Gray 1917, 602) and he was joined in 1872 by Dr. J. Evans in his '*Ancient Stone Implements*' where he stated that 'flakes and crude chipped pieces of flint are also of very common occurrence on the sites of Roman occupation' (cited in *ibid.*). Bullied and Gray had no problems in conceiving that many of the flints recovered from the Glastonbury and Meare Lake Villages (primarily excavated between 1892 and 1933) were contemporary with the Iron Age date of the sites (Bullied and Gray

1917; Gray 1966, 361). Their view was supported by later excavation and analysis by Coles (1987, 78) and Smith (1981).

The 1930s saw a number of flint assemblages identified to the Iron Age, notably Micklemoor Hill, West Harling where in 1932 Apling originally attributed a contemporary Iron Age date to the material. This was supported by a Late Bronze Age / Early Iron Age date by Clark and Fell in 1953 after three seasons of work (Apling 1932; Clark & Fell 1953). Another such site was Warborough Hill, Stiffkey (Clarke & Apling 1935), where Clarke was so convinced by his findings that he later wrote 'the abundance of excellent flint in East Anglia renders it a cheap and effective material for tool making in all periods ... it is not surprising to find flint industries persisting well into the first phase of the Iron Age' (Clarke 1939, 36). Shortly after, Graeme Clark wrote in his first edition of *Prehistoric England*:

> "No greater mistake could be made than to suppose that the working of flint was confined to the Stone Age: on the contrary, it reached its apogee during the earlier stages of the Bronze Age, when metal was too rare to satisfy the demand for more advanced forms, and persisted even when new materials had become more generally available. Quite a distinctive flint industry has been recognised in lowland Britain for the Late Bonze Age and flint-working was still carried on albeit with greatly reduced standards, during the Early Iron Age. The subsequent survival of the craft was due to properties of flint which in prehistoric times were of secondary importance, namely its ability to produce sparks and its suitability as building material."
>
> (Clark 1948, 43 *4th ed.*)

Despite these well published views from the earlier half of the twentieth century the recognition of contemporary Iron Age flint assemblages declined over time. A small number of flint analysts have over recent decades suggested a contemporary Iron Age date for some assemblages, namely Winnal Down (Winham 1985), London Road, Thetford (Gardiner 1993), St. Ives, Cambridgeshire (Pollard 1996) and Park Farm, Silfield (Robbins 1996), yet have concluded that with the lack of comparative data a potential Iron Age date for such material must remain tentative.

How then, given the early archaeological acceptance of post Bronze Age flint utilisation, have we come to generally accept, with the exception of a few unique examples, that flint utilisation declined and ceased by the end of the Bronze Age? This thesis sets out to answer this question and further the investigation of Iron Age flint utilisation and the reasons behind its continuation, setting, it is hoped, a firm foundation for further research. Preliminary studies influenced by some of the afore mentioned sites have shown that there are a number of potential Iron Age sites with contemporary flint assemblages (Cooper & Humphrey 1998; Humphrey 1996; 1998; 2003; 2004; Humphrey & Young 1999; Young & Humphrey 1999). This research intends to bring together previous discussions regarding the arguments for and against the continuation of flint technology into the Iron Age, structured around two main research agendas, namely:

Can we identify Iron Age flint utilisation? and **What was it used for?**

These can be broken down into six key questions, with a number of related sub questions. These are as follows:

1. **Did Iron Age flint utilisation exist?** Sporadic evidence and preliminary studies suggest that it does.
    a) Why then has it not been regularly identified?
    b) What are the main theories behind its abandonment?
    c) Have these abandonment theories affected our identification of these assemblages?
    d) Are our existing analytical methodologies appropriate for identifying the assemblages, if not, why?
    e) Can we adapt or create methodologies that will aid in their identification?
2. **In what capacity did Iron Age flint utilisation continue?**
    a) What do we know about the place of flint in Bronze Age society?
    b) How had flint technology changed through the Bronze Age and how could assemblages and technology be characterised by the end of this period?
    c) Can we characterise the morphology and technology of an Iron Age flint industry?
    d) If so, will we be able to easily identify contemporary Iron Age flint assemblages from earlier industries?
3. **What was it used for?**
    a) Which activities does it appear to have been associated with?
    b) Are there any activities which regularly occur?
4. **Why was flint chosen to produce implements when metals were available?**
    a) Was it used against metal counterparts or in conjunction with them?
    b) Do the flint implements have the same functions as metal tools at the site case studies or are they different?
5. **Where was it used?**
    a) What type of site is it primarily recovered from?
    b) Can we define any regional patterns of flint utilisation or was it widespread across the research area?
    c) Can the spatial patterning of use and non-use allow for debate on its continued existence?
6. **When does the continued use of flint into the Iron Age end if at all?**

These research questions are explored during the course of the thesis, some in individual chapters, and others across several. In order to express how these questions are approached I have set out the main priorities and discussion points for each chapter below.

Before attempting to answer any questions relating to Iron Age flint utilisation we must build a picture of what preceded it. Chapter 2 attempts to identify the changing nature of flint technology and utilisation during the Bronze Age and deals predominantly with sub questions 2 a) and b), but also 1 a), b) and c). To establish a background previous research on the changing nature of Bronze Age flint is drawn upon, predominantly from three sources; Ford *et al.* 1984 titled '*Flint Working in the Metal Age*'; Herne's analysis of the Middle Bronze Age assemblage from Shaft X at Grimes Graves and his discussion on the wider technology and function of Bronze Age flint industries (1991); and Edmond's discussion on the changing role of flint during the Bronze Age (1995). In addition, Chapter 2 also questions the notions which led archaeologists to suggest a gradual abandonment of flint for tools; primarily metal replacement theories evidenced by a reduced number of diagnostic implements and a diminishing technology. Problems with some of these traditional theories are highlighted and more subtle changes such as the expression of the individual are brought forward.

Chapter 2 also draws together the analysis on the technology and morphology of Bronze Age flint industries to build a comprehensive list of characteristics for Late Bronze Age flint industries based on the above and other sources to create a foundation for continued analysis beyond this period. The observed changes in technology highlighted in these sources provides the ground work for identifying Iron Age flint technology. Problems are however, identified with this *essential* but flawed characterisation of Late Bronze Age flint technology and morphology, highlighting characteristics which have been overlooked due to the inflexible use of existing typologies. In essence, Chapter 2 sets the ground work. This is done by providing critical summary of the state of flint work and its role in society by the end of the Bronze Age, and also by highlighting key deficiencies in previous accounts that need addressing.

It is important to note here that the term 'domestic' is used throughout the thesis. The term is used to describe two related points; the domestic sphere and domestic activities. The former is describing the household in which a person or people live as opposed to an industrial, ritual or commercial environment. The latter is used to encompass daily household/outdoor activities as opposed to ritual, specialised craft or mass production activities. However, it is important to note that although domestic is referred to in this manner throughout the current study (and understood to be the same in sourced material) it must be borne in mind that on both 'domestic', industrial and ritual sites 'domestic activities' can exist alongside non-domestic activities and be evidenced as such in the archaeological record.

Having explored the previous research into the 'abandonment' of post Bronze Age flint utilisation and the characteristic nature of such assemblages, Chapter 3 reflects on several theoretical considerations which must be addressed before further detailed analysis is carried out. It is important to question throughout the analysis where and why flint was still utilised and consequently the two important questions (3 and 5) are woven into the fabric of the research. By doing so we take flint analysis out of isolation by relating it to its surroundings and other materials, stressing that these two aspects are a fundamental part of understanding the technology and function of these assemblages.

Chapter 3 discusses how we approach flint analysis by addressing notions of technological innovation and residuality and how we currently use existing methodologies (questions 1 c and d). Here I draw upon a number of sources to explore the uses of typology, function, style and residuality and consider how this affects the way in which we make judgements about flint artefacts. Do we use such categories efficiently and flexibly or have we become accustomed to a rigid structure where we feel comfortable and safe about our conclusions? The results of this Chapter are crucial to the attempt to develop a usable methodology for identifying post Bronze Age flint assemblages that lies at the heart of this thesis.

The results from Chapters 2 and 3 are built upon in Chapter 4 for the development of suitable methodologies for a) locating potential Iron Age flint assemblages and b) primary study of the flints, the latter Chapter effectively addressing sub-question 1e. In addition, Chapter 4 lays out the format for the bulk of the analysis of the collected sites. The catalogue of 82 sites is analysed and sampled identifying three main areas of study (see below), where it is hoped that a number of corresponding patterns will emerge over the different types of analysis. If this proves to be the case, it will suggest that the methodologies proposed can be successfully used to identify Iron Age flint assemblages from a variable set of recorded and primary sources:

a) A general overview of the character of the flint assemblages from the Iron Age sites selected from published sources

b) Analysis of three of these published assemblages and their associated material culture

c) Primary analysis of another four flint assemblages plus an examination of their associated material culture.

Based on the three areas of research Chapters 5, 6, 7 and 8 form the major part of the thesis concentrating on the empirical data retrieved. Chapter 5 concentrates on the first two elements, the general overview and the detailed analysis of three published sources. During the detailed study of the three sample sites, observations are made about the flint assemblages themselves and how they were initially analysed. This is followed in each case, by detailed analysis of the context and material associations in order to understand what the flints may have been used for and why they might have been chosen over other implement types (questions 3 and 4).

Chapter 6 samples a further four flint assemblages for primary analysis in order to establish three points. First, do the existing characteristics for Late Bronze Age flint industries hold true? Second, can the assemblages be suggested to be contemporary with the Iron Age? Third, can we identify further qualities which will enable a flexible typology (see Chapter 3) to be established for future application (question 2 d))?

The associated context and material data is not dealt with in Chapter 6 due to the comprehensive nature of the primary flint analysis, but follows directly in Chapter 7. As with the published samples, the same approach is applied with questions 3 and 4 considered throughout the analysis.

Having compiled a comprehensive list of observations from the three types of study, yet following a consistent methodical approach across each type of data (where the data allows) the results are compared in Chapter 8. Here we begin to see whether the methodological approach taken in this thesis was able to identify Iron Age flint assemblages from earlier industries (questions 2 c) and d)). If successful this prompts a series of further questions: can we identify the activities that the flints may have been associated with? Did the flint tools stand alone in their role or did they have metal counterparts? Were they used against each other or in conjunction? Lastly, in what capacity of Iron Age life did flint continue to play a role (questions 2, 3 and 4)? In addition, chapter 8 will analyse how adequate the three types of study are with a respect to producing comparable results for analysis and future use.

Within the conclusive discussion of the results achieved in this thesis, chapter 9 addresses whether each of the six main research questions and their sub-questions has been satisfactorily resolved within the current research agenda. In addition, Chapter 9 tackles further aspects of questions 5 and 6 by discussing the site types where the flints have been recovered and the period they relate to. Lastly, successful results are discussed in the context of future work where it is hoped research will build on these results, in order to improve our understanding of Iron Age flint utilisation. In addition, any limitations present in the current study are discussed and thoughts are presented as to how we can overcome these obstacles in the future.

Chapter 2

The position of flint technology and use in the Bronze Age

The introduction to this thesis highlighted a number of reports which have suggested a contemporary Iron Age date for a small number of flint assemblages. Although the information contained within these reports is encouraging, their unique nature has not been sufficient to engender a general acceptability of Iron Age flint utilisation.

In order to further a comprehensive study into Iron Age flint utilisation it is imperative to understand the position of flint technology and utilisation during the Bronze Age, a period where we see a dramatic change not only in the production of flint assemblages but also in the social use of flint. This chapter will not dwell on the question as to whether flint technology was drawing to a close by the end of the Bronze Age. Instead, I present a collection of published data which attempts to set the scene regarding flint technology and function at the end of this period and draw together the varied opinions of analysts who have studied later prehistoric flint assemblages.

The data presented in this chapter is compiled primarily from three sources. First, a paper published by Ford, Bradley, Hawkes and Fisher in 1984, based on the continuation of flint utilisation alongside its metal counterpart. This paper attempts to identify changes that took place in the composition of flint assemblages through the Bronze Age, ultimately to identify the criteria by which a Late Bronze Age flint assemblage can be recognised and to assess the tool compositions of flint and metals in use at that time. This paper, '*Flint Working in the Metal Age*', was seminal in highlighting the changing nature of flint assemblages at the end of the second millennium and dealt with the some of the prejudices concerning flint use in the late Bronze Age that were in circulation at the time of its publication. Since then, it has become common place to accept the 'limited' but continued use of flint in the Late Bronze Age.

The second source has provided much information regarding the production and function of flint implements during the Middle Bronze Age, relating to material from Shaft X at Grimes Graves. Herne's 1991 report provides many alternatives to our traditional ideas and methodologies regarding the analysis and presentation of later prehistoric flint assemblages.

The third source deals with how flint was viewed by society during the Bronze Age. Here Edmonds (1995) discusses the interplay of metal and flint objects and their changing roles, particularly that of flint. The latter, had for millennia, been employed for both domestic tools and prestige goods, where flint was utilised for both utilitarian purposes and the representation of people and practices. By the Late Bronze Age however, the role of flint appears to have been relegated solely into the utilitarian domestic sphere.

In drawing these sources together, to provide an understanding of the state of flint use at the end of the Bronze Age, I will also present a number of case studies, which support the suggestions being put forward in these three main sources.

Flint replacement theories

Although I have stated that this chapter will not dwell on issues concerning the end of flint technology, before discussing the changing shape and role of flint during the Bronze Age it is important to note one of the factors which not only forced a contemporary change in flint technology but has also greatly hindered our own studies of later prehistoric flint utilization. This is none other than the introduction of metals.

Despite the current acceptance that flint was used as a raw material for around a thousand years after the introduction of metals to the island, the continued use of flint is still seen as indicative of a transitional technology from one raw material to another, rather than reflecting the co-existence of the two. It can be argued that this view is enshrined in Thomsen's 1836 guidelines for the Three Age system of Stone, Bronze and Iron distilled out of the first study of such materials in Europe. We still use these terms as they are convenient and simple to work with. However, the dates for these periods have shifted over the years as new evidence has been found and the encompassing dates for each period subsequently moved and refined. As a result, we attempt to use them today in a much more flexible manner, blurring the boundaries and accepting the notion of transitional periods between the new ideas, technologies and cultural behaviour that formed Thomsen's initial chronological sequence. Despite this, the foundations which Thomsen laid for his Three Age system terminology appear hard to shake off, particularly in the guise of flint replacement theories.

As a result of the above, the most widely used and 'accepted' catalyst for flint replacement is the introduction and widespread use of metal, initially copper alloy. There are three main assumptions for why metal is proposed to have replaced flint. It is assumed that metals were chosen over flint on stylistic, functional and economic grounds, all of which are based on a simple, linear notion of technological process, in other words that a new technology is automatically absorbed because it is there (further discussion Chapter 3, Technological innovation).

This general technological replacement theory dominant for much of the 19th and 20th centuries was fuelled by the idea that metals could be fashioned into a variety of new styles to perform existing functions, for instance knives and arrowheads, or create new functional types such as vessels and decorative pieces. As a result, the 'less versatile' flint material was slowly discarded.

The evidence supporting these long heard beliefs draws upon a number of factors in the archaeological record. Primarily there is a reduction in the number of regularly worked flint artefacts during the Bronze Age against an increase in the number and diversity of metal objects. This has generated an assumption that all metal implements are functionally superior to those created in flint, the only remaining flint tools used by the end of the Bronze Age being those yet to be replaced by metal counterparts (Drewett 1982, 374; Ford *et al.* 1984, 158, 164). We also have evidence for a change in stylistic and social representation where flint was fashioned into copies of metal counterparts, particularly daggers and axes, suggesting metal replaced flint as a tool for social representation and negotiation (Edmonds 1995, 147, 187; Ford *et al.* 1984, 158.).

The *value* of metals over flint has become such a prime factor in understanding the phenomenon of metal utilisation that the continued use of flint in a changed or 'lesser role' has been neglected. This point is made clear in Pydyn's discussion on the value of prestige items where it is suggested that the 'value' of an item can lie in the raw material, style and/or function of a piece and not necessarily in its origin or authenticity. Establishing where value was placed in objects however, is problematic at best as there is no definite stance by which archaeologists measure value. Pyden further points out that the distinction and /or value placed on an object/s by a person or society between an original and a copy is unclear (Pydyn 1999, 15-16). Copies of flint daggers and axes (particularly battle axes) found mainly in early Bronze Age graves illustrate this with regard to style and function, if not raw material, in that they copy the form and function of metal objects.

Furthermore, an obsession with the 'value' of raw material is still clearly part of our own modern ideals, as is our modern capability to absorb new materials easily (*e.g.* plastic). These modern 'values' evidently affect both our empirical and theoretical analysis of how *we* treat individual materials archaeologically. This is most clear from the in-depth discussions given over to the smallest numbers of metal pieces in excavation reports against larger flint assemblages. This may also explain why detailed discussions given over to flint copies of metal artefacts can also be found often above a discussion of the whole assemblage.

Technological analysis

Today, flake measurement is perhaps the most widely used and basic method to loosely place a flint assemblage into a chronological sequence. This assesses the overall shape of flakes removed from cores in any one assemblage. This methodology initially stems from early flint analysts in northern Europe who believed that the shape of flakes was more important than the British method of flake 'types' that describe specific methods of removal (Pitts 1978, 17-18).

Bordes (1961, 6) definition of a blade (length is twice as long at its breadth, a ratio of 2:1) was the first to have been widely used across Britain and allowed typologies based on flake shape to be established that initially set apart Mesolithic and Neolithic flint industries, based on blade or flake technology. Pitts built on this methodology by measuring the lengths and breadths of flakes from later prehistoric flint assemblages, and by comparing their ratios was able to differentiate between early and later Neolithic industries (Pitts 1978, Ford *et al.* 1984, 159).

It was not until 1984, however, that any useful analysis was made on Bronze Age technologies where Ford and others used flake ratios to assess assemblage variation during and up to the end of this period. Their analysis showed that Bronze Age flint assemblages exhibited little variation in the shape of their flakes compared to those from the Neolithic (Ford *et al.* 1984, 159-61). This was supported by Herne's analysis of the Middle Bronze Age Shaft X material from Grimes Graves. Herne described the flakes from Shaft X as 'thick' and 'squarish', which he split into three groups of size; ½ fell into the small flake class and ¼ each into the other two classes (Herne 1991, 41), again showing little variation in the shape of flakes across the assemblage.

Both Ford *et al.* and Herne suggested a diminishing technology based on a lack of skill through reduced utilisation of curated flint implements. Ford *et al.* suggest that this was due to the increase of metal utilisation (Ford *et al.* 1984, 162). As a result they looked into the qualitative methods employed in flint core reduction from a number of sites. In contrast, Herne concentrated on the functional aspects of flint tools.

The Ford, Bradley, Hawkes and Fisher results

The Ford, Bradley, Hawkes and Fisher analysis (1984, 162-3) looked at a variety of factors to identify patterning that would highlight the ability of the Bronze Age knappers to remove flakes with a sharp feathered termination and a well formed shape. Measurements were taken for flake thickness, bulbar angle and termination on unmodified flakes and flake scrapers, all of which indicate the knapper's ability to remove what are traditionally thought of as successful flakes. The cortical state of each flake was also recorded to reveal the willingness of the knappers to remove the nodule's outer skin. Their analyses revealed a number of points regarding the processes of core reduction and flake production (Ford *et al.* 1984, table 2, 163, 164);

- The thickness of unmodified flakes remained stable, but those chosen for scrapers increased over time from the Later Neolithic to the Late Bronze Age.
- The bulbar angle only increased by 2° on average between the Late Neolithic and the Late Bronze Age.
- The sharp termination of flakes decreased by around 10% over time with less than half (44%) on average terminated with a feathered edge.
- There was an increase in the amount of cortex left remaining on pieces showing no effort to remove unnecessary outer material. In flakes the number which were $^2/_3$ cortical doubled in the early Bronze Age and decreased slightly by the Late Bronze Age but were still above Late Neolithic levels, whereas scrapers that were $^2/_3$ cortical decreased in the Early Bronze Age but rose sharply by the Late Bronze Age.
- The number of irregularly shaped flakes decreased in the Early Bronze Age but increased by c.7% in the Late Bronze Age (in Wessex the decrease was sharper and the overall increase was c.10%), whereas scrapers made on irregular flakes doubled from the late Neolithic to the Late Bronze Age, however, very few of these were found in Early Bronze Age assemblages.
- The number of cortical flakes suggests that cores were discarded when only partly used.

Herne's Shaft X results

Herne's assessment of the Middle Bronze Age flint technology of Shaft X follows a similar line to the Ford and others results, however, he analysed the assemblage in more depth to find particular patterns, which he argued, suggested that at this site 'core reduction strategy as we conform to does not appear to exist' (Herne 1991, 32). He identified that much of the flint technology used begins with the type of raw material chosen. We are used to assuming in all other flint industries that raw flint nodules were sought after and carefully chosen. In contrast, Herne discoved that by the Middle Bronze Age at Grimes Graves there was no mining activity taking place and that the raw material used came from the widely available floorstone in the form of quarter fragments, old cores and decortication flakes, and tool blanks that had been discarded on the surface and were residual from

Neolithic knapping debris (*ibid.* 29). Herne further suggested that if there were fewer demands on the end result of implements, then this easily available surface material was suitable, providing a flake could be removed from any piece (*ibid.* 29-30).

Having seen that this assemblage was very different in its 'style' and make-up to earlier assemblages, Herne embarked on a detailed analysis that provided a fresh look at Bronze Age flint technology insomuch as he attempted to leave behind all thoughts of what is *expected* and look instead for trends that are actually there. In doing do so he was then able to compare far more detailed technological aspects of this assemblage with our traditional notions of flint industries. His analysis found that the technological data could be described as follows (Herne 1991, 32-35, 41, 43);

- Hard hammer percussion to remove flakes was the only method recognised, evidenced by prominent bulbs of percussion and sharply defined percussion points on flakes.
- The number of removals from a core platform and per core was generally low with no evidence of platform trimming or rejuvenation.
- Ring cracks were common on flake butts (29%) and core platforms.
- Stress scars were common on dorsal surfaces and negative facets on cores.
- Removal angles were very obtuse, yet remained constant despite the thickness of the flake removed.
- The butts of flakes were generally single faceted (flat) primarily due to the natural fracture of material used as a platform, however, cortical butts were more common on larger flakes and evidence for prepared platforms on butts were totally absent.
- Dorsal scar evidence supports the core reduction strategy as the negative facets were irregular, suggesting the multi rotation of a core and a different platform used to the previous.
- 45% of flakes had a linear dorsal ridge which can effect the size and shape of a flake; most of these could be found in the larger flake class size.

The results from both Ford and others and Herne are supported by a number of individual Late Bronze Age flint reports, for example, the assemblage from Lofts Farm in Essex. Holgate described the assemblage as belonging to two chronological groups, the second of which he believed to be contemporary to the Late Bronze Age settlement. He describes the Late Bronze Age knapping technology as having:

> "involved taking a flint nodule, regardless of quality, finding a surface suitable for use as a striking platform and hitting the edge with a hard hammer with the intention of

> detaching robust flakes. About 42% of these flakes had plunged or ended in hinge fractures ...... numerous incipient cones of percussion are visible on a number of core surfaces, resulting from failed attempts to remove flakes."
>
> (Holgate 1988, 276)

Similarly, P. Bradley describes the assemblage from the Late Bronze Age site at Coldharbour Rd, Gravesend as:

> "The majority of the assemblage is a product of a simple unsystematic technology. Hard hammers were used almost exclusively, resulting in frequent hinge fractures and other mishits. Flakes are often fairly large, reflecting the availability of the raw material. Butts tend to be thick. Occasionally, thermal flakes were used as blanks for retouched pieces..... Cores tend to be irregularly worked and do not seem to have been reduced systematically. Core preparation is almost entirely absent, flakes often have cortical butts, indicating little preparation taking place. Cores discarded usually due to hinge fractures.... Tested nodules and multi-platform flake cores dominate the assemblage."
>
> (Bradley, P. 1994, 395)

Herne sums up this pattern of Middle Bronze Age flake removal as:

> "If the purpose of knapping was not to produce very specific blank forms, or even groups of flakes having a highly determinate outline, but was simply to generate large numbers of potentially useable pieces, then the knapping process for the Shaft X assemblage was highly efficient means of achieving this outcome."
>
> (Herne 1991, 47)

He is also at pains to state that:

> "The knapping process, although very basic and apparently unskilled, was nevertheless an efficient way of manufacturing the maximum number of potentially usable pieces for the least effort. In other words, the intention of knapping was the manufacture not of specific flint tool forms, but of pieces that could have served the same function."
>
> (Herne 1991, 32)

Despite these two statements Herne is not convinced that there was any core reduction strategy that envisaged an end goal of producing set of standardized tools, a notion we follow in understanding flint industries at present. Ford and others pose a similar argument when they summarise

> "The decreasing proportion of regular end fractures again implies that flint knapping was under-taken with less skill.....It is surely the crudity of these artefacts that has meant that they are under-represented in excavation."
>
> (Ford *et al.* 1984, 164)

Herne also suggests that there is no 'cognitive' or 'mental template' which knappers followed beyond rotating a core until a suitable platform was found and then hitting it (Herne 1991, 47). The patterns which appear to be constant for flake removal technology in both Herne and Ford and others and from the descriptions from Holgate and Bradley appear to have similar consistencies, which I would suggest, disagree with this statement insofar as any set of consistent trends within a technology must show some form of deliberate intent. To use the term unskilled in technology, would surely throw a set of inconsistent variables into the technological process. What is certain, however, is that by the Middle-Late Bronze Age there was a marked change in flint technology which consistently produced thick, squarish, irregularly shaped flakes that were then utilised or selected for modification into implements. Although this change in technology produced crude looking pieces, often with flaws to the resulting flake, this change has been viewed as deriving from a lack of skill. Yes the technology does appear to have diminished but is this really through a lack of skill *or* knowledge? Could it be instead a result of a lack of concern in the finished appearance of a given artefact as long as it was functional? Holgate does after all point out that 'robust' flakes appear to have been *intentionally* removed.

Functional analysis

Functional analysis can vary between reports of flint assemblages according to the individual analyst's methodology and views on waste, retouch and grouping systems. It is therefore difficult at times to assess patterns across a number of sites for function and tool analysis. This is particularly difficult if we are attempting to identify implements deemed diagnostic in traditional typologies in assemblages that do not appear to follow flint industry traditions.

Despite some very interesting results from Ford and others (1984, 164-167), which are discussed below, their research was hindered for this very reason. They were able to decipher which diagnostic implement types remained in use by the end of the Late Bronze Age, but appeared not to recognise any new or undiagnostic tools that may have replaced earlier curated forms. Their research was hindered first by the variation in recording methods for utilised pieces and regularly, yet miscellaneously retouched material and the generality of terms given to pieces such as knives. For this reason they omitted from their studies unmodified yet utilised pieces and combined those described as 'retouched, notched, serrated, or denticulated' as 'deliberately retouched' (Ford *et al.* 1984, 165). By omitting unmodified, utilised pieces they may have been overlooking an increase in an existing tool type (as these pieces have always made up part of earlier traditions), or at worst missed a new form of implement, even if it is one that is crude in design.

Regardless of these points, Ford and others have provided us with a picture of the traditionally diagnostic tool types which remained in use by the end of the Late Bronze Age. The results suggested that in the later Neolithic there was an average number of seven identifiable implements per site, this dropped to four in the Earlier Bronze Age, and down to three by the Later Bronze Age. At the same time, however, they note that their grouping of 'deliberately modified' pieces rose from 1% in the later Neolithic to 15% in the Later Bronze Age (Ford *et al.* 1984, 165-6). Table 2-1 presents their results for each implement type over the three periods, ranked in order of occurrence.

Ford and others noted that the pattern of reduction for tool types appeared to correlate with both the increased use of bronze and bronze implement types in Britain. For instance, flint axes and adzes disappear in the Early Bronze Age at a time when the number of bronze axes increased, as did bronze sickles and saws (Ford *et al.* 1984, 166). They continue the theme of metal tool replacement when discussing those tools remaining by the Late Bronze Age. They suggest that awls were retained due to their suitability as a hard material and that rods may have been used as strike-a-lights, implying that there was no metal equivalent as of yet to replace these flint forms. They cannot readily account for the persistence of scrapers and knives which remained in production, but there are two possibilities. First, both served a variety of functions and secondly, there is little evidence for large numbers of small metal blade tools until the Late Bronze Age (*ibid.* 167).

Table 2-1: (below left) Diagnostic implements utilised in each period ranked by order of occurrence identified by Ford, Bradley, Hawkes and Fisher (after Ford *et al.* 1984, table 4, 166).

Rank order	Later Neolithic	Earlier Bronze Age	Later Bronze Age
1	Scraper	Scraper	Scraper
2	Arrowhead	Arrowhead	Awl
3	Awl	Rod	Rod
4	Axe	Awl	Knife
5	Knife	Knife	
6	Rod		
7	Adze		
8	Saw		
9	Burin		
10	Sickle		

Rank order	Late Neolithic	Middle Bronze Age
1	Cutting flakes	Points
2	Points	Scrapers
3	Utilised blades	Rods
4	Scrapers	Cutting flakes
5	Axes	Utilised blades
6	Bulbar segments	Bulbar segments
7	Picks	Picks / burins
8	Roughouts	knives
9	Knives	
10	Arrowhead	

Table 2-2: (above right) Implements identified by Saville from the 1971-2 excavations at Grimes Graves ranked by order of occurrence (after Saville 1981a, Table XLVI, 68). Implements in blue denote those which Ford *et al.* may have omitted from their research as discussed above.

Similar results were found by Saville (1981a) in his analysis of material from excavations at Grimes Graves in 1971-2 (a different area to that studied by Herne). The material came from the old land surface, representing mainly *in situ* knapping waste, and the lower fill of the 1971 shaft (Neolithic), and surface material and rubbish deposited into the 1972 shaft

(Middle Bronze Age) (Saville 1981a, 68). Table 2-2 presents Saville's identification of tool types from the Late Neolithic and Middle Bronze Age. These have been ranked by frequency of occurrence to compare with the Ford and others data.

The ranking order differs from the Ford and others table for the following reasons. First, the Ford and others data is based on a number of sites. This creates an overall ranking order that could vary considerably if individual sites were represented. Secondly, Saville's identifications are based on one particular shaft and its surrounding area at Grimes Graves. Again, this ranking order could vary from one area to another within this site dependent on functional areas. The interesting correlation between these two tables is that there is a decrease in diagnostic tools into the Bronze Age with scrapers and points/awls dominating followed by rods and knives/cutting flakes. Another important point to note is the inclusion of utilised pieces including blades and cutting flakes in Saville's table (in blue) which highlights the necessity of including these functional pieces into any analysis. Their high ranking order is proof of their importance in a Bronze Age 'tool kit' and further supports Ford and others' comment, noted above, on the increase of 'deliberately modified' and miscellaneous pieces in this period.

Herne's functional analysis of the Middle Bronze Age Shaft X material from Grimes Graves takes a very different approach. He first disagrees with the Ford and others conclusion that there were fewer tool types and as a result fewer functions that flint tools fulfilled by the Late Bronze Age; he would also certainly agree that utilised pieces and miscellaneous retouched pieces should be included. On noting the discard of 'expedient tools' from the Ford and others analysis he argues that these still played a functional role in the utilisation of flint. The only difference is, by the Late Bronze Age, a few tools were still made in a regular form, making up part of an 'established tool kit', whilst the remainder were not (Herne 1991, 67). It might be argued further that all pieces that performed a function were part of the Late Bronze Age 'tool kit' and it is our own failing to identify new or changed implements beyond our existing typologies. Herne may agree with this point, as he suggests that typologies in terms of 'tool types' restrict our analysis, hiding the 'features of interest' (*ibid.* 68).

Instead of looking for tool types within our existing typologies, Herne approaches the identification of implements from a purely functional perspective. He attempts to identify single or multiple functions on individual artefacts regardless of whether a piece is retouched or not. He explains this approach as:

> "The analytical unit for such a study is not the individual tool itself but rather the functional specific working part or parts of an individual piece. This 'functional unit' is not always equivalent to the individual tool on which it is used."
>
> (Herne 1991, 47-8)

Herne goes on to suggest that the 'functional units' can be broken down further according to the hardness of the worked material they were used on (table 2-3). This is evidenced by the use damage present on each flint tool (Herne 1991, 48). Given that the four main tool types suggested by Ford and others (1984) and Saville (1981a) were scrapers, awls/points, rods and knives/cutting flakes it is interesting to note some of the functions that Herne suggests for these tools at Grimes Graves based on the position, orientation and type of use damage. Herne suggests that cutting functions may imply sawing, whittling and slicing activities, but that graving should be separated as a different mode of cutting from this description. Scraping would also include planing, and that the term boring also covers drilling and piercing activities (Herne 1991, 48).

Table 2-3: Herne's breakdown of 'functional units' based on position, use damage and on worked material hardness (after Herne 1991, Table 23, 48). Ranked in order of occurrence as seen by Herne (1991, 50).

	Edge		Point	Surface	
Cutting	Hard	Soft			
Scraping	Hard	Soft			
Graving			Hard		
Boring			Soft / Medium		
Smoothing	Soft / Medium				
Chopping	Medium				
Grinding				Hard / Medium	
Pounding				Hard	Medium

Herne discovered 137 'functional units' on a sample of 100 utilised pieces (72 complete and 28 fragmentary) at Grimes Graves (Herne 1991, 49, 50), showing that many pieces were indeed multi-functional. He was also able to identify the main technological stages (flake or core material) from which flint was chosen for utilisation. Flakes were used for all cutting edges, nearly all boring points and all scraping edges used on soft materials, whereas graving points and all scraping edges used on hard materials were found on both flakes and cores. Cores were almost always used for chopping, grinding and pounding functions (*ibid.*).

Spatial analysis of these 'functional units' helps us to understand how these tools fitted into the tasks carried out in different areas. Graving points and cutting and scraping edges used on hard material were often located in the same areas and their use damage was indicative of hardwood, bone and chalk working where Herne suggests detailed shaping, trimming and scoring were the most likely tasks (Herne 1991, 51). It is in these groupings of 'functional units' for a group of related tasks that Herne suggests multi-functional tools would be 'advantageous'. Another group of functional units was cutting and scraping edges and graving points on soft materials where the butchery and dismemberment of animals or the working of skins may have been some of the tasks undertaken. However, a number of cutting edges frequently appeared in isolation and may represent the prevalent use of such a functional unit (Herne 1991, 51-52).

Overall the functional units suggest that flint tools were primarily used in activities that were domestic in nature, although a few may have been involved in craft or more industrial tasks (Herne 1991, 52). Those that Herne sees as plausible activities are animal butchery, flint knapping, food preparation, garden maintenance, grinding of grain, working of bone and chalk, paste production, and vegetable and animal hide processing. Herne suggests that harvesting, hunting and carpentry are absent based on the functional unit classes although suggests that tools involved in these tasks may have been used offsite and subsequently do not form part of this assemblage (*ibid.*), although these tasks may have been performed using other raw material implements.

Based on his functional analysis Herne believes that many pieces described as 'irregular waste' from other Middle to Late Bronze Age flint assemblages may have been intended as tool products but have not been identified due to our traditional notions of core-flake technology and our existing typologies (Herne 1991, 65). He suggests that typologies impose a predetermined structure hiding the features of interest and as a result we should abandon the use of the term 'tool types' (*ibid.* 68). He also suggests we need a new model for the identification of Bronze Age flint where discussion on the reduction of formalised tools is not linked to their function. By this he means that all current models for the abandonment of flint are linked to the replacement of their functions in metal and that the only remaining flint tools are those as yet irreplaceable in metal form (Herne 1991, 66).

To summarise, all parties agree that formalised tools are considerably reduced in number by the late Bronze Age and that scrapers, points and cutting implements are the main tool types in use. In addition, the technology used *appears* to have become less skilled with a degree of irregularity apparent in the quality of flakes produced, less variation in flake shapes, and with little modification and curation of pieces. The disagreement comes in identifying the reasons behind this change in flint technology. Ford and others (1984) and Saville (1981a) believe that when metals came into use they automatically replaced the functions of many flint forms; the general notion held by the majority in archaeology. Where this does not appear to be the case, it is suggested that either metal was too expensive for that economy, it was unobtainable because of distance to the source, or that there was no replacement in a metal form for a particular function. Herne believes that a purely functional replacement theory is too simplistic and that flint technology and morphology is far more complex than this, however, he does suggest that flint utilisation may continue in regional areas on economic grounds where metals were too expensive (Herne 1991, 70-71, 74). To understand these changes we need to look beyond flint and metal artefacts alone and view them in their wider context of social use.

The changing role of flint implements

Although the spread of metals *is* one factor which leads towards the eventual demise of flint utilisation, to believe that it is the only one provides us with a very narrow and limiting view of Bronze Age society. Herne made his case clear when he suggested that the functional argument for metal forms replacing flints tools was too simplistic (Herne 1991, 66). Many archaeologists have addressed the idea that implements can have both a practical function and/or a symbolic or social meaning (Hodder 1986; Shanks & Tilley 1987; Tilley 1989; Barrett 1994). Edmonds is also of this view and believes that the demise of flint has more to do with how the raw material is perceived than an automatic technological replacement when he states:

> "For the most part, archaeologists have tended to assume that the disappearance of many formal stone tools in the Middle Bronze Age is a reflection of the spread of metal. Unlike the Early Bronze Age, later metalwork assemblages contain a wider variety of artefacts, many of which would have been suitable for a number of practical tasks. … This argument seems plausible enough, but it is not sufficient to account for the broader patterns that are discernable. … If the end of the Early Bronze Age had seen a gradual diminution in the capacity of stone tools to stand for people and practices, the course of the Middle Bronze Age saw a more dramatic erosion of that role."
>
> (Edmonds 1995, 187)

So what changes took place that led to the 'erosion' of flint to become less socially important? From the end of the third millennium many changes take place including monumental structures, mortuary practices, settlement types and the introduction of new artefact types including pottery and metals to name but a few. Underpinning all of these changes, however, was a transformation that impacted on all society. This was in the realm of social identity. Here it has been argued, that societies where large monuments and prestige goods were made and collected by the coming together of large social groups, under the influence of one or a few important people, was slowly eroded by the rise in importance of the individual (Bradley 1998, 145-6; Edmonds 1995, 139).

Edmonds discusses this change when he argues how many artefacts, in this instance Beakers, were used as a means of defining individual identity;

> "it does seem that the beginning of the second millennium saw an increased emphasis upon the display of status through portable wealth and the negotiation of political authority through the circulation of various stone and metal sumptuary items. ....artefacts such as Beakers were probably used and understood in a variety of ways. As the presence of direct imports suggests, it is possible that the ideas carried by a few of these vessels included references to particular networks of contact and alliance..... References to distant customs and forces perhaps attended their use, and may have contributed to their significance; but this may have been of secondary importance compared to their role in defining more localised expressions of identity and social position."
>
> (Edmonds 1995, 139)

This brings us back to Pyden's (1999) argument on the value of raw material, form and function. In Edmonds statement he is clearly making the point in discussing Beakers, that it is not the authenticity or the origin of the Beaker that is important, as after their initial introduction the majority were made locally. Indeed it is the form and function of the Beaker that dictates its high prestige value, and this value is not necessarily monetary but social. Therefore, in the case of flint, following Edmonds and Pyden, metals replaced stone/flint as one of the means to represent self and society, relegating flint gradually, but increasingly, into the domestic sphere. On this point, Edmonds describes how this appears to have been reflected in flint technology;

> "with each generation less and less importance may have been attached to the maintenance of traditional patterns of procurement ... where stone tools no longer served as important metaphors for people or their roles and connections, the boundaries between formal artefact categories may have become increasingly blurred. Indeed the learning of complex knapping techniques may itself have ceased to be an important feature in the lives of many people."
>
> (Edmonds 1995, 188)

Herne's statement expands on Edmonds point regarding how artefacts changed in the way they represented individuals;

> "The introduction of bronze was not an immediate success but its durability and malleability ensured its eventual takeover as a means of production. Its technical qualities were in direct competition with those of flint and, in the long run, these led to the abandonment of the latter as a material resource. But early scarcity and limited circulation meant that these long-term effects were not immediately important. The

> initial impact of bronze was on the set of values given to the prestige items. The earliest bronzes were slotted into this existing set, but in so doing they brought about ambiguity and then a shifting in the relative value of flint tools used, to represent male power."
>
> (Herne 1991, 72)

In essence, both Edmonds and Herne argue that during the Bronze Age, the objects that represented value, social status or social identity suffered a transformation, being represented ultimately by other means. Traditionally stone/flint was one of a number of raw materials (*i.e.* skins and furs) that provided both a social and/or economic value to a group or individual, as well as providing a functional and subsistence value. In the case of flint, the introduction of metals appears to have supplanted flint's social and economic value within society, even if in some areas the process was gradual. This ultimately left flint with a purely functional and utilitarian role.

Summary

The theories behind this change in technology and reduction in flint use are traditionally seen as a result of the introduction of metals. These are assumed to have provided better quality tools than equivalent flint forms and as a result replaced over time many of the flint implements. Some see this functional replacement theory as too simplistic and believe that the majority of flint implements were replaced only when metals became economically more viable than the collection of flint. A more interesting viewpoint is to consider instead the changes which took place in society regarding identity and self awareness, which affected everything from artefact choice to settlement and land boundaries. The fact that flint utilisation is still clearly in existence at the end of the Bronze Age, albeit in a different capacity as is suggested by the make up of the assemblages and their technology, suggests that flint utilisation was viewed as an important aspect of everyday life, even if the role it played was very different to that previously. It is this underlying change in how people perceived their surroundings, their possessions and each other which underpins the 'traditional' technological, functional and economic motives for the eventual replacement of flint by bronze.

There is a consensus nonetheless for the position of flint technology at the end of the Bronze Age. This is that the role of flint appears to have shifted solely to the domestic sphere, where it became a purely functional implement. As a result, the technology used to produce tools became less and less varied and more simplistic in its approach. As a consequence, the number of diagnostic implements that we traditionally see as part of a flint tool kit was reduced to scrapers, points/awls, knives and simple cutting tools, and rods. Less attention was paid to the form and stylistic appearance of pieces resulting in many miscellaneous retouched but very functional implements.

Chapter 3

Analytical and theoretical considerations

The Introduction presented a case for the study of Iron Age flint utilisation and technology and proposed a number of questions to structure this investigation. The previous chapter set the scene regarding flint technology and its role by the end of the Late Bronze Age. To better understand and identify Iron Age flint assemblages a major part of this thesis will focus on the technological and morphological attributes of the flint along with the context of its recovery. However, it is important to realise that, this alone would not constitute a sufficiently comprehensive study of the topic. To understand the nature of the flint we must study it within the social contexts of its exploitation. As such, a number of theoretical issues are examined, particularly in the areas of social, economic, and technological innovation within Iron Age society, and also how we apply our own analytical concepts and methodologies.

Theoretical considerations

There are four main areas of discussion; Settlement and function; Activities and craft specialisation; Technical innovation; and Analytical concepts. The first two are discussed only briefly, proposing that these areas must be considered in any analysis, not only to provide data for study but to encourage the development of more integrated studies in the future. The latter two, Technical innovation and Analytical concepts are discussed in more depth. Here I examine current conceptualisations of innovation in general, and along with analytical concepts discuss how we apply our notions of innovation, residuality, typology, function and style to our empirical and theoretical studies. A final point, economy has not been discussed as a separate entity, as I suggest that its relationship is entwined throughout all forms of behaviour regarding how we value items, raw material and time.

Settlement type & function

One field in which we may better understand the function of flint and the activities in which it was implicated, may be in the analysis of the types of settlement where Iron Age flint has been recovered. For instance, was flint exploited by groups of people living or working on hilltop enclosures or hillforts, lowland settlements (enclosed or open), or small farmsteads? By deciphering the types of settlement where flint was utilised, highlighting the dominance of any particular settlement type will provide data which will hopefully lead to a better understanding of the function of these sites in future Iron Age studies.

The study of site function can be a difficult task. For example, the function of hilltop enclosures and hillforts is still under debate (*e.g.* Hill 1995). The specific nature of a site may be inaccessible, yet its underlying basis may be inferred from the activities represented by the presence of certain artefacts. For instance, at a basic level the functional status of a site may be domestic (home/farmstead or settlement) or industrial (a site established to manufacture/exploit a particular element of its environment). Yet, even on an industrial site we would expect to see domestic activities if the site is permanently occupied, and likewise craft specific activities on a domestic site. A spatial study of activities in which flint was involved, including flint knapping itself, will contribute to the understanding of site type and function and how flint is related to these.

Activities & craft specialisation

As indicated above, the use of tools to carry out domestic tasks may overlap into the sporadic or continuous use of the same items in craft specialisation tasks. In this instance, the domestic character of a site dominates despite the small scale nature of the craft specialisation. On an industrial site the breakdown is much more complex. Not only are specialised tasks and activities taking place, but the site may be permanently, temporarily, or seasonally occupied. Therefore, domestic activities and artefacts are incorporated into the evidence left behind. In these instances, spatial patterning of artefacts as noted above can be crucial to the interpretation of where activities took place on a site, what activities are linked to domestic areas, and perhaps when they took place, providing this level of detail has been recorded.

Herne took a slightly different approach (see chapter 2, 18-20, Herne 1991, 47-52) where he used analysis of the functional elements of the flint tools recovered against the wear damage on these pieces to suggest certain activities within which they may have been implicated. At Grimes Graves Shaft X the activities for which flint implements may have been used appear to be solely linked to domestic rather than craft tasks with the exception of bone working (the majority of the deposit from Shaft X was considered to be midden waste from nearby settlement/s dumped into the Neolithic mine shaft); bone working is dependent on whether the working of bone is for use within a domestic sphere or as a product to be traded or given as a gift.

Considering Herne's analysis and the type of implement types and functions that we know to remain by the end of the Bronze Age we may expect to find that a number of activities are potential contenders for Iron Age flint related tasks. Those that have been considered highly likely on an intuitive basis are bone, hide, shale and wood working, food preparation (vegetable and meat), and light agricultural tasks such as threshing and grinding of grain.

By attempting to understand the complexities between a range of activities and the role that flint may or may not have played in these, we can achieve a more integrated understanding into the continuation of flint utilisation and Iron Age domestic/craft tasks. This is much more productive than simply studying flint artefacts and the technology used to produce them in isolation. Indeed as Alison has recently suggested a more integrated approach is urgently required in our post excavation methodologies (Alison 1997).

Technical innovation

A very important factor in understanding the continuation of flint utilisation beyond the Bronze Age concerns the understanding of the speed of technological innovation, a process which is led by social and economic factors. The Bronze Age is often treated archaeologically as an isolated phenomenon. The prime flint-metal replacement theory is simplistic in that it suggests that once bronze was available as a raw material then production and trade in bronze items automatically replaced stone tools. This concept takes a very linear approach to technological process.

Edmonds (1995) summarises the metal replacement assumptions very well, but in reading the final chapter of his discussion there is a feeling that he does not entirely believe that the Bronze Age saw the end of flint utilisation, but that it 'ceased to be an important feature' (as previously quoted in Chapter 2, 22). Despite Edmonds' recognition of the plausible argument for the spread of metals as a factor leading *towards* the decline in lithic utilisation (and this factor is not denied in this thesis), he suggests, I believe correctly, that the underlying factor was the rise of the individual that resulted in a dramatic change in how the two materials were perceived and valued (Chapter 2, 21-22).

The fact that metals became an important social factor in people's lives is not denied here, but neither factors are solid enough on their own to suggest that flint was automatically and abruptly replaced between the Late Bronze and Early Iron Age, leaving little room for flint utilisation in the Iron Age at all. The metal replacement theory is a very bold and simplistic assumption, whereas Edmond's theory does lead the reader to assume a more gradual and complex, yet ultimately dominant replacement of flint by metals. In essence, flint has been ignored in favour of the 'shiny toys' for so long, that eventually it has become axiomatic that flint was replaced by metal implements and that these became more important as status indicators and component elements in ritual offerings.

It is hard to believe how these assumptions came into being when it is widely accepted that initially, bronze was an exotic trade commodity, thus infiltrating the market slowly (Edmonds 1995, 187). We must therefore, try to understand the economic and social environment of the society in question, rather than attempting to place all Iron Age societies under the same banner.

By not attempting to understand each individual local environment and the technological options available to people living in it, or by assuming that metal technology was automatically exploited, we are guilty of the most blatant technological determinism. Although the general process of technological advance is progressive, history and ethnography have shown us that technological innovation is not always linear. Those who study current and historical diffusion of innovations seem to understand a great deal more about the social underpinnings that lead to the acceptance or rejection of new technologies than the majority of archaeologists. For example Rogers argues:

> "It should not be assumed that the diffusion and adoption of all innovations are necessarily desirable. In fact, there are some studies of harmful and uneconomical innovations that are generally not desirable for either the individual or his or her social system. Further, the same innovation may be desirable for one adopter in one situation not undesirable for another potential adopter in a different situation"
>
> (Rogers 1983, 12)

And Lemonier states:

> "whatever the type of technical phenomenon on which cultural options impinge, that is, "functional," rather than "stylistic" features, or vice versa or both, the fate of a new artefact or technical procedure depends upon its compatibility with the natural environment and with the state of the technical system at the time."
>
> (Lemonier 1993, 12)

To assume that technological advance was always linear or adopted without question can lead to grave misinterpretations of social and economic behaviour, particularly in prehistory. More importantly, if the above considerations are ignored then we downplay the ability of past peoples to make choices in terms of their technological, economic, and social activities. Thus, for a new technology to be absorbed by a society it needs to be *required* by a society, as a new technology is one among many alternative behavioural strategies, with separate costs and benefits, and often a technological specialisation is only altered/improved when a specific task is repeated intensively (Lemonnier 1993, 13; Torrence 1989, 4, 58).

Torrence suggests that the technological process can be approached from two directions (Torrence 1989, 60). First, by looking at the organisation of technological behaviour, such as the time and energy required to procure raw material, manufacture and repair the artefacts and the time and energy the products take in utilisation. Secondly, the assemblage can be broken into three areas for analysis:

a composition of functional tool types;
b diversity of tool types;
c complexity of tool types.

Torrence further indicates that technology is modified according to the risk factors involved with the tasks in which the technology will be used. For example, if the severity and/or the frequency of risk diminishes in the process of food procurement, then the technological aspects of food procurement modify and may also deteriorate. This may lead to a change in the function of the existing tools, and therefore, rudely made artefacts characterise assemblages because they are adequate for the purpose of the task since subsistence does not depend on them (Torrence 1989, 62, 65). Torrence stresses this point further by adding,

> "the consequences of failing to complete a task successfully, i.e. the severity of the risk, determine the extent to which the technology needs to be reliable. Nevertheless, no strategy can ever be perfectly reliable. Equipment will need to be repaired and replaced, but this behaviour need not be scheduled .... The tools can also be designed to be maintainable. The reason the use of a reliable technology is likely to be highly scheduled is that by its very nature, it will be expensive to manufacture; the extra expense of keeping it running, i.e. maintaining it, may often outweigh the benefits."
>
> (Torrence 1989, 63)

Torrence's strategies, which she applies to the Palaeolithic period, particularly the assessment of the risk factors involved in procuring dietary requirements, can also be applied to the Post-Bronze Age period. The use of metals by any given society would initially have carried with it substantial risk, and the risk factor would have continued at this high level for a long time after it had been introduced. Rogers (1983: 11) believes that innovations are adopted generally in stages (fig. 3-1). Predominantly, the risks would be economic as the initial cost of acquiring raw material and more so a finished product, would have been astronomical, taking a long time to fall to a more accessible level. Alone, the economic costs of procurement and repairs for the majority of societies in maintaining and/or replacing metal tools would have been high. It is suggested that the number of bronze hoards found over the years is evidence of this, whether they reflect management or manipulation of the circulation of raw and finished products, something hidden for safe keeping or a gift to the gods (Barrett 1985, 95-101).

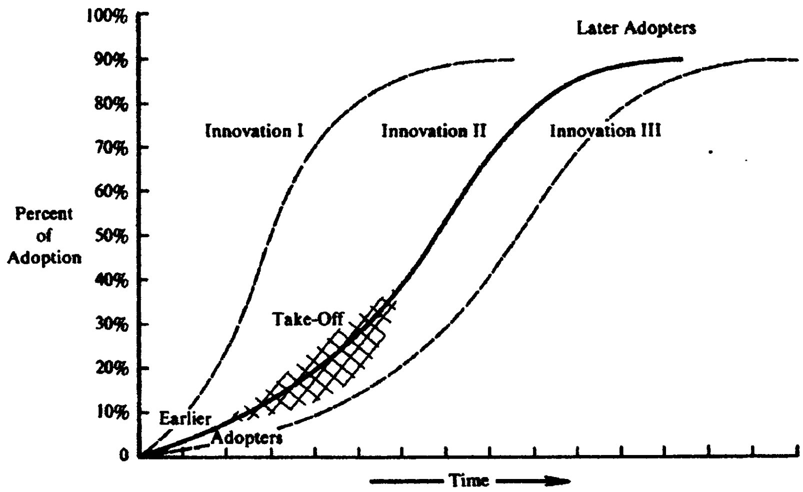

Figure 3-1 Rogers' stages of diffusion suggesting there is an initial innovation, which is adopted at different times via communication over time (after Rogers 1983, 11).

To counter the economic risk, a society would have to weigh up the social/status risk factors involved in not acquiring metal objects. This brings us back to Lemonnier's views on identifying what a society actually requires (Lemonnier 1993, 12, 13): do they require metals to carry out specific tasks, and can they survive socially without them? There are of course other factors such as the distance to travel for the procurement of materials, or whether the society shows an interest in a new technology. Some may have been initially apprehensive of the people who were involved with metal craftsmanship, thinking of them as 'dangerous'; (Barrett 1985, 101). The adoption of any innovation brings with it social change (Rogers 1983, 6), and this social change may already have been noticed by some individual societies yet to have taken on metals. We have, as a result, a chicken and egg situation. Did the technological innovation of metals spread because the demand for this new technology led to social change, or did it spread because of social change creating a demand to express identity using the new technology? Here the prospect of social change is also a decisive element when deciding whether to adopt or reject metal objects.

Until later prehistory, flint tools dominated the suite of implements utilised for the majority of activities carried out and it is evident that the efficiency of these activities relied heavily on the quality of the tools. With the onset of new materials and increasing sedentism through the Neolithic and Bronze Age the risk factors relating to subsistence activities declined, and based on our traditional assumptions flint technology appears to have declined with it (with the exception of a few prestige types *i.e.* arrowheads and daggers).

From careful reading of the sources discussed in Chapter 2 it does seem that metal tools are assumed to replace flint tools in terms of their *functions*. However, although many functional pieces are found in metal and may have been recycled, the majority of metal artefacts in the Late Bronze Age and Early Iron Age appear to be ornamental, including jewellery and some weapon types. Therefore, it is suggested that because we have concentrated on metal replacing flint tools by the Iron Age, we have generally overlooked the possibility of a new technology having a very different function *initially* – this being a social function; the view that Edmonds believes is responsible for metals replacing flint (Edmonds 1995, 187) – and we have forgotten about some of the more prosaic functions carried out by existing flint tools (see Chapter 2, 16-20). This oversight is exacerbated by the non-recognition of flint tools due to a change in technology used creating a less varied and multi-functional assemblage.

To address the issue of why flint was used or not used in preference to metals we need to ask several questions. For instance, was the continued use of flint tools taking place in areas where metals were utilised less or not at all in the Bronze Age? Did the abundance of flint raw material in some areas reduce the need for more expensive raw materials such as metals? The latter question is complex and highly nuanced. For instance, in Bronze Age Wessex there is an abundance of chalk flint, yet in this period the area has the greatest quantity of bronze and gold objects recorded from anywhere in Britain (Megaw & Simpson 1979, 209). In this instance, social interactions seem to have been much more complex as evidenced by the long distance trade of exotic objects and raw materials, and such interactions seem to have had a greater effect on the technical and economic activities of the social groups involved. Therefore, it is clear that both of the above points need to be addressed by examining social and economic issues in relation to the technological data to promote an understanding of whether a technology was, or was not, adopted and in which elements of society.

One way to address this problem is to compare the function of bronze and iron implements from the late Bronze Age and Iron Age with flint implements from the same period. It is possible that both materials are used to create tools with the same function, for example a cutting edge. In such a case, it may be argued that the choice of the material is economic and thus shows people's ability to acquire the metal. Alternatively, it may reflect a technologically prescribed problem in that people did not have the knowledge to manufacture metal objects. On the other hand it may be a combination of the two: not knowing how to produce metal implements and an inability to afford complete ones in any case. Yet, the choice may have been based purely on the best material for the required purpose, without economic and technological factors being involved. Here we may find that each material is utilised for different tasks, such as flint for graving and scraping functions and metal for cutting and chopping. This will be examined throughout the thesis where data is available.

In order to understand why a technology is absorbed or not I shall also be considering the type of settlement from which these materials have been recovered, the status of the communities using either or both materials, and the type of activities in which they were engaged. In doing so, we can attempt to assess why flint was still utilised by Iron Age people and the speed with which the technical change from flint to metals took place. Additionally, although technological, economic and social factors all play a part in the continued use of flint, it may be possible to gauge which of the factors played dominant roles in a given social situation.

Analytical concepts

The methodologies presently used in the identification of the characteristics of earlier prehistoric lithic assemblages are still useful when applied to pre-Late Bronze Age assemblages. On the other hand, these methods have not been added to, or improved because of the acceptance of our traditional assumption that lithic utilisation was redundant after the Bronze Age, thus making it difficult for new research to be initiated and undertaken. As a result, assemblage analysis has increasingly become more insular with less integration between artefact types. This in turn has led to a growing deficiency in our understanding of the wider context of artefact use and the place of artefacts in society. Edmonds observes that we do not satisfactorily study the social motivation behind lithic production because we view the end product as 'hardware', limiting its functional aspects to manual tasks alone where we believe that a 'satisfactory interpretation' is formed through detailed description and common sense (Edmonds 1995, 14). Furthermore, debates relating to function, form, and style have raised some very important issues in the last twenty years about how we conceptualise pre-Bronze Age lithic material culture (Conkey & Hastorf 1990; Schofield 1995; Torrence 1989). It is my contention that if these important approaches are applied to assemblages from post-Bronze Age sites, we will advance our understanding and identify, accept, and begin to understand the motivation for the continuity of lithic utilisation in the Iron Age.

Whittaker (1994, 270) argues that there are four factors that influence the shape of a stone tool; material, function, style and technology. This is true, but how we use each of these factors when analysing lithic artefacts depends on our current conceptualisations of who we think may have used them. As stated above, it is still generally considered that flint implements were no longer produced after the Bronze Age. Therefore, when assessing the above four factors in flint assemblages from Iron Age contexts the following assumptions are made before any metrical and morphological analysis takes place, leading to a dangerous circularity:

- Flint raw material was no longer required as metal replaced it
- The tasks carried out using flint tools were more efficiently performed by metal ones
- Forms of style were expressed via metals rather than flint
- Flint technology was replaced by the more advanced metal technology
- Flint found in post Bronze Age contexts must be residual

In essence, the argument suggests that all of the coherent and congruent factors that led to flint utilisation and manufacture were now applied to metal instead. The deficiencies in this assumption have already been highlighted above and in Chapter 2, but these factors taken together, have shaped the typologies created over the last one hundred years (and which we currently use). It follows then that if our assumptions about factors involved in the technological transition from Bronze to Iron Age are incorrect, then our typological sequences cannot be complete either.

Typology

Typological studies are frequently concerned with the coherent factors of technology and morphology and less with the social congruence behind artefact manufacture (Graves-Brown 1995, 12). In essence, they are simply regarded and used as a means of classification. This has resulted primarily because our typological and classification systems are based on the methodologies used by 19th century scientists to order data, resulting in a status quo with regard to how we develop and use typologies today (Alison 1997, 78). As they stand, the typologies that exist for prehistoric flint are restrictive, allowing for only pre-Iron Age industries to be identified. As such, it is crucial that we ask whether it is the way in which a typology is formed or the way in which it is used that makes it so restrictive. In an attempt to answer this question, I shall venture to breakdown what a typology actually is and assess whether we use them to their best potential. How are they formed, using what attributes (style, function, technology), and if one or all of these, what do we actually mean by these characteristics?

It is suggested by Klejn that typologies have been viewed and used as classifications because we have no widely accepted definitions for the terms 'archaeology' and 'type' (Klejn 1982, 1). Klejn goes on to explain why this is so, using a reference from the Austrian archaeologist Angeli, who suggests that the concept of typology has witnessed a constant changing of meaning in the study of prehistory because,

> "This term is used instead of the words 'appearance', 'description', 'comparison', 'seriation', 'evolution' etc. It is often taken to mean the general study of artefacts, this largely as a result of the close interrelation between the various methods of treating artefacts. In this sense 'typological' is almost synonymous with 'archaeological' (excepting excavation proper)"
>
> (Angeli 1958, 108 cited in Klejn 1982, 1)

The way that typologies have been conceived, may in part, be a fault of the scientific literature, which does not distinguish clearly the difference between 'types' and 'typologies'. The format in which they have been used to build archaeological inquiry has resulted in typologies becoming ends in themselves rather than 'conceptual tools' (Adams & Adams 1991, 8, 47; Alison 1997, 78). The Adams' brothers believe that to use them properly in archaeology, the understanding is crucial,

> "In our usage, a typology is a particular kind of classification: one designed not merely for categorising and labelling things, but for segregating them into discrete groups which correspond to our class categories and labels. This process of segregation we call sorting; the things that are classified and sorted we call entities; the categorical groupings into which they are sorted we call types. In brief and in sum, a typology is a particular kind of classification, made for the sorting of entities. A type, unlike other kinds of classes, is also a sorting category."
>
> (Adams & Adams 1991, 47)

Table 3-1: The elements that make up the process of classification (after Adams & Adams 1991, 31).

Mental elements	Physical elements	Representational
Type concept	Type members	Explicit type definition
Type category		Type description
Implicit type definition		Type name
		Type label

The process of classification has been broken down by the Adams (Table 3-1) who refer to this as 'typehood', yet it cannot be pinned down to a unique feature or group of features, as the 'definition of types depends on variable, or shifting criteria' (Adams & Adams 1991: 31, 179). They go on to describe the difference between classifying and sorting, an important factor I would argue underlying the way in which we currently use typologies as strict definitions.

> "Classifying is, very simply, the act of creating categories; sorting is the act of putting things into them after they have been created. One is a process of definition, the other of attribution"
>
> (Adams & Adams 1991, 47)

Klejn's stance is similar disagreeing with the idea that typology is no more than a cross-reference to classification, (Klejn 1982, 1). He further points out that many other meanings have been assigned to the term, but with no general agreement,

> "Kluckhohn (1960) declares that a classification is simply an empirical grouping of things according to their similarity and differences, while a typology is more theoretical in purpose and problem-oriented; Rouse (1972) suggests that classes are groups of things, real groups which an archaeologist can lay out "on a table in his laboratory", types are diagnostic complexes of traits in the researchers mind, and classification is a procedure culminating in typology; Dunnell (1971: 140) holds that typology is a variety of classification free of rigid distribution of parameters and procedures"
>
> (Klejn 1982, 1)

What does seem to be clear in all of the sources cited by Klejn, is an agreement that the grouping of types is more than the empirical classification of artefacts (in classifying types, the purely empirical elements have already been dealt with), and that theory also plays an important role; a view which I wholeheartedly endorse. Shanks and Tilley point out, however, that "it has begun to be recognised that classification is not independent of theory (Dunell 1971; Hill and Evans 1972) and that there is no such thing as a 'best' classification." (Shanks & Tilley 1987, 83). Indeed Klejn has argued that typology is a means to study the "overall significance" of 'objects' within a 'culture" (Klejn 1982, 3). This is very different to the simple assumption that 'typologies' can be viewed as an *absolute* identification for 'culture':

> "field archaeology is dominated by the chronological calibration of stratigraphic sequences, which, combined with ritualised obeisance to the god of typology, generally results in studies which can be regarded as purely monotheistic."
>
> (Cumberpatch and Blinkhorn 1997, *v*)

Problems arise again, however, when the basis for understanding theory's place in typology is still little understood or agreed upon. For instance, in an influential early discussion MacWhite defined what he took as the basis of typological theory:

> "typological theory is founded on two basic assumptions: 1) that types exist and are significant, and 2) that the changes which they undergo on the time scale and the spatial plane indicate cultural change."
>
> (MacWhite 1956, 229 cited in Klejn 1982, 18)

This of course falls down when MacWhite's model is broken down. Not all 'types' exist, for example identification patterns for post Bronze Age lithics. The fact that these 'types' do not exist means that any changes that they undergo in the 'time scale' and 'spatial plane' cannot indicate any cultural change within the artefact type. This is because our traditional concepts about lithic utilisation for the post-Bronze Age do not allow any room for them. In addition to this, most of MacWhite's typological theory hinges on the definition of 'types', which has already seen to be variable according to the individual's perception of 'type' and 'class' (Klejn 1982, 1).

Typologies can be extremely useful when applied with care, but due to the various opinions on the definition of typologies, they are often used in ways devoid of theory and original thought, hence our current flint typologies are useful but restrictive in their present format when attempting to understand new forms of flint assemblages, in this case, in the Iron Age. The latter are seldom identified, as there are no criteria set out for analysts to aid identification. Instead, typologies have been traditionally viewed as *the* absolute 'types' and *the* 'cultures' from which all identification is made (Healy 1993, 180; Shanks & Tilley 1987, 83).

Adams and Adams agree on this when referring to 'typologies' and 'types' and state that 'they are tools of communication. They are not facts, processes, theories, or laws, though at one time and another they have been mistaken for all those things', saturated with academia's craving for analytical techniques (Adams & Adams 1991, 5; Cumberpatch and Blinkhorn, 1997, *v*). Therefore, in archaeology, typology is primarily used to make cultural comparisons and to organise relative chronological sequences (Herne 1991, 68), but it would be more useful if we used it to frame questions appropriate to the particular circumstances at hand, in essence, the typology created must have a *purpose*. The Adams' argue that purpose in typology should entail the following,

> "will determine not only the variables that are and are not to be looked at, but also the kinds of attribute clusters that are and are not considered significant. The more clearly the typologist is aware of his purpose, the more rationally and systematically he will be able to select variables and to designate types that will be relevant to that purpose. But purposes must not only be conscious; they must also be clearly specific."
>
> (Adams & Adams 1991, 52)

For instance, in this study the main purpose of creating the 'types' and 'typologies' is to establish why Iron Age societies continued to use stone tools, what part they played in society and what type of stone technology was applied in their manufacture. But it does not mean that in creating a typology for this purpose it is forever fixed; it can and must be modified accordingly when circumstances change for example, variations in attributes of the lithics or lithic material from Roman or medieval sites is incorporated where the activities may be very different. By not allowing for a typology to be flexible, or develop new typologies from new data rather than forcing the latter into pre-existing frameworks, Iron Age flint assemblages have remained unnoticed. We further compound this problem by not analysing assemblages because of low numbers and /or diminished technology. Thus, we do not look for ways to make typologies flexible by prejudging material through the use of fixed typologies from the outset. Torrence makes this point when discussing technological typologies,

> "Instead of converting properties into rigid types and then trying to fit data into these inappropriate categories, it would be more productive to work with continuous variation and to attempt to discover the causes for the original observations."
>
> (Torrence 1989, 64)

In relation to these discussions regarding the distinctions between classifying and sorting, a preliminary classification of Iron Age flint has already been carried out in pilot studies (Humphrey 1996; 1998; Young & Humphrey 1999), where groups of lithic assemblages from Iron Age contexts were examined to find patterns that would allow a 'typehood' to be established. Two processes will take place in this study: 1) a comparison of the lithic assemblages presented here to the 'types' previously established and 2) the sorting by attribution of lithics from a sample of Iron Age sites is tested to see if the 'types' can be formed into 'typologies', where *similar* groups can be suggested to be contemporary with each other. The second purpose of developing a flexible typology in this thesis is to identify Iron Age assemblages in order to integrate them with the other Iron Age material culture, so that we can more fully understand the activities of particular Iron Age communities.

Function

The Chambers 21st century dictionary (1999) definition of function is a "mode or activity", by which a thing fulfils its purpose. All too often in lithic analysis this is taken literally and an implement is described solely in terms of performing a specific function. Terms such as 'scraper' 'piercer' and 'arrowhead' are useful for general artefact identification, but once these terms have been given to specific artefacts, then their 'function' is automatically limited to the range of tasks deemed pertinent to that particular 'artefact' form. Whittaker (1994, 270) states that this has developed from a time when early prehistorians had very little real idea of the actual functions of many lithic artefacts. At present, a suitable replacement for quick basic descriptions in literature has not been developed, although Hernes' (1991) research on the assemblage from Shaft X at Grimes Graves, Norfolk has made a move in this direction.

This limited approach to the understanding of function creates further problems in our understanding of the life cycles of artefacts and the behavioural patterns underlying their manufacture. It is generally forgotten that one stone tool may have started its life with one function and ended it with another, or that it was used for a multiple set of tasks. In the case of the former, the different types of function may be separated over great periods of time if the material was recycled from an earlier period. Therefore, by not observing the potentially very different functional patterns of the artefact, we are also missing all of the behavioural patterns that are imprinted into the artefact by the manufacturer or utiliser (Hurcombe 1993, 147).

There can be great difficulties in discerning whether a tool was uni- or multifunctional. For example Torrence argues that:

> "calculating the diversity of an assemblage may be easier than reconstructing its composition according to functional tool types (given a standard typology is used consistently), but archaeological data are still problematical because it is not always easy to discern whether an individual artefact is a complete entity or simply part of a multi-component tool. For archaeologists by far the easiest aspect of assemblage structure to study is complexity as defined by Oswalt (1973; 1976). For this measure he has devised the concept of the technounit, "an integrated physically distinct, and unique structural configuration that contributes to the form of a finished artefact" (Oswalt 1976, 38). Complexity is then either calculated as the total number of technounits in the assemblage or the average number of technounits per tool."
>
> (Torrence 1989, 61)

The problems with identifying functional tools, particularly those which are multifunctional, lie in our perceptions of functional analyses which are based on the retouch present on an implement. Graves-Brown goes so far as to suggest that, "conventionally, we tend to think of functionality as obvious" (Graves-Brown 1995, 10), for example we use a knife for cutting, but a knife can also be used as a stabbing instrument. To take this point further, a knife may be used in a domestic context as an eating aid, or for food preparation, and also in relation to many craft activities, but it can also be used in an aggressive manner in a fight or in a battle. Therefore, the function/s of a lithic artefact may not be recognised, particularly if it is an unmodified piece; despite the general acceptance that a simply struck flake with a feathered termination could be used as a cutting implement. Much of this is due to our methodologies being based on analogies between retouched artefacts and ethnographic and experimental studies, yet these tell us more about how an implement 'could' be used rather than how the implement in question 'was' used (Whittaker 1994, 281-2).

Very often, the use potential of undiagnostic retouched or unmodified flakes/chunks is missed due the lack of consideration given to them in analytical reports. This is seen best by the pigeonholing of these artefacts under terms such as 'utilised flakes' and 'unretouched flakes' and the fact that they are seen to be more associated with waste material (Gero 1991, 165). In consequence, we are potentially allowing many functional and utilised pieces to slip by when following this rigid set of ideas as to what makes a struck flint functional. For example, in a lithic report published in 1966 the specialists declare that they excluded 'utilised flakes' from their graphed results 'because they are not diagnostic and because their quantity is such that they distort the graph (Binford & Binford 1966 cited in Gero 1991, 165). The fact that they were disregarding a large proportion of technological evidence means they were ignoring a part of the assemblage which may have held clues to the function of the assemblage as a whole. In particular, they were ignoring the behavioural strategies behind the choices by which flakes and/or chunks were or were not selected for utilisation. If we are to understand why some were modified then we also need to look at those that were not and yet were utilised anyway, in order to understand their purpose.

It is clear that at present we wrongly place too much importance on formal aspects of tool manufacture such as retouch, in discussing tool function. This manifests itself in the assumption, widespread among lithic analysts, that flint technology does not exist after the Bronze Age because the small number of artefacts from later contexts show minimal formal modification. This is based on the general trend of a diminishing flint technology observed down to the Late Bronze Age.

In addition, by continuing with our current typological sequences which require that we follow specific paths to determining functions which are based on descriptive grounds, we do not even begin to understand the thought patterns of the manufacturer. At present, we add the cultural factors to the flint artefact after *we* have decided what the function was. We should be investigating the cultural factors of the individual or society that would have utilised these tools *before* we begin to assess the function of the individual flint implements.

Graves-Brown suggests that two forms of thought processes are carried out when producing a functional object and that these two cannot be separated. These are what he terms 'coherent' and 'congruence' factors,

> "A coherent solution to sawing metal or wood is to produce a hard edged blade with teeth or serrations which serially cut into fibres of the material. In hand held saws the teeth are, usually, arranged to cut on the down stroke, when the arm can give maximum impetus. Cutting on the pull stoke would be incoherent in most contexts.... Accepting that there are a multiplicity of coherent solutions to a given functional

> problem, any society will gravitate, historically, towards one solution (see Lemmonier 1989). .... Wynn (1991) has argued, the adoption of a habitual solution to a technical problem simplifies and facilitates social life – if every carpenter used a saw that functioned in a different way, DIY stores would be very chaotic places. In a cultural context a tradition of what is appropriate to a certain task is built up (Wynn 1991), and artefacts are judged with respect to congruence with that tradition. In other words, and over and above whether an artefact is made coherently, artefacts are made to be congruent with our expectations about function."
>
> (Graves-Brown 1995, 10-11)

If we refer back to the knife analogy used earlier, we can also make the point that many different forms of the same tool may represent one general function. If we take a knife from our dining table, we know that the purpose of the knife is to cut, hence the coherent factor. Yet, a full set of dining knives can consist of up to six implements, each performing the same but ultimately distinct functions. This is because of the social congruence placed into designing each knife for a specific task, thus the subtle differences manifest themselves by variation in appearance. This in fact shows that the uni- or multifunctional aspects of tools all depend on the manufacturer and the user of the tool and do not follow a strict functional design, particularly one laid down by the lithic specialist.

A starting point will be to integrate the rest of the material culture associated with the site in question with the flint assemblage, and thus begin to build a picture of the type of lifestyle that people had and the type activities that they performed. Then, when trying to follow the reduction of raw material and the modification of some pieces, we can begin to comprehend the thought processes of the manufacturer. If we do not allow for the congruence invested into a tool, then we are ignoring the ability of prehistoric flint knappers to make choices available to them in flint technology, and by the society to choose the right type of raw material available to them.

Style

Style has been used and discussed over the years in the same manner as artefact typologies – to pigeonhole and classify in a formal way, with each new idea and theory classified by rigid terms and labels (some of which are discussed below) in which data and descriptions are forced into by students and researchers (Conkey 1990, 6). Attempts to pinpoint what style actually is and how it manifests itself have resulted in very limited concepts, most of which revolve around identity. Shanks and Tilley point out that traditionally archaeologists may have mistaken ethnicity (stylistic variation) for functional variation, a debate which began in the early 1970s and still seems to still be a focus for discussion (Shanks & Tilley 1987, 86). Yet, here lies a contradiction, if style is used to show ethnic identity then it is in fact performing a function itself and cannot be separated from functionality, as Binford suggested in 1973 (see Shanks & Tilley 1987, 86). However, the way in which we continue to use style in archaeology leaves us stumbling between two positions. We are either pursuing clues to the meanings and contexts where styles were at work in a culture, or we are manipulating attributes and patterns in assemblages and artefacts in order to measure the cultural phenomenan that we want style to unveil to us (Conkey & Hastorf 1990, 3).

When discussing function, it was suggested by Graves-Brown that function can be created in a variety of ways depending on the coherent and congruent factors involved (Graves-Brown 1995, 11). Most style theorists including Conkey, Weissner and Binford believe that style does in fact perform a function by giving an object identity (Conkey 1990, 10; Weissner 1990, 107; Binford 1965/1973 in Conkey 1990/Shanks & Tilley 1987, 86). In the last decade however, others such as Sackett have argued that the choices made between functional varieties, such as those discussed by Graves-Brown, are entwined with stylistic variation (Sackett 1990, 33). He refers to this as isochrestic variation:

> "there normally exists a spectrum of equivalent alternatives, of equally viable options, for attaining any given end in manufacturing and/or using material items. I refer to these options as constituting isochrestic variation."
>
> (Sackett 1990, 33)

He stresses this point further by later adding:

> "style and function are not distinct, self-contained, mutually exclusive realms of form in themselves, but instead complementary dimensions or aspects of variation that co-exist within the same form."
>
> (Sackett 1990, 34)

Shanks and Tilley both agree with Sackett in that function and style cannot be separated and state:

> "It is impossible, for example, to separate out the style and the function in either vessel shape or projectile point morphology. There is no way in which we can meaningfully measure and determine what proportion of a vessel's shape performs some utilitarian end, the remainder being assigned to the domain of style."
>
> (Shanks & Tilley 1987, 92)

As with most methodologies, lithic technology is either taught or learned from older or more experienced members of society. These techniques are all chosen from a selection of the overall possibilities available that result in the same end product, albeit with variations. This may be either a result of the only known method, therefore an unconscious choice, or the preferred method – the 'proper' way, a conscious choice (Close 1989, 5). Sacketts' views on isochrestic variation are very similar to Close's, even though they are expressed differently, when he discusses how style fits into the iscochrestic model:

> "Style enters the picture when we see that the artisans of any given fraternity (or sorority) are aware of only a few, and often choose but one, of the isochrestic options potentially available to them when performing any given task, and that the choices they make are largely dictated by the technological traditions within which they have been enculturated as members of the social groups that delineate their ethnicity. .... The likelihood of unrelated groups making similar combinations of choices is as remote as the number of potential options is great."
>
> (Sackett 1990, 33)

For example, the retouch applied to a flint tool does not necessarily relate to function; if it does, then it does not always have to be in the same place. Retouch is not always added to make the tool perform a function, but to make it functional to the user, to make it comfortable to hold. Where the retouch is placed can therefore lie in the decision of the user, whether this is through conscious or unconscious thought.

Weissner also agrees with the concept that function and style are entwined (Sackett 1990, 39), but she deals with this notion in a different approach. She agrees with the idea that the manufacture of artefacts and behavioural patterns can be a consequence of conscious and unconscious thought, which she terms 'assertive style'. She argues that the 'assertive style' varies according to what we have learned or require, but she also suggests that there is another form of style – 'emblemic style', which involves a deliberate choice to give an object a recognisable identity (Weissner 1983, 257-8). The concern here however, is how 'style rich' an object is. 'Emblemic style' would be seen as 'style rich' because it includes features that are not necessary to an artefacts function, such as decoration, or for instance, how a stone is hafted. Herein lies the key argument. If two groups within society each produce scrapers that perform exactly the same function, but were retouched in a way that we could tell them apart, is this 'assertive style' where they were produced consciously/unconsciously in the only/preferred way that the groups knew, or is it 'emblemic style' because we can identify the groups?

It would seem then, that unless an object is obviously 'style rich' it would be best to approach this type of theoretical discussion in a much more straight forward manner rather than tying ourselves up in knots over terminology. Graves-Brown has put forward the notion that style is a form of common method rather than an expression of fashion (Graves-Brown 1995, 11) and it is this definition that will be followed here.

In terms of post-Bronze Age lithic utilisation, it was once argued that its style was 'crude' because the technology had diminished and style was obviously not an important consideration (Humphrey 1996). This was based on an understanding of style in its 'style rich' format. In contrast, the present study argues that it is not that style was not present in Iron Age lithics, but that it embodied a *different* style, a *different* set of aesthetic qualities brought about by the different set of technological risk factors, economic considerations and social aspects of a given society which all manifest themselves in individual and group behaviour.

Residuality

A last point to address while discussing the use of analytical concepts is that of residuality. All too often lithic assemblages from later prehistoric sites are viewed with suspicion regarding their contemporaneity, especially post Bronze Age material. It has become an easy option to lump flint material from these sites into this category supported by the metal replacement theories that result in an over use of the term 'residual'. Of course residual elements occur on many sites, particularly later prehistoric and Roman, but the term should not be used in place of a detailed assessment of the assemblage and site formation. Often we see that assemblages from Iron Age contexts have been attributed to residuality either because they have no recognisably diagnostic features, are described as the waste from a previous later prehistoric activity, or because a few pieces are actually residual the remainder is considered to be contemporary with these pieces. Before freely using the term residual in any assemblage we must be clear as to where we believe the material is residual from. The term residuality is not merely an adjective to describe material which cannot be readily explained on a site, it is an analytical tool which can cloud our judgments if not used correctly. In preliminary examinations to this study it was quickly realised that our casual use of the term 'residual' had reinforced the notion that Iron Age flint assemblages do not exist. This led myself and a co-author to question in detail how we use the term:

> "It is easy to describe flint material as 'residual' if we have evidence for early, as well as later, human activity on a particular site: but what about those sites and contexts where evidence for earlier material is not present? Similarly, what are we to make of those sites where flint occurs in sealed association with nothing but later Bronze Age or Iron Age material? It is simply illogical to automatically consign lithics from such sites and contexts to the dustbin of 'residuality'."
>
> (Young and Humphrey 1999, 234)

The current study therefore, pays particular attention to residuality when assessing flint assemblages. This will be a difficult task in many cases, relying on published data for evidence, and deciding whether the flints recovered from Iron Age contexts are residual or not. Many assemblages will present complexities where it may be difficult to decide whether the deposition of flint artefacts in Iron Age contexts was deliberate or accidental, particularly in the case of artefacts that suggest earlier evidence such as diagnostic scrapers or arrowheads. Two main difficulties therefore occur, which need addressing if a methodology to distinguish between them is to be developed;

a) distinguishing between accidental and deliberate residuality and

b) determining whether the flints are residual or not.

In order to identify these differences we must understand the complexities of the different aspects of residuality. Accidental residuality encompasses scenarios such as earlier material redeposited into later contexts, or the collection of earlier curiosities dropped or lost on site. Deliberate residuality may indicate the curation, collection or reuse of earlier material or structured/ritual deposition of these earlier pieces.

We can use a number of methods to distinguish whether all, or parts, of a flint assemblage are residual or not. First, does the assemblage as a whole represent earlier industries or are there very few indicators, if any, to suggest that the material represents earlier activity. Second, is the assemblage structured, such as evidence for the whole knapping production or are only finished and unmodified flakes recovered. Third, if diagnostic pieces are recovered such as scrapers, knives or in particular cores/core fragments, is there any evidence for reuse in the form of fresh flake scars or utilisation wear on top of any recortication. Forth, is there any other evidence present on the site to support an earlier presence that would suggest that the flints are associated with earlier activity. Fifth, by context association and assessment of the type of context the flints have been retrieved from should support and argue against the residual argument for undiagnostic assemblages or the deliberate reuse of earlier isolated pieces. Each of these indicators, if applied appropriately, should enable the identification of residual and non-residual assemblages (or parts of the assemblage) and aid in distinguishing between accidental and deliberate residuality where these cases occur.

To conclude the discussion on analytical concepts, the key conclusion to be drawn is that a fresh mind is essential if conclusions about the flint are not to be made prior to knowledge of how, where and by whom the flint was being used. This informs the remainder of the thesis and lies at the heart of my attempt to fashion an approach to the recognition and study of Iron Age lithics.

Chapter 4

Methodology

Study area

A comprehensive study as attempted here is potentially a mammoth task, and therefore a manageable study area had to be considered. The amount of data concerning Iron Age excavations throughout Britain is vast and as such too large to deal with in one PhD thesis. A sensible sampling strategy was required, and as a result a line was drawn from the mouth of the River Mersey in the west, to the west corner of the Wash on the east coast, the area south of this line comprising the area of this study. Although essentially arbitrary, it was felt that this was the most un-problematic strategy for the following reasons.

First, if a modern political boundary system had been applied, such as Iron Age sites within the modern southern and eastern counties of Britain, the partitioning of sites for analysis and explanation would have become an easier, neater task. However, the relevance these boundaries have for modern societies has no relevance to any boundary structure present in the mindset of Iron Age people. Therefore, when assessing where flint utilisation was taking place and trying to find patterns in that process of utilisation, an inappropriate boundary placed over the top of these patterns may considerably alter the view of distribution. It was deemed far more useful to view the distributions against an essentially blank map of Britain and then apply any knowledge of Iron Age boundaries to the conclusions put forward.

Second, to simply choose Iron Age sites on purely geological grounds is also pre-determining the data set. If we are only to analyse sites that are situated in areas where flint is available in the immediate locality, we disregard a vast proportion of sites that may have utilised flint, and from which people may have travelled a short distance to acquire it. By this period, it is not thought that people valued flint enough to travel or trade long distance for the raw material. However, geological analysis of flint procurement is useful and discussion on the procurement of raw material sources will be applied where relevant.

Third, a judgement that people only used flint where they could not get or afford metals creates similar problems from the outset. Primarily, choosing sites with a lack or absence of metals, leads to accusations of economic determinism. Furthermore, there are sites that produce metals which are situated close to trading routes, such as the River Thames, where many metal artefacts are recovered. In addition, along many rivers there are many gravel terraces that may have been a primary source of flint procurement in this period. Consequently, the relationship between the economic status and environment of a site (such as its proximity to trade routes), and the environmental resources available for exploitation may be closely related.

Fourth, the area below the Mersey-Wash line was chosen as preliminary studies to date have shown that the majority of sites producing flint artefacts are in the south of Britain. It is hoped that the diversity of site types, geology, social behaviour, and economy within this area will provide sufficient information to assess the factors behind flint utilisation. This is not to suggest that the area north of this line is not worthy of research. It provides material for future research, enhanced by its contrastable nature with regard to all of the factors mentioned above. For example, further north stone is more abundant, but geologically different and flint is used less as pebble flint is not plentiful and coarse stone and bone is often worked instead (Wickham-Jones 1994: 19, 71, 73-74). These elements need to be addressed as the evidence of flint exploitation is all part of a broader understanding of the continued use of stone. Lastly, Ireland has not been included in the study area for the same reasons. Very different patterns have arisen in Irish prehistory in comparison with those of mainland Britain (Megaw & Simpson 1979: 71, 236, 293).

The latter two points highlight areas where additional intensive studies are required. As stated in the introduction, one purpose of this study is to provide a structured foundation for future research in other areas of Britain and Europe such as these.

Flint analysis & methodology

Data collection

Initially, the British Archaeological Abstracts provided a list of articles, papers, and books that have site information for the Iron Age. This provided a systematic basis for the collection of gathered data. However, as the British Archaeological Abstracts began in 1968, any Iron Age data prior to that date was in danger of being overlooked. Therefore, whilst retrieving articles from local archaeological journals, all pre-1968 journals were checked for potential Iron Age data. This was more difficult in the case of excavation reports published as books and monographs. In these cases, three methods were utilised to locate any relevant pre-1968 data:

- the UNICORN library catalogue browser;
- manually checking the library's archaeological shelves;
- checking the bibliographies of all articles read.

A constant sensitivity to the type of information published has been observed throughout the data collection, including where the information has come from and the type of data it provides. For instance, an excavation report from a journal may not be as detailed as a book/monograph dedicated to a site, yet will have more than a notes section in a journal, a newsletter article or an article in a popular archaeological magazine. In the latter cases, these have been used as guides to finding further information. However, the decision not to use the numerous yearly 'excavation round-ups' in local archaeological journals was made purely on grounds of available time.

As a result, data was retrieved and kept if the following attributes where observed:

1. The flint on the site must have come from Iron Age contexts. Preferably, these should be sealed, as this is crucial to the argument, (see the discussion of residuality in chapter 3).
2. If the site had no evidence of earlier activity it is usually concluded by the specialists that the assemblage belongs to one of the following categories;
   a. Unless diagnostically earlier the assemblage is assumed to be residual – usually Neolithic, though it may be possible to argue against this.
   b. The assemblage is suggested to be contemporary but some uncertainty is expressed about the relationship
   c. Occasionally but rarely the utilised flint is concluded to be Iron Age.
3. If earlier activity was also present on the site and the assemblage is diagnostically early, then the site was discarded. However, if a multi period assemblage suggests that one level of the assemblage is contemporary with the Iron Age evidence due to its characteristic attributes and/or its context, then it was kept.

In assessing the above scenarios, the type of context and recovery has also been carefully observed, for example, the type of feature where the flint was recorded (*e.g.* ditch, gully, pit, and posthole) along with how it was dated. In the case of the published and primary samples, all other material artefacts present in the same or associated contexts where flint was recovered were logged. If there were no dateable artefacts in these contexts, then material from contexts directly above and below the flint material was recorded where possible. The association of other earlier relative datable material, for instance pottery, also helped to weed out any uncertain residual material.

In using the above methodology for collecting sites with potential Iron Age flint assemblages, the data set offers a firm basis for analysis. In order to create two samples for detailed analysis, (published and primary), a further set of considerations were applied to the collected data.

1. It may not be possible to locate an assemblage for primary analysis;
2. Further information than that provided by the brief/summary report may not be located *i.e.*

a. Paper/microfiche archive
   i) context data of flint assemblage
   ii) context data of other relative dateable material *i.e.* pottery and metals – essential for aiding dating associations *and* information of associated activities and crafts;

3. Predominantly the size of the assemblage is important when considering time and travel to reach each of the located assemblages. Despite the argument about the reduced size of assemblages (see chapter 2), the practicalities of travelling large distances to analyse less than 20 flints deems the assemblage impractical. Yet, because of the identified characteristic of Iron Age assemblages the information on sites with less than 20 pieces is retained. Such sites make up the study comprising the general overview. Furthermore, they are integral to the discussion on utilised flint retrieval methods on excavation sites.

Methodology of primary flint analysis

A number of both basic and more complex metrical and morphological attributes have been selected to analyse samples of assemblages chosen from the published review. A polythetic approach is taken where no single attribute is deemed more important than another. Instead, the assumption has been that a combination of attributes is of more value, as this provides a group of characteristics with which to analyse an assemblage. These attributes include all of the basic elements used to analyse flint assemblages by the majority of lithic specialists, but with some less common additions. Some of the latter (such as consistent recording of butt/platform details, incipient cone recording and dorsal scar features) were added to the list in preliminary studies (Humphrey 1998, Young & Humphrey 1999). These further highlighted the pattern of less varied assemblages that Ford and others (1984) had seen in Late Bronze Age examples. Additions to the preliminary studies such as flake curvature, flake class size and negative hinges are hoped to expand the number of patterns that may arise to in order to build a more informative and characteristic list of criteria for the identification of Iron Age flint assemblages. Furthermore, Fasham and Ross' scraper and borer group systems (1978, 61), Ford (1987, 70) and Clark's (1960, 216) core evaluations and dorsal scar ordinal evaluation (Andresky 1998, 106) are tested to find if any of these techniques are suitable for building a new flexible typology.

The following is a detailed list of attributes used to analyse the assemblages in this thesis, (see analysis form used: **CD** Appendix 1).

<u>Find No.</u> – the original identification number given to individual artefacts.

<u>Context</u> – the context number and information about where the piece was recovered.

Length – the length of the flake or implement in millimetres taken along a line perpendicular from the striking platform to the distal end (fig. 4-1).

Breadth – the breadth of the flake or implement in millimetres at its maximum distance, but parallel to the striking platform (fig. 4-1).

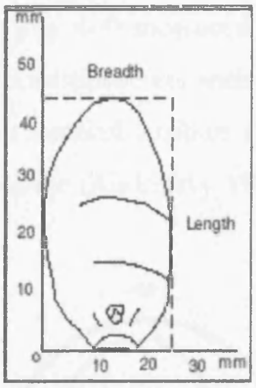

Figure 4-1: Measuring the length and breadth of a flake

Thickness – the measurement of the thickness of a flake or implement between the ventral and dorsal faces at its maximum distance (fig. 4-2).

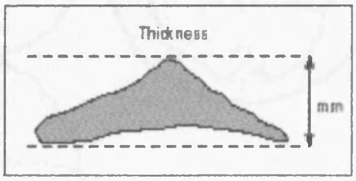

Figure 4-2: Measuring the thickness of a flake.

Flake curvature – the arc created at the height of an isosceles triangle which best fits into the length of a flake by using three measurements – maximum length, thickness at midpoint and angle of height (fig. 4-3) – this is calculated by deriving height (H) of ventral curve by subtracting thickness at midpoint (T) from angle height (A): half the flake length (L) is (M), ∴ by dividing (M) into the arc tangent of (H) angle 'a' is achieved, angle 'b' is achieved by subtracting 'a' from 90°.

To obtain the required curvature measurement 'c', angle 'b' is then doubled (Andrefsky 1998, 107-8).

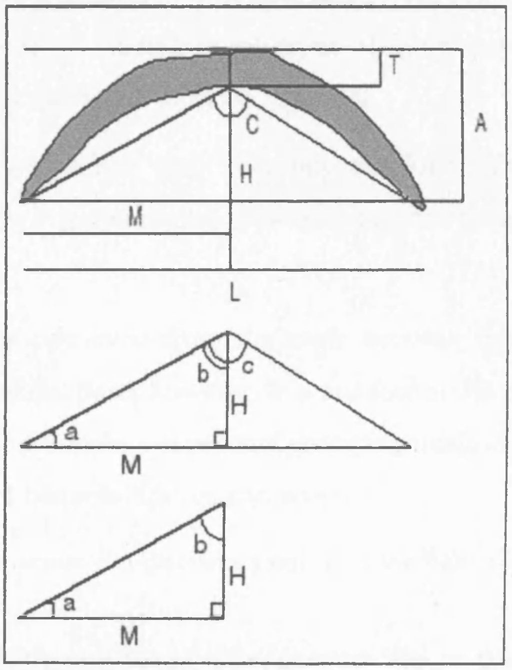

Figure 4-3: Abstract view of attaining flake curvature measurements (after Andrefskey 1998: 108)

This method has been used to identify bifacial reduction approaches, but it has also identified differences between hard and soft hammer percussion. For instance, Haden and Hutchings (1989: 245 in Andrefsky 1998, 107) identified that, generally, soft hammer percussion produced curvature values much higher than hard hammer percussion (Andrefsky 1998, 107). This is used as an additional method to Bulb of Percussion to get a more detailed idea of the percussion methods utilised.

Flake size class – <10mm, <20mm, <40mm, <60mm, >60mm (fig. 4-4) measured by placing a flake on its ventral side over circles of the various diameters without any sides touching the edge of the circles. This is another metrical attribute that can be used to form a characteristic for the size of debitage (Andrefsky 1998, 100).

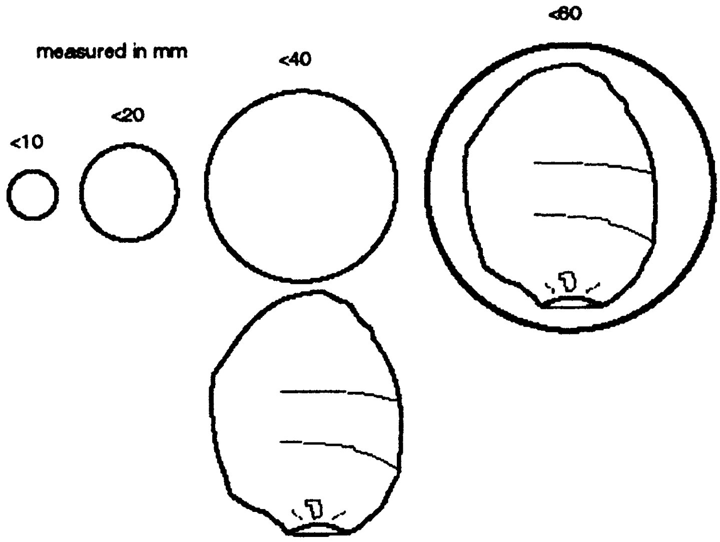

Figure 4-4: Flake class size in grades of <10mm, <20mm, <40mm, <60mm, adapted from Andrefskey – to scale but reduced. (after Andrefskey 1998, 101).

Broken – whether or not the flake or implement is complete. This can be broken down into proximal, medial and distal portions as varying proportions of these may give an indication as to the accidental or deliberate breakage of pieces.

Bulb of percussion – whether the bulb of percussion is F (flat) indicating the flake was probably struck using a soft hammer, or P (pronounced) indicating that the flake was struck using a hard hammer.

Striking platform – angle – this measurement is calculated from the angle between the striking platform and the ventral face of the flake, however, it is not seen to be a reliable measurement as it is difficult to maintain a consistent recording method. Therefore, the following are considered better indicators for analysis:

1. width – measurement in millimetres across the platform parallel to the bulb of percussion.
2. thickness – measurement in millimetres across the platform perpendicular to the bulb of percussion.
3. type – four platform types that can be used with 1 and 2, which provide some characteristics (fig. 4-5) of the core from which it was removed (Andrefsky 1998, 93).
   a. cortical – unmodified cortical surface from the core.

b. flat – smooth surfaces, often indicators of a detached pieces from unidirectional cores, or in the case of smaller pieces, removals from flake banks.
c. complex – those which have a rounded surface or are facetted.
d. abraded – a complex surface which has been additionally smoothed by abrasion or rubbing.

The latter two are seen to be indicators of a more controlled and thought out reduction process (Andrefsky 1998, 96).

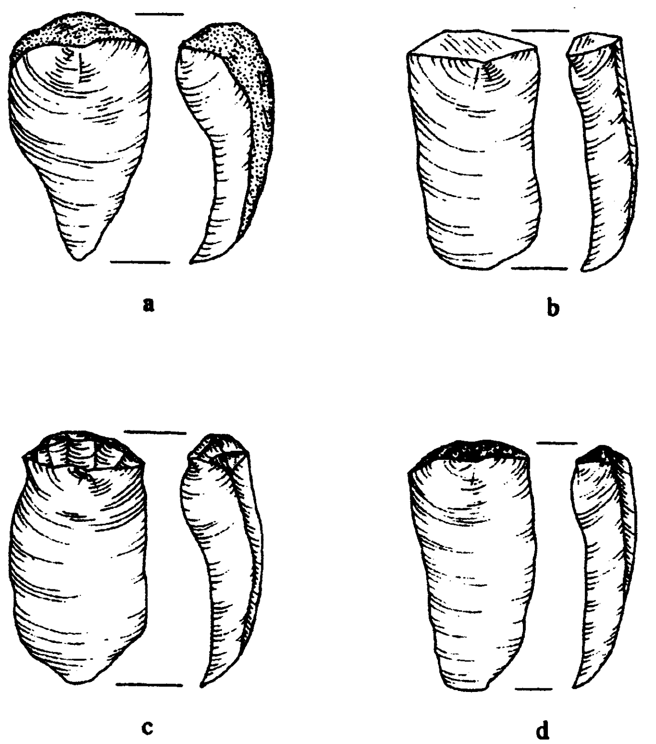

Figure 4-5: Flakes showing the four types of striking platform a) cortical b) flat c) complex d) abraded (after Andrefskey 1998: 94).

Termination – records the type of termination the flake has ended in: feathered, hinge, step or plunging (fig. 4-6). A feathered termination (a) indicates that the flake was removed with control and success, a hinge (b) termination has a rounded distal end created when the force of the impact rolls away from the objective piece suggesting that the flake was not removed with complete control. Another indicator of the latter is a step (c) termination where the flake snaps at approximately a 90° angle to the ventral surface, and plunged (d) termination is where a large proportion of the core is removed and attached to the distal end of the flake (Andrefsky 1998: 86-87). All of these indicate the type of force applied to the core, but are also useful to use on broken flakes which are normally not recorded.

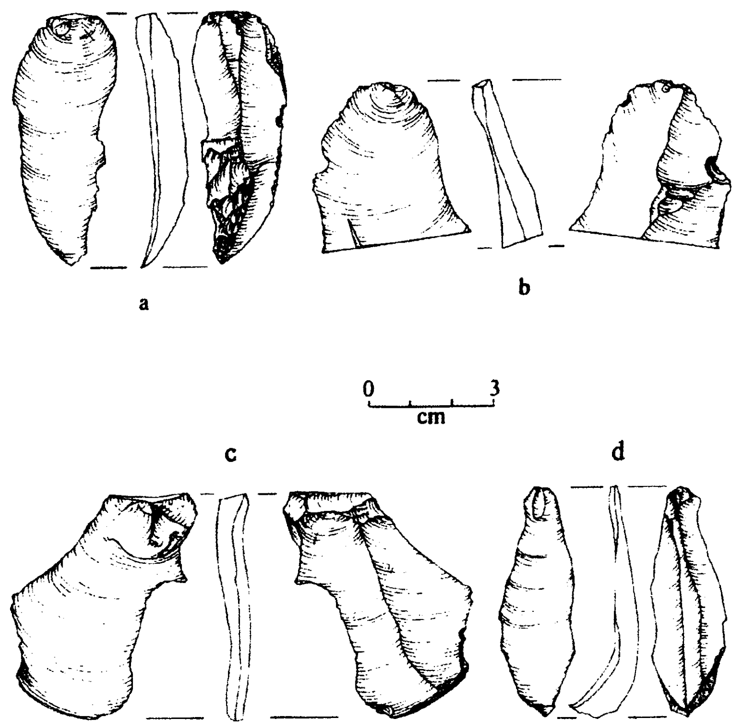

Figure 4-6: Examples of flake termination a) feathered b) stepped c) hinged d) plunged (after Andrefskey 1998, 86).

Incipient cones – it is best to consistently record the presence of incipient cones, as the presence of these can suggest three things; that there were several attempts at removing a flake before success was achieved indicating a lack of control, a blunt hammer was used, or a great deal of force was applied to remove the flake.

Rings of percussion – as above they can indicate a lack of control in removing flakes. Presence of such rings shows where force was applied but removal was unsuccessful.

Bulbar scars – when a core is struck with a harsh impact, the flake that is removed sometimes results in a very small flake also tearing away from the bulb of percussion.

Chip/chunk – records if the artefact was not a flake but a piece of debitage. These are also checked for retouch as preliminary studies have shown an increased amount of debitage was modified as implements.

Dorsal scars - type – the amount of dorsal scar removals can be difficult to assess and depend on the size of the core being worked. However, if a systematic method is applied it can tell us something of the reduction stage. An ordinal scale will be used here following Andrefsky's method (1998, 106):

- a value of '0' = completely cortical surface/no flake removals,
- a value of '1' = single flake scars/some with cortex remaining,
- a value of '2' = two flake scars/possibly with cortex remaining,

- a value of '3' = two or more flake scars.

- irregular/90°/parallel - This indicates whether a core has been struck at random on any reasonable platform or whether the core has been struck in a methodical manner suggesting that the core is prepared as flakes are removed. The dorsal facets will be irregular in pattern or struck at a 90° angle to the striking platform of the flake, or parallel to the platform and/or to each other.

Negative scar type – indicates whether previous removals visible on the dorsal face were flakes, blades, or both. This can be useful if actual pieces are not represented in the assemblage and have been deposited elsewhere.

Negative hinge present – records the amount of negative hinges on the dorsal side of the flake. This can be useful as a tool for observing control in the technology if positive pieces are not present in the assemblage or complement the positive amount observed.

Retouch – this records the presence of any retouch with the ventral surface facing and the bulb of percussion to the top. This ensures a consistent recording of left, right, end – proximal/distal. It is also noted whether the removals are taken from the ventral or dorsal surface.

Angle of retouch – the angle between the striking platform and the ventral or dorsal retouched face. This can be a good indicator for the type of material the piece was used on and the activity that was involved.

Edge wear – records if and where the edges of the flakes have any evidence of being utilised.

Cortex – this records the presence of cortex in the traditional method of:

1. primary – dorsal surface completely covered with cortex,
2. secondary – partially cortical in varying amounts, either on the dorsal surface and/or the striking platform,
3. tertiary – no cortex present.

Recortication state – this records the surface condition of the piece and the extent the outer skin has grown back.

1. F = fresh
2. R = recorticated
3. SR = slightly recorticated
4. P = patinated

5. B = burnt
6. Reused = R, SR, or P but retouched at a later date not associated with the original utilisation. In these instances a piece may be recorded as either R, SR or P but at the same time F or SR depending on the recortication state at its last point of utilisation.

Re-used – records whether the pieces has been used again once the recortication process has started. This indicates a length of time between utilisation.

Flake tool – basic description of the type of implement, for instance, scraper, arrowhead, awl.

Raw material – basic description of parent material, for instance, pebble, chalk, quartz.

Colour – basic colour description.

The above attributes are those recorded for all pieces, but scrapers and cores have a few more details recorded and these are as follows (see scraper and core analysis at the end of analysis form: **CD** Appendix 1).

SCRAPERS

Complete – is the scraper intact or broken; a large number of broken scrapers may indicate heavy use, or that the process in which the scrapers were used took place nearby and that they were discarded.

Long/Short – the general description of the scraper; this has become a traditional but a simple morphological method of describing a scraper.

Cortical – the presence of cortex can indicate how the piece was held and how much reduction processes were involved in removing a suitable flake from the core.

Intact bulbar – in some instances a bulb of percussion is removed during the retouch process and this is particularly important to note if the piece is complete.

Scraper group no. – number allocated to a scraper with certain characteristics developed by Fasham and Ross (1978, 61):

1. Group 1 – scrapers with thin, flat profiles and a slight angle of retouch. The retouch, often pressure flakes, was delicate.
2. Group 2 – scrapers with thick, angular profiles and course, steep retouch.

In addition, due to the number of points that appear to be recovered from Iron Age contexts, borers also have a system by which they can be analysed and this is tested for its usefulness.

Borer group no. – number allocated to a borer with certain characteristics developed by Fasham and Ross (1978, 61):

1. Group 1 – core fragments with jagged edges, one of which has been retouched into a point.
2. Group 2 – flakes with two facets carefully retouched, 80-90°, into a neat triangular point at the distal end,
3. Group 3 – isosceles triangular point,
4. Group 4 – irregularly shaped flake, one end of which is worked into a long, thin point, protruding from the body of the flake. One side of the point is curved, the other straight

CORES

Clark's core type – this is assessed by the way in which flakes have been removed from the core, in other words, how many platforms and the direction of removal. Clark's (1960, 216) method has been applied as it is the most common form used by lithic specialists:

- A. – One platform
  - A.1 – flakes removed all round.
  - A.2 – flakes removed part of the way round.
- B. – Two platforms
  - B.1. – parallel platforms.
  - B.2. – one platform at oblique angle
  - B.3. – platforms at right-angles
- C. – Three or more platforms
- D. – Keeled: flakes struck from two directions
- E. – Keeled, but with one or more platforms

Ford's core classification – this is assessed by the number and type of flakes removed from the core (Ford 1987, 70). The assessment is then given a value that can be used for each core type. This has been applied to evaluate the system in its own right and against Clark's methodology in order to discover new patterns and criteria.

1. Prismatic blade core with numerous flake scars of L:B >5:2
2. Core with more than 3 scars of L:B >5:2
3. Core with less than 3 scars of L:B >5:2 amongst other scars
4. Core with more than 3 scars of L:B btw 5:2 and 2:1
5. Core with less than 3 scars of L:B btw 5:2 and 2:1amongst other scars
6. Any other broad flake core with more than 3 scars
7. Bashed lumps - nodules with less than 3 scars
8. Core fragments - flaked but no extent of negative bulbs of percussion

Maximum diameter – the maximum measurement across the core in millimetres.

Maximum flake length– the length of the largest negative flake removal measured as a complete flake above.

Cortex – to record the presence of any cortex remaining. This gives an indication of the initial size of the material and how much of the reduction process has taken place before the core was discarded.

Previous flakes – records if the core was used for flake removal previously that was not associated with its last reduction process, in other words, the process of recortication.

Prepared platform – this records the presence of any signs that the striking platforms were prepared before a flake removal such as abrasion, indicating a predetermined flaking process taking place. Signs of this can also be seen on the striking platforms of flakes as seen above.

Parent type – the type of raw material utilised.

Burnt – is the core burnt, seen by crazing on the surface or the bluish white colour.

PTS – patinated thermal surface records whether the core has been heated in any way to aid in the removal of flakes.

Flake removal type – records what type of flake removals the core was used for; blade – flake – blade and flake.

Re-use – records if the core was re-used for another purpose after the reduction process was completed, for instance, hammerstone or retouched as a functional implement.

Provisional assumptions

Once all of the chosen flint assemblages have been analysed, it is expected that in the context of Iron Age flint assemblages the following patterns and characteristics will become visible.

- Utilisation of highly localised raw materials – some of which may be of very low quality.
- Generally small assemblage numbers.
- Simple core / flake technology, employing hard hammer, direct percussion.
- Lack of skill or concern in knapping and the aesthetics of the final product, evidenced by:
    - Obtuse striking angles.
    - A high instance of step or hinge terminations.
    - Thick, wide striking platforms.

    - Irregular dorsal flake scar patterns on flakes.
    - Shorts, squat flakes – L/B ratio 1:1.
    - A high instance of chips and chunks.
    - Irregular core morphology.
    - The presence of incipient cones of percussion on core striking platforms.
- A restricted range of formal tool types (scrapers, awls etc.).
- Crude hammerstones.
- A predominance of secondary and inner flakes.
- Possible evidence for re-cycling of lithic material.

These characteristics are suggested to form the beginnings of a new typology for post-Bronze Age flint. However, these have been developed with caution and in the light of the previously discussed problems with our current establishment and use of typological sequences. It is suggested, therefore, that these characteristics (built from Late Bronze Age studies and preliminary studies) will be refined and enhanced during the course of the study. The final list developed by the end of the study will be proposed in order to make Iron Age flint assemblages more recognisable to field archaeologists and lithic specialists. These criteria will serve as a guideline to identification and they should not be seen as immutable criteria which all post-Bronze Age lithic assemblages *must* exhibit. To fall into such a trap leads typological development back into stagnation. In addition, it would also make the assumption that all lithic assemblages from post-Bronze Age periods were the same, resulting in any new, unidentified assemblage types being missed in the same way that Iron Age flint assemblages have been for the last few decades. With this provisional checklist in place it is now possible to explore in detail the assemblages.

Chapter 5

Published case studies

Database of published sites

Building on the observed criteria set out in Chapter 4, the decision to establish a catalogue of Iron Age sites with potentially contemporary flint assemblages was considered to be an essential foundation for any future research. It was also essential in attempting to formally set the grounds for a methodology and approach for identifying and studying Iron Age lithics. The methodology employed in the creation of the catalogue is discussed in Chapter 4. It is acknowledged that this is by no means comprehensive, but should be seen as a starting point. As the methodology sets out, there was an original set of ground rules for inclusion of sites, however these were inevitably constrained by the time limitations of the overall project. For this reason all but one of the sites (Segsbury) are derived from published reports which vary considerably in the quality and quantity of their descriptive content. In presenting this catalogue it is acknowledged that there is a pressing need to go back through museum records to identify unpublished sites that may need reassessing, especially those which have never been analysed due to a lack of comparative data; a mammoth task in itself. In addition, there are hundreds of sites discovered in recent months/years across the country which have yet to be recorded in any detail that should be added to any future catalogue. As a result, alongside the sites examined in detail here, 78 sites are put forward as potential contenders for future analysis to determine the date and form of their flint assemblages. Some may turn out to be residual (but the likelihood is that this will be very few due the characteristic nature of the assemblages and the patterns they portray). A few are, indeed, of mixed period date and require a 'pulling apart' of the assemblages, however, on the whole it is expected that the majority will fall into the 'contemporary Iron Age' bracket.

Two of the sites, Wanlip and Buddon Wood, Leicestershire have already been analysed as part of preliminary studies, and as such are not commented upon in detail here (Cooper and Humphrey 1998, Humphrey 1998). They are, however, used as comparative data in Chapter 6. Four others (North Berstead, West Sussex, Budbury, Liddington Castle, and Segsbury Hillfort, Wiltshire) are not listed in the published sites catalogue as they form the basis of primary analysis for Chapter 6 bringing the total number of sites to 82.

Furthermore, within this chapter three of the listed sites: Potterne, Winnal Down and Meare Village East, are chosen for a detailed study of the flint material and discussion of its associations with the other material culture recovered from each site (fig. 5-1). These were chosen for the following reasons;

a. the size of the assemblages made context and material associations compatible

b. the reports provided detailed studies for secondary research

c. archive data was retrievable, even if variable, and as such supported the published research

The location of the remaining sites presented in table 5-1 and discussed below can be found in appendices 3 (grid references) and 7 (maps; figs. A7-1-A7-4).

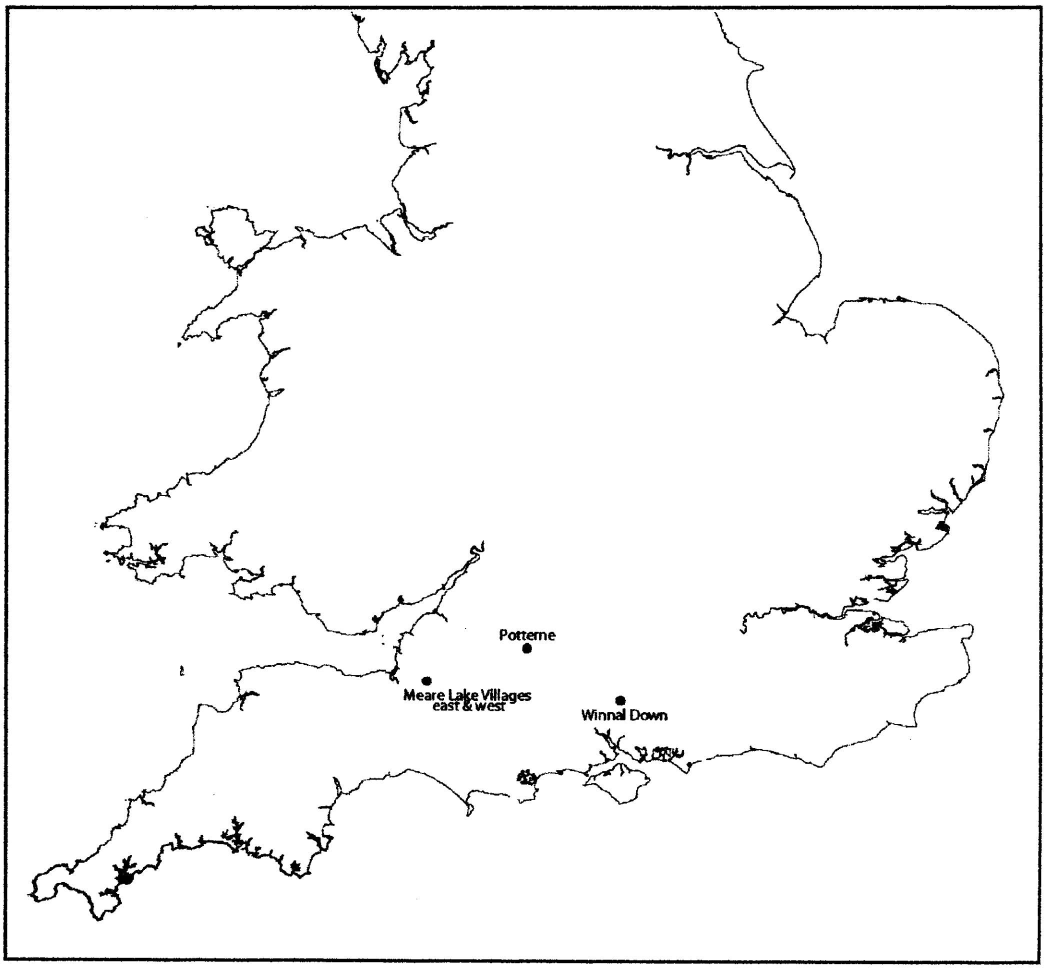

Figure 5-1: Location of the three main sites used for analysis in the detailed study of published data.

Overview of concentrated published research

Table 5-1 (A3 pullout) provides a basic breakdown of the flint material from the 78 sites catalogued for an overview study. Due to the variable quality of the published reports and the analysis carried out on the flint assemblages, 19 did not contain enough published detail to facilitate the useful breakdown of descriptions. Many of these quoted only a total

County	Name	Flakes complete	Flakes broken	blades complete	blades broken	biface / thinning flakes	Cores	Core frags.	utilised cores	core rejuv. flake	Spalls, chips, chunks	Retouched flakes	Retouched frags	utilised flakes	Scrapers	Cutting implements	Awls/borers	Implements	fabricators	Notched flakes	knives	others not described	strike-a-light	burins	saws / denticulates	Arrowheads / microliths	axe / axe frags	Hammerstones / Pounders	Total
Berkshire	Maindenhead Thicket 1982	116	107				15	3			22	4			4					1									272
Cambridgeshire	St. Ives	86	7				10				10	14		2	8		2			3	8				1	2			153
Cambridgeshire	Thriplow	information not provided																											411
Cambridgeshire	Plant's Farm, Maxey	12					1					1			6														20
Cornwall	Goldherring, Sancreed	21										2																	23
Cornwall	Killibury Hillfort, Egloshayle	12																											12
Cornwall	Trevisker, St. Eval						2					4	4		2							8							20
Derbyshire	Aston Upon Trent	3					3								3					1									10
Derbyshire	Foxcourt Farm, Aston Upon Trent	10 (7*)					1	2			2	1										3 natural							6
Devon	Ashbury	information not provided																											24
Dorset	Acton	information not provided																											?
Dorset	East Creech	information not provided																											?
Dorset	Eldon's Seat, Encombe	information not provided																											?
Dorset	Heron Grove, Sturminster Marshall	50	24	1	2		9	7				3			3											1			100
Dorset	Kimmeridge, 1936	information not provided																											?
Dorset	Kimmeridge, 1948 **	558					42					142																	742
Dorset	Sheepleights	information not provided																											?
Essex	Barrington's Court Farm, Orsett Cock	information not provided																											9
Essex	Billericay, secondary school	19		5	7		1			2				2	1													1	38
Essex	Birchanger	78	17				9	6														7						3	120
Essex	Danbury Camp	11													1														12
Essex	Chapel Lane, Hadleigh	8					2					1										4							15
Essex	Kelvedon	87		7		3	5	1			4	7			3					6	1								124
Essex	North Ring, Mucking	308					23				46			101	26													3	507
Essex	Rainbow Wood, Thurrock	37													7	14				2		25							85
Essex	Saffron Walden	information not provided																											32
S.Glamorgan	Whitton	13					4			1		3		5	5		1												32
Glamorgan	Castle Ditches, Llancarfan	6									2	1																	9
Gwynedd	Moel y Gerddi, Harlech	4	7				2					1			3	3													20
Gwynedd	Erw-wen, Harlech						1								1														2
Hampshire	Chidham Lane, Sherbourne St. John	40					3	1			5																		49
Hampshire	Lain's Farm	9	4								14																		27
Hampshire	Micheldever Wood barrow site (phase 4&5)	11504					284		37		6616	49			9			67											18566
Hampshire	Micheldever Wood banjo enclosure	information not provided																											1200
Hampshire	Old Down Farm ***	103	23				6					9			15														156
Hampshire	Winnal Down (detailed analysis)	293	5				14	10		2	132	22		6	0		1	1											486
Hampshire	Winklebury Camp, Basingstoke	199					5										1											8	213
Herts.	Wilbury Hill, Near Letchworth	6									2				1														9
Kent	Castle Hill, Capel	27		4	5		6				1	8			5			2											58
Kent	Monkton Court Farm, Isle of Thanet	357					11				3	8			6		3				2	29			1			10	430
Leicestershire	Buddon Wood, Quorn	80	29				2	24		1	138	4	8		7	3	9	11										7	323
Leicestershire	Wanlip, stratified material	68	76	3	9		6				210	29			11	6	7	3								2			430
Malverns	Midsummer Hill	20					1					13		2	5			2			3								46
Monthmouths.	Llanmelin, nr. Carwent	1									1				1														3
Norflok	Silfield	information not provided																											611
Norflok	Fison Way, Thetford	764		101			21				13	11			21		3		2		2	48			6	3	1	2	998
Norflok	London Road, Thetford	180	20				15			2		9			30		2		2		2		1			1			264
Northants.	Clay Lane	information not provided																											46
Northants.	Brigstock	36					1					12			6						1					1			57
Northants.	Grtetton	9									1	1			3														14
Nottinghamshire	Stanton-on-the-Wolds		61									13			43							25				1			143
Oxfordshire	Ashville trading estate, Abingdon						10					19			13	41		5			18	90		5	8	3	1		213
Oxfordshire	Barton Court Farm	331					11			6		34			26	1					6					2			417
Oxfordshire	Stanton Harcourt	information not provided																											20
Oxfordshire	Devil's Churchyard, Checkendon	3		3							3																		9
Somerset	Dibble's Farm, Christon	24		1										4	2														31
Somerset	Glastonbury Lake Village	313					14				48	31			31										1	1	1	2	442
Somerset	Meare Village East	85					3	1		1	3	26			15		1	1		1	3	399				6	1	2	548
Somerset	Meare Village West 1910-33 ****	1080					17					77			115			5			23	99			4	10	7		1437
Somerset	Row Of Ashes Farm, Butcombe	86		14										6	7		2					4					1		120
Suffolk	Lakenheath																												?
Warwickshire	Corely Camp	information not provided																											200+
Surry	Alpine Ave, Tolworth	7									8						1									1		1	18
Surry	Holmbury Camp	information not provided																											60-70
Surry	Nore Hill, Chelsham	information not provided																											178
Sussex	Carne's Seat, Goodwood	141		11			2								1														155
Sussex	Coastal site, Chidham	373					6	28				86			133		4												630
Sussex	Copse Farm, Oving	38			2		4	4				9			5														62
Sussex	Ounce's Barn, Boxgrove	128		18		15	3	4				3			5						2					1	1		180
Sussex	Saxonbury Camp	information not provided																											?
Sussex	Seaford Head Camp	information not provided																											21
Warwickshire	Park Farm, Barford	3					3					9		4	2	5	1				1								28
Welsh Marshes	Croft Ambrey	1													7								1					1	10
Wiltshire	Figheldean 1993 &1999	not enough information as 1993 Harding only analysed material from LBA context and assumed rest was residual																											2084
Wiltshire	Pewsey Hill	64					4			1	13	1		2														4	89
Wiltshire	Potterne (detailed analysis)	393	170	2			41			5	54	14			6		3		1						3			5	697
Upminster	Whitehall Wood	information not provided																											?
Total		18256	489	170	25	18	623	91	37	21	7351	681	12	134	604	73	41	97	5	14	72	738	2	5	24	35	13	49	
Minus Micheldever Wood due to large assemblage		6752					339		0		735	632			595			30											

** at Kimmeridge 1948 the report mentions that the majority of implements are chisels, but also scrapers, hollow scrapers, nose and puch planes all present, also that the 42 cores included some broken hammerstones. Therefore more detailed breakdown cannot be given.

*** Old Down Farm - much more flint material listed from IA contexts in archive but not listed in the report

**** Meare Village West does not include natural or burnt lumps

Table 5-1: Catalogue of 78 sites researched from published sources considered to be potential and probable Iron Age contemporary assemblages (not including four sites analysed in Chapter 6).

number of flints; some described only a few significant retouched pieces. It was also a frequent occurrence to find that very small flint assemblages were described as 'several flints found' with no other information to expand on the pieces (represented by a '?' in the 'total' column in table 5-1). Low assemblage numbers were often the reason given by analysts for not carrying out any form of analysis beyond a brief description, with a view that very little useful information could be gained. The same reason was also used by some who did provide a basic breakdown but did not explore the assemblage further. The second most common factor was that the flints were assumed to be residual either on the basis that a single diagnostic flint piece of an earlier industry (usually Neolithic) was present, or a few earlier sherds of pottery were found on the site. On a few occasions this was the case even when there was no evidence for earlier activity. Thus, by removing the 19 sites with limited data we can begin to analyse the remaining 59 assemblages.

The descriptions in table 5-1 have been broken down into flake types, core related material, diagnostic tool types and miscellaneous retouched and utilised flakes. These are also colour-coded into three categories. Pink for diagnostically earlier material, green for those which are difficult to date, first because they are generally considered to be earlier pieces but have also been found in later assemblages, secondly, because their description is not enough to identify the implement precisely. Knives fall into this category as many reports state 'knife' when they could mean a diagnostic tool such as a plano-convex knife from the Early Bronze Age or a simple flake with retouch having a crude knife function. Also there are 738 pieces which fall into the category of 'others not described' which could literally refer to anything. Yellow indicates flints which are considered here to be potentially Iron Age pieces due to their types and characteristic descriptions. Scrapers and awls fall into this category because in each report they are described as mainly 'rough' or 'crudely formed' pieces. Furthermore, scrapers are the one tool type which is reasonably standard throughout millennia of production and use. Granted there are some shapes which are characteristic of periods, on the whole many scrapers offer little chronological precision if found alone.

Assemblage size

With flint and metals to choose from to produce tools it is expected that flint assemblages decrease in number during the Late Bronze Age and further still into the Iron Age. As such, smaller assemblages have become one of the distinguishing characteristics in identifying such assemblages (fig. 5-2). Care must be taken with such criteria however, as rarely is any site fully and extensively excavated (particularly in the case of developer funded interactions). Therefore, the extent of excavation that has taken place in retrieving such assemblages must be taken into consideration.

It first appears that the majority of sites produce flint assemblages below one hundred pieces ranging from less than ten upwards. The majority produce between 40 to 80 pieces. The decision made by previous analysts not to analyse these sites in detail is all too often down to the question of 'what can be gained from such a small sample?', but in reality it may have as much to do with the post excavation costs involved. However, it is worth noting that very small numbers do not eliminate other materials such as iron and copper alloy from the common list of specialist reports as evidenced later in this chapter in the case of Potterne.

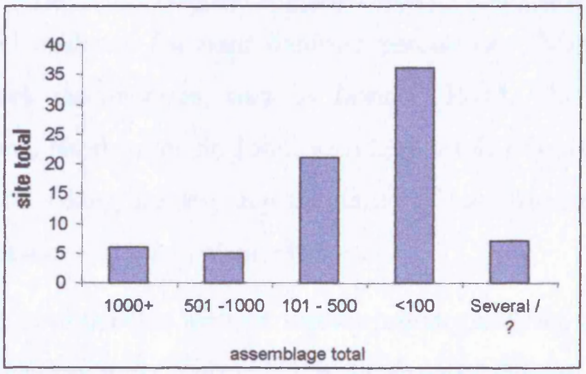

Figure 5-2: Total number of sites by assemblage totals.

The key question is do these very low numbers offer a true representation of flint utilisation on the site? The majority of the 78 sites produced material where only a small percentage of the sites have been excavated. This also includes those which have figures up to 1000 pieces. Another factor which must be considered is the bias involved in the collection of flint material from Iron Age sites over the last fifty years, and the fact that much may have been discarded or not even collected. Therefore the actual figures relating to these assemblages could be much higher. Indeed six sites had assemblage totals over 1000 pieces, the highest being 18,568 from Micheldever Wood barrow site. The fact that this is a cairn site and was an important source for the procurement of flint in the immediate area does, however, make this site unique. The main factor behind the other large assemblages is the much larger scale excavations which took place. The 4598 flints from Potterne came from a midden site which was excavated in grid squares and spits across a zone of concentrated deposits. Winnal Down produced 2816 flints retrieved from a large scale open area excavation. Meare Village West totalled 1439 flints and comprised an extensive excavation over a number of seasons. As such, when dealing with published assemblages too much attention should not be placed on the actual number of pieces, as many factors may have shaped this total. All that can be said with confidence is that even where excavation has been extensive, they are still fewer in number when compared with earlier industries.

Flakes and Blades

Flake blade ratios have become one of the most common forms of technological analysis performed on flint assemblages in order to provide a relative date. In Chapter 2 a reduced variation in length and breadth measurements was observed by Ford, Bradley, Hawkes and Fisher and Herne for Neolithic and Bronze Age assemblages. The first obvious factor therefore when regarding these Iron Age assemblages is to assess the length and breadth data of flakes to blades. In the majority of cases, however, length:breadth measurements were not provided, but the general morphological descriptions given for all flakes described by individual analysts ranged between short, squat, ratios of 1:1, crude, thick and angular. The majority reported evidence for hard hammer percussion. Many were described as having hinged or thick terminations, such as London Road, Thetford, Ounce's Barn, Sussex, Chineham Lane, Sherbourne St. John, with high levels of cortical flakes, and many commented on a 'crude flaking industry' representative of Late Bronze Age flint industries. Some indicated the presence of thick, plain, platforms.

As the metrical data is unobtainable without further primary analysis, we can retrieve useful data to compliment the descriptions provided in the form of flake to blade ratios. In total 18,256 complete flakes were recovered against 170 blades and 18 thinning / biface flakes, both of which are characteristic of earlier assemblages giving a ratio of flake to blade of 170:1 (only 1.02% are blades). Even if we remove the large assemblage from Micheldever Wood barrow site (as seen at the bottom of Table 5-1) we are still left with 6,752 flakes, bringing the ratio to 39:1 (only 2.7% are blades). Therefore it is clear that flake technology dominates these assemblages throughout.

To support the flake data, only 12 sites out of 59 produced blades, with eight of these having less than 10, three less than 20 and only one with over 100, in this case 101. The latter were recovered from the site at Fison Way, Thetford where the flake to blade ratio was 8:1. This may suggest that this site is either not contemporary with the Iron Age activity (though we must beware of circularity in our arguments here), is part of a mixed assemblage, or something much more interesting is happening for blades to be produced in such numbers in the Iron Age period. The fact that two arrowheads and one microlith and an axe fragment were also recovered may suggest a mixed, or earlier, date for the assemblage.

Of the 12 sites only four (Heron Grove, Wanlip, Fison Way, Ounce's Barn Boxgrove) produced any earlier diagnostic material such as arrowheads or microliths and between these only eight examples of the latter items were recovered. In addition, only two assemblages which have blades as well as biface/thinning flakes are Kelvedon and Ounce's

Barn Boxgrove. Could this suggest that of the remaining sites and possibly all 12 with blades present that some of the blades found in these assemblages represent blade technology from the Iron Age? In Scandinavia, it is accepted that Iron Age sites produce blades. At Löddeköpinge true blades formed part of the Iron Age assemblage and at Särslöv 97 shorter blades, all similar in morphology, were recovered. Both have been analysed and accepted as part of the Scandinavian Iron Age repertoire (Knarrström 2001, 96, 106).

Cores

A general view in the past is that *if* flint knapping took place in the Iron Age it was in the form of ad hoc episodes, then cores were not expected to be found, and if they were it was assumed that they would be in small numbers. This does, however, not appear to be the case. A total of 623 cores were recovered from the 59 sites, with 264 of these coming from the Micheldever Wood barrow. This still leaves 339 cores from 58 sites, an average of six cores per site. Comparing to flake totals this means on average a total of 19.5 complete unmodified flakes to each core (broken flakes and flake tools not included in this calculation). This, I believe, is a fair representation of cores to flakes, given that most of the material is of smaller nodules of pebble flint or locally procured surface material. This also supports the amount of secondary flints that have been recorded or described.

There also seems to be a balance between the number of cores and flakes recovered from each site with regards to the total assemblage size. Therefore, it is suggested that even though some assemblages represent only part of the flint material which may potentially have been recovered from each site, it appears to be a representative sample when compared to the ratios of cores to flakes from larger excavations. Where there are a few exceptions to this overall view, (either too many or too few cores) two suggestions are presented. Where there does not appear to be enough cores, core fragments appear to be larger in number. Where we have too many, it may be suggested that perhaps many small or insignificant flakes, often seen as waste, were not recorded during excavation or were discarded.

The amount of waste from cores varies according to how it has been recorded. In some cases chips and chunks have not been recorded, possibly as a result of the collection methods employed (often many of these are retrieved only by sieving, which may not happen on many excavations) and the visibility of small flints within the soil. There is a correlation between most of the sites, however, where the size of assemblage again represents the size of the waste material. Core fragments are only recorded at 13 sites (one of which lumped cores and core fragments together), yet in other instances core fragments may have been counted under chunks by some analysts, if retrieved at all.

Core rejuvenation flakes (CRF) were found at nine sites and total only 21 examples. Again these are generally seen as evidence for earlier technology, as cores were prepared to a much higher level in earlier periods. This does not mean, however, that if a core being used in a later period has an inconvenient irregularity that prevents flakes being easily removed, it has to be discarded. From evidence discussed in Chapter 6, any core rejuvenation flakes appear to have been removed in order to remove a projecting ridge (creating a flake with a large dorsal ridge), and not to prepare a more suitable flat platform; creating a tablet shaped flake characteristic of blade/flake technologies. There are very few descriptions of CRFs in the reports on these sites and so it is unknown which type they are. However, so few have been recovered that it is suggested that they may well represent the group analysed in Chapter 6.

Retouched pieces and implements

The observed criteria laid out in Chapter 4 suggest that the only tool types expected to be found in Iron Age assemblages are scrapers, cutting implements, awls/borers and a much higher instance of miscellaneous retouched pieces. Figure 5-3 summarises the available descriptions of the retouched pieces from the 58 sites (Micheldever Wood barrow site not included due to its large assemblage numbers distorting the data). It is clear that these sites fall true to the observed criteria expected for Iron Age assemblages. Miscellaneous retouched pieces outweigh any other implement type including scrapers. As expected however, scrapers in turn outweigh any other diagnostic tool type, followed by cutting implements, knives and awls/borers respectively.

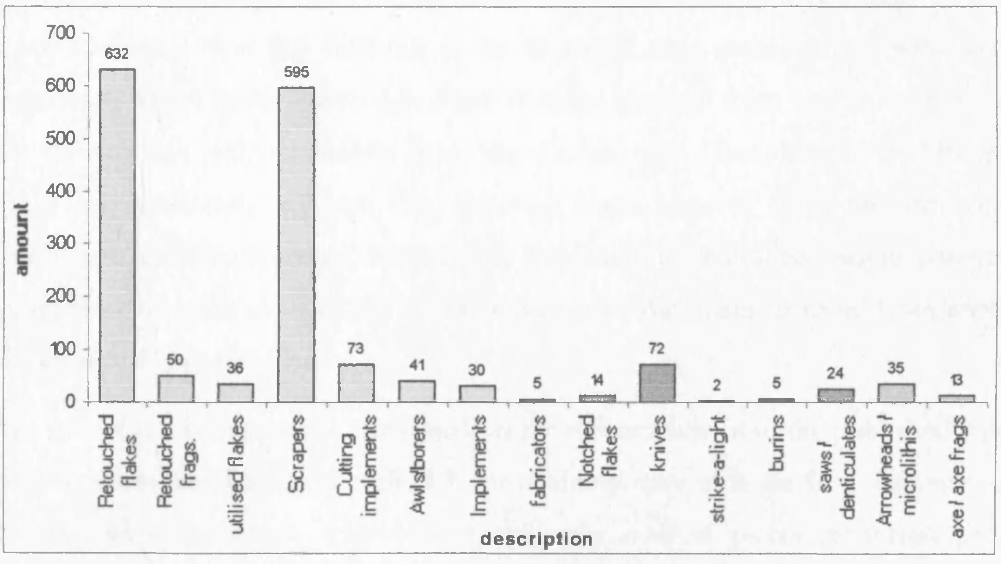

Figure 5-3: Retouched pieces of flint from the overview of table 5-1, not including those from Micheldever Wood barrow site and not including 'other not described'.

The fact that knives fall very close in number to cutting implements supports the fact that despite having an obvious knife shape function, many of these artefacts are crude in form and only a few may represent earlier diagnostic forms. Many of the latter are very distinctive and as such would be expected to be highlighted in reports, as arrowheads are. This was observed rarely and only three cases were mentioned out of the 58 assemblages, all of which were plano-convex knives; Monkton Court Farm, Isle of Thanet (Healy 1994, 303), Midsummer Hill, Malverns (Saville 1981b, 118) and Brigstock, Northants (Moore 1983, 27).

Despite the arrowheads and microliths totalling 35 artefacts and the axe or axe fragments 13, they are not high enough in number to pose any real concerns about an earlier date for the assemblages. Only 15 of the 59 sites detailed produced any of these three artefact types and the majority of examples we do have come from the two Meare villages, leaving a total of 19 arrowheads/microliths (17 and two respectively), and five axe/axe fragments spread across the remaining 13 sites. Of these, two was the highest number in any one assemblage, one of which was Fison Way, already suggested as a possible mixed assemblage site.

Summary of table 5-1

How large a problem is this mixing? It is expected that if the following sites are re-analysed they will prove to be of mixed assemblage date due to the number of earlier diagnostic pieces: Barton Court Farm, Oxon (Miles 1986), Kelvedon, Essex (Martingell 1988), Ounce's Barn, Sussex (Holgate 1995), Fighledean, Wiltshire (Harding 1993; Boismier 1999), Castle Hill, Capel, Kent (Wymer 1975). Silfield is another mixed site but Robbins (1996) has already suggested that there is a small element of earlier material present in the assemblage and that the rest is considered to be contemporary with the Iron Age, as does Gardiner (1993) with respect to London Road, Thetford, Norfolk. There may, of course, be a few additional sites that turn out to be of mixed date, as is the case with Wanlip, Leicestershire, which when analysed in detail revealed material from two periods, Early to Middle Bronze Age and the Middle Iron Age (Cooper and Humphrey 1998; Humphrey 1998). It was interesting to note that although some material from the Bronze Age appeared from stratified contexts, the majority was found in unstratified layers, particularly the ploughsoil, whereas most of the characteristic Iron Age material came from stratified Middle Iron Age contexts (*ibid.*).

On this note it can be suggested that based on the information from the published reports, overall the assemblages listed in table 5-1 are contemporary with the Iron Age sites from which they were recovered, with only occasionally residual pieces recovered present. However, further primary analysis must be carried out before this can be stated conclusively. There is, of course, a possibility that a few assemblages could turn out to be residual from earlier activity periods after all, but given the data put forward, the associated material culture and absence of earlier evidence for most of these sites, the numbers are expected to be few. There is definite evidence that some of these sites hold mixed flint assemblages, but this is to be expected on many sites as activity is not exclusive to one fixed point in time. What is important is to extract Iron Age flint technologies from mixed assemblages in future analysis so they do not get subsumed within earlier industries or lost to assumed residual categories.

Sample strategy

The sites discussed in this section have been chosen for two reasons. First, the original flint analysis previously carried out on a sample of these assemblages had strongly suggested that they were contemporary with the Iron Age phases; and technological and morphological criteria meet the expected characteristics outlined in Chapter 4. Second, the larger size of each assemblage allows for greater comparable analysis with other associated material culture to assess the possible role that flint played at these sites. It is suggested that this type of report-based analysis (when the actual flint material is not available for analysis), using both the published report and the paper archive when available, can aid future work for the following reasons. Published reports are never definitive. Unanswered questions, undateable features and uncertain assemblage dates are common and often conclusions represent a best possible scenario. As a result new research questions can be asked of previously examined data even when the actual material is not present. Indeed, it is hoped that the new questions asked of the larger assemblage numbers from the sites presented in this chapter will aid in developing the background knowledge required to analyse the more typical smaller assemblages, and situations when paper archive material is not available, where it may be difficult to establish comparisons between associated material types such as those in Chapter 6.

Potterne, Wiltshire

General

Potterne is situated on the lower slopes of the Upper Greensand escarpment (ST 996 591) on the western end of the Vale of Pewsey (Lawson 2000, 4). To the east the vale of Pewsey lies between Upper and Middle Chalk downland and to the south crests are capped by clay-with-flints (*ibid.*). After the 1982-85 excavations the site was identified as a midden, rich with deposits showing excellent preservation, dating from the Late Bronze Age to the Early Iron Age. The resulting accumulation of material has been referred to as 'The Deposit' (Lawson 2000, 3, 11). This was because the material was not recovered from discrete cut features, but from a single large, deep (up to 2.08m) positive feature, that was unparalleled at the time in any later Bronze Age-Early Iron Age settlement context (*ibid.* 11). The deposit appears to have been in continuous use throughout the said period and the material dumped, particularly the pottery, shows a number of single and closely related events of disposal on a contemporary surface (*ibid.* 3, 25).

After 16 cuttings of various sizes, the outer limits of the Deposit were found on the eastern, northern and western edges and through a programme of augering, the size of the deposit was thought to be 3.5 hectares (Lawson 2000, 13). As the Deposit was considered to have been accumulated rubbish, questions relating to its original source led to Cutting 10, which was placed on the southern limit of the cemetery, where a bank ran along a ridge below Sanfield House. This was to evaluate the possibility of ridge top settlement surrounded by an enclosure bank where the material was dumped on the outside of enclosure (*ibid.* 11).

The large quantity of pottery has provided important chronological evidence for this transitional period and the changing trends in production and distribution. It was supported by valuable artefactual data including metalwork and worked bone. All of this material evidence was accompanied by a rich source of animal bones and plant remains suitable for detailed environmental studies (Lawson 2000, 11). As such, Potterne is a very important site which should lead us towards a better understanding of the changes that took place between the Late Bronze Age and Early Iron Age.

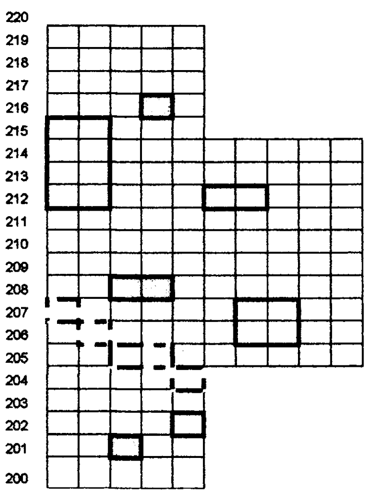

Figure 5-4: Cutting 12 showing plan of 1m grids applied in excavation. Dashed boxes indicate intermediate area, above these is classed as off-terrace and below on-terrace. Grouped boxes indicate trowelled columns and shaded environmental samples (after Lawson2000, 16).

To combat the problem of undifferentiated stratigraphy posed by 'The Deposit', cuttings 2, 3, 10 and 12 were divided into 1m^2 and excavated in spits related to the site datum, which are labelled as zones 2-14 (Lawson 2000, 19, 25). Cutting 12 consisted of 150 columns and forms the basis for *most* of the post excavation work due to its more reliable excavation records. Only 15 (10%) of these columns were trowelled due to time constraints and used as a means to test excavation technique. As such, columns were either singular or grouped across cutting 12 to vary the trowelled areas (fig. 5-4). The rest were carefully mattocked with a minimum target of five spits per day (*ibid.*19, 35). In addition, the area was also divided into 'on-terrace' and 'off-terrace' areas due a small step discovered, with a larger number of cut features on the 'on-terrace' area. This is curious as the excavators argue that, the 'off-terrace' area is a more reliable basis for building a stratigraphical sequence based on the zones (see figure 5-5) (*ibid.* 25, 39). Furthermore, although the upper zones are found in all of the columns, zones 11-14 are not represented in all cases as the natural was reached at different levels over the area. As a result caution should be exercised when comparing artefacts from different zones (*ibid.* 39).

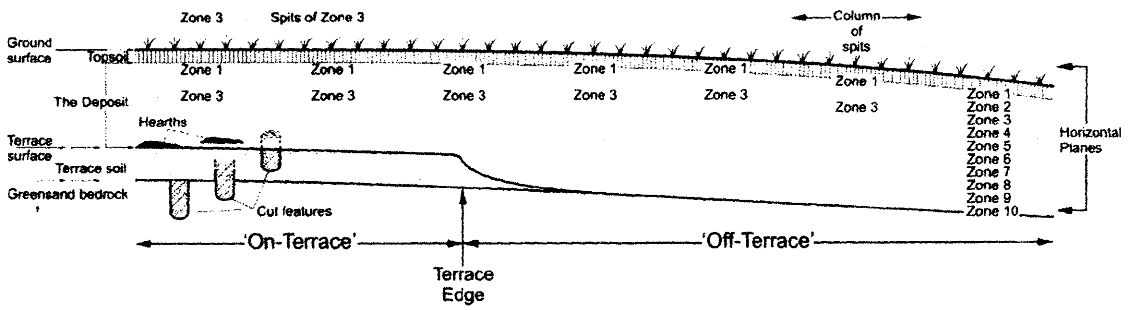

Figure 5-5: Schematic section showing the method of excavation and terminology used at Potterne (after Lawson 2000, 17; fig. 9a).

The postholes situated on the 'on-terrace' area of cutting 12, even those well below the interface, have later Bronze Age finds and so cannot be of any earlier date (Lawson 2000, 31). Based on 29 samples taken from two hearths (258 and 3504) and oven floors in cuttings 2 and 12 for archaeomagnetic dating, the overall mean date placed them at 800-650 cal BC (Clark 2000, 42). The overall pattern of the material culture based on the zones from the 'off-terrace' area has suggested that zones 14-11 represent pre-Deposit activities and zones 10-2 represent the accumulation of the Deposit (Mepham and Lawson 2000, 240).

The Flints

The total amount of flint recovered from Potterne is not stated in the published report and a detailed search of the paper archive could not ascertain any definitive final figure. From cutting 12 alone, however, a total of 4598 flint artefacts (table 5-2 and fig. 5-6) were recovered (Healy 2000, 205), a vast amount compared to many of the Early Iron Age sites presented in Table 5-1. From the size of the Deposit, the large number of flints may not be incongruous, but there are still a number of archaeologists who would not expect to see a flint assemblage of this size despite the rich and varied number of other artefacts, (pottery, worked bone, shale and particularly metals, including the gold bracelet which first brought attention to the site (Lawson 2000, 9)).

Zone	'On-terrace'	Intermediate	'Off-terrace'	Total
1	23		125	148
2	19	4	348	371
3	44	4	210	258
4	74	3	218	295
5	160	14	179	353
6	127	18	179	324
7	125	15	267	407
8	126	15	299	440
9	99	20	457	576
10	31	27	579	637
11	19	5	351	375
12	16		88	104
13		6	272	278
14		5	27	32
Total	**863**	**136**	**3599**	**4598**

Table 5-2: Struck flint from cutting 12, Potterne (after Healy 2000, 205

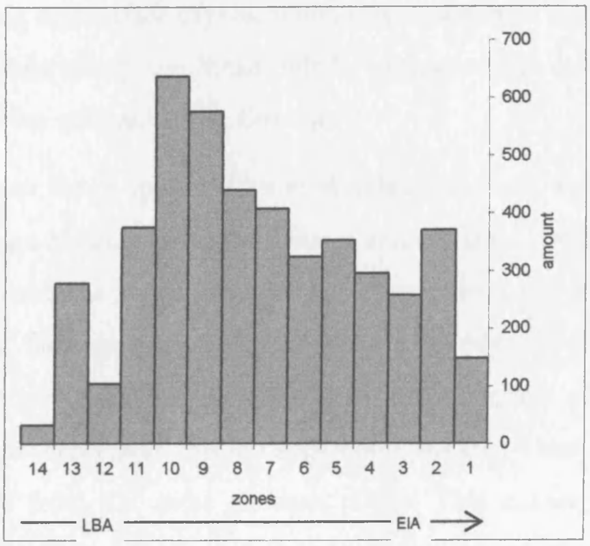

Figure 5-6: Worked flint by zone from all areas of cutting 12, Potterne

When comparing this vast assemblage of flint material to the total amount of copper alloy finds (186) – excluding unstratified and Romano-British material – (Gingell 2000, 186), it is hard to understand why the copper alloy receives a twelve page report, including detailed description and illustration, compared to the four pages given over to the flint, with basic description and no illustration. This point is further emphasised when it is realised that the whole of the flint report is based solely on the 785 flints (17%) recovered from the trowelled columns alone (including burnt and broken pieces table 5-3). Furthermore, in the discussion of the 'Overall Artefactual Assemblage' the flints are not discussed explicitly when referring to the tools available, 'Working practices were assisted by a wide range of tools, including bronze knives, awls, and tweezers, etc, bone points, needles, and gouges, whetstones, mullers, and querns, and so forth' (Mepham and Lawson 2000, 243). The flint assemblage does not appear to have been given the full recognition that it is due. At no point in the report is it suggested that the flint material is not contemporary with the Deposit, but its role appears to have been played down, along with the suggestion that it declines dramatically at the very end of the Late Bronze Age and that it is an uncommon element in the Early Iron Age assemblage.

Technological and morphological attributes

The majority of the raw material is locally collected nodular chalk flint of varying quality (Healy 2000, 205). It is supposed that the nodular flint was collected from surface material as the cortex that is still present is reported as worn and weathered, and the mean weight of the cores (48g) suggests that the nodule size was generally small (*ibid.*). Almost all of the artefacts are fresh, which is explicable by the continuous deposition of debris onto the Deposit, thus minimising any surface exposure, but it was observed that many are encrusted with calcium phosphate (*ibid.*), and it can only be presumed that this has formed due to contact with some other material in the Deposit.

It was noted that material from the upper zones appeared more abraded, but there was no difference in the incidence of breakage between upper and lower zones (Healy 2000, 205). This appears to contradict a comment made later in the report where it is suggested that the increased amount of flakes present in zones 3-1 is probably due to tillage. This is not to suggest that some very small complete flakes are not the result of post depositional damage, as are some broken flakes, but the suggestion made by Healy for zones 3-1 is that they both result from the same process, tillage. This reading suggests that there is a difference in the material between these zones, but instead of a higher instance of breakage, this results from small flake removals. When this material, is broken down into subcategories beyond zones alone, a different pattern emerges (table 5-3) and is discussed below (Sequencing and technology change; fig. 5-10).

Table 5-3: Worked flint from trowelled areas 'off-terrace' cutting 12 (after Healy 2000, 206)

zone	debitage		cores		core rejuv. flakes		flakes		blades		retouched **		total		burnt		broken		flint:pott.	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
1	15	3	4	1			29	4			1		49	8	2		23	3		
2	10	1	1	1			36	1			1	1	48	4	1		22	1	1:9	1:39
3	3	3	2				6	9				1	11	13		1	2	6	1:45	1:20
4		1	2	1			8	8			3	2	13	12	1	1	2	4	1:69	1:36
5	2		4	1			14	3			3	2	23	6	1		6	2	1:88	1:47
6			5				17	6			2	1	24	7	3	3	6	2	1:45	1:40
7	1		4		1		30	14					36	14	15	4	9	3	1:14	1:19
8	5		1	1			32	10	1		3	1	42	12	12	1	8	4	1;27	1:23
9	2		2		1		26	22			3		34	22	2	2	11	12	1:23	1:18
10		1	2	2	1		27	27	1		2	2	33	32	6	14	10	5	1:19	1:16
11	4			3		1	28	8			1		33	12	5	3	13	3	1:9	1:12
12					1		9						10		1		4		1:24	
13	1	1	1	1			14	2			2		18	4	4		3	1	1:5	1:10
14	1	1		1			2	1			1		4	2			2		1:6	
total	**44**	**10**	**28**	**13**	**4**	**1**	**278**	**115**	**2**		**22**	**10**	**378**	**149**	**57**	**29**	**124**	**46**		

** see Table 6-3   a = columns 21-2, 26-7, 36-7, 46-7   b = columns 102-3, 112-3

Evidence of all reduction sequences of the knapping technology (Healy 2000, 205), shows that the people living on the settlement and disposing of their waste on the Deposit must have produced the flint implements. At this stage, actual numbers of implements retaining cortex are not available. However, the high incidence, of broad, thick-butted flakes, hard hammer technology, hinge fractures and under utilised/unclassifiable cores discussed by Healy (Healey 2000, 205, 206), fits the general pattern suggested for flint technology of this period. This is further supported by the rare use of platform preparation and core rejuvenation (*ibid.* 206), and the presence of only two blades from trowelled areas (table 5-3).

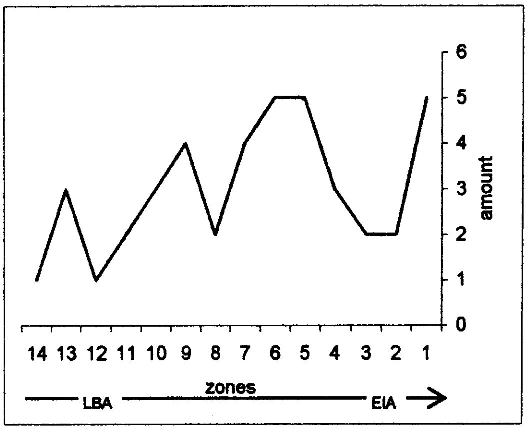

Figure 5-7: Cores from the trowelled areas of 'off-terrace' area of cutting 12, Potterne.

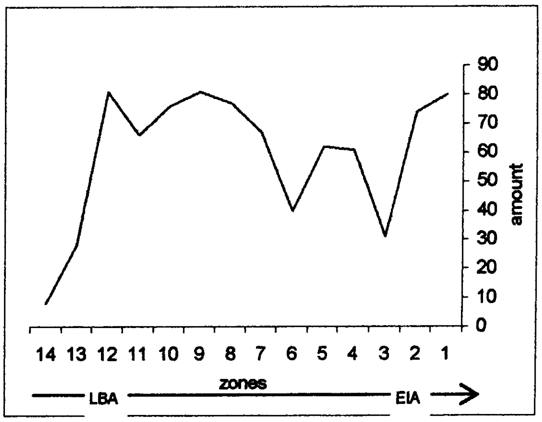

Figure 5-8: Number of flint material present from columns 'a' and 'b' of cutting 12, Potterne – not including cores.

Figure 5-7 shows the pattern of core use throughout the period and it is clear from the number of cores (41 from columns 'a' and 'b') that flint is still used to a marked degree, especially as these numbers represent only a small trowelled area of the site. There is also constant fluctuation in their presence over time. An interesting observation, however, is that when comparing core numbers to all other flint material (fig. 5-8) including burnt and broken pieces, the ratios between cores to other material changes little over time. The pattern could suggest that between zones 14-1 (latest Bronze Age-early Iron Age) there was a general increase in the amount of material produced from the cores, especially debitage and flakes particularly in zones 12 and 8. The only exception to this is zone 6 where there appears to be a drop in the ratio of material removed from the cores, and in zone 3 where there seems to be a drop in the use of flint overall.

A breakdown in the type of cores produced indicates that over time less preparation and thought was put into removing flakes. Figure 5-9 shows that there was a marked increase in multi-platform cores, a constant but small use of single platform cores, and a greater use overall of unclassifiable and fragmentary cores. There is an introduction of a small number of what Healy identifies as tested nodules (a number of these were also found in the Late Bronze Age assemblage from Coldharbour Road, Gravesend (Bradley 1994, 395)) which may indicate either that the knappers were less experienced in identifying good quality flint before starting, or that very few removals were made before the core was discarded. The introduction in zone 10 of keeled cores is interesting as they can be associated with earlier technology. However, if their general quality is of a lower grade, as Healy suggests is the case with all the cores, then their presence may indicate only that these particular cores were utilised to the full potential. In addition, cores do not generally appear to have been used to their full potential, particularly after zone 6, as all four core re-juvenation flakes come from zones prior to this (table 5-3).

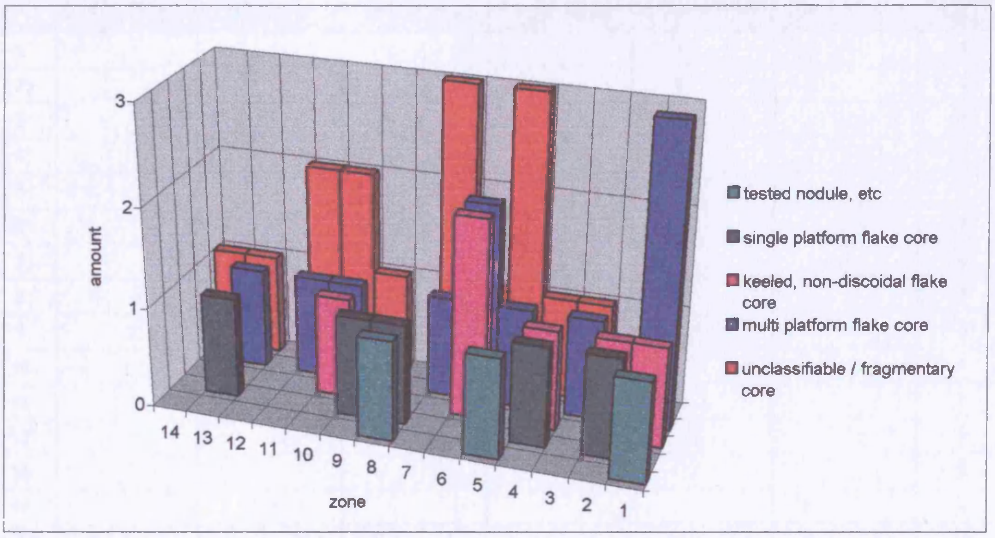

Figure 5-9: Core typology from columns 'a' and 'b' cutting 12, Potterne.

The technological pattern of the assemblage meets all the requirements presented earlier (see Chapter 4, 55-56) and although Healy remarks on the often substantial residual elements of Iron Age assemblages, she does see the convincing evidence that lead this assemblage to be interpreted as contemporary:

> The overall technology and typology of the sample match those of the Bronze Age industries of southern England, summarised by Ford *et al.* (1984).... The identification of Late Bronze Age industries is a matter of caution, since residual lithic material is often present in deposits of this period. Given the generally fresh condition of the Potterne material and its appearance throughout the Deposit, however, the bulk of it is likely to be contemporary with the other material with which it was excavated.
>
> (Healy 2000, 207).

The typological aspects expected for a flint assemblage of this date further support the technological attributes. Diagnostic pieces total 13 (from trowelled areas in cutting 12 only) and are limited to scrapers that are typically thick and steep and modified by only a few relatively large removals; piercers; coarse denticulates and an atypical 'fabricator' (table 5-4), (Healy 2000, 206). These implements are supplemented by miscellaneous retouched pieces, which include two otherwise unmodified flakes that have their bulbar ends thinned by Janus flakes (*ibid.*). No further comment can be made on the technological and morphological aspects at present as there is no additional information in the published report, and therefore a sequential study of the flints with associated material follows.

Table 5-4: Breakdown of retouched flint from 'off-terrace' columns in cutting 12, Potterne (after Healy 2000, 207).

zone	scrapers		piercers		denticulates		fabricators or rod		misc. retouched		hammerstones		total retouched flint
	a	b	a	b	a	b	a	b	a	b	a	b	
1									1				1
2		1							1				2
3		1											1
4				1					1		2	1	5
5	1							1	1	1	1		5
6				1	1				1				3
7													0
8	1	1							2				4
9			1						2				3
10					1	1			1	1			4
11									1				1
12													0
13	1								1				2
14											1		1
total	3	3	1	2	2	1		1	12	2	4	1	32

a = columns 21-2, 26-7, 36-7, 46-7 b = columns 102-3,112-3

Sequencing and technology change

Healy suggests that the most obvious change in the numerical occurrence of the flint material is that there is progressively less flint in relation to the occurrence of pottery between zones 7-6 and suggests that flint utilisation falls distinctly at this time (*ibid.* 206). Figure 5-6 above however, shows that flint from all of cutting 12 and not just 'off-terrace' material shows a general decrease between zones 10-7 (approximately 9th-7th century BC in relation to pottery forms (Gingell & Morris 2000, 150-151)) and then is pretty consistent until zone 1 (Healy's Fig 77. *ibid.* 205). Off-terrace numbers also show a similar situation (table 5-2). The only suggestion that can be made from these pottery ratios (seen in table 5-3) is that there was an increase in pottery production or trade between zones 7-2, peaking in zone 5 (dated between 9th – 6th century BC (Gingell & Morris 2000, 150-151)).

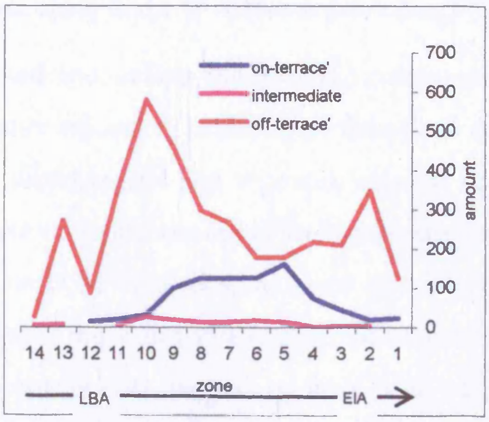

Figure 5-10: Variation in flint numbers between 'on-terrace' and 'off-terrace' areas in cutting 12 by zone.

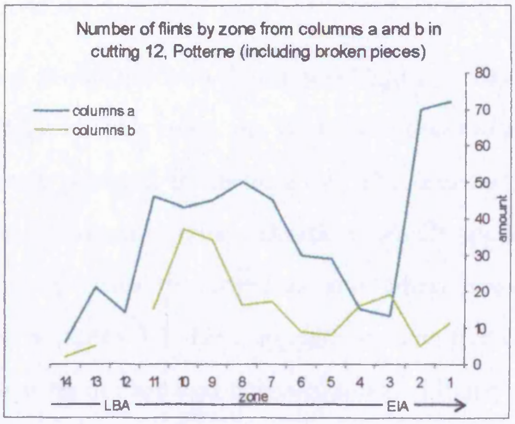

Figure 5-11: Variation in numbers between columns 'a' and 'b' 'off-terrace' areas of cutting 12, Potterne.

Figure 5-10 shows that there is a significant difference between the amount of material found in the 'off-terrace' area when compared with both the 'on-terrace' and intermediate areas. There are, however, three points that require discussion. First, in zones 14-12 there are much greater quantities of flint recovered from the 'off-terrace' area, peaking in zone 13. This may be explained by the absence of these zones in some areas as mentioned previously (Lawson 2000, 39). Second, although there is a general increase in flint use between zones 11-8, the number in zones 11-10 'off-terrace' rises dramatically and plainly falls between zones 9-6 to its lowest between 6 and 5. This can be contrasted to the 'on-terrace' area where flint numbers steadily increase and level out between zones 10-6, with a final increase peaking in zone 5. It is possible that between zones 11-8, cores were utilised much more than in later phases, producing more waste to each core. This is supported by the type of cores present (fig. 5-9) where there are slightly less cores present in the zones 11-8 than between 7-5 (particularly zone 5). In addition, cores from zones 11-8 are generally more distinguishable than those from 7-5 where they are mainly unclassifiable, tested nodules or multi-platform cores. Third and relevant to the suggestion made by Healy concerning tillage damage, there is a clear rise in material between zones 3-1 'off-terrace' with very limited numbers in the other areas. As highlighted above, Healy suggested that the high frequency of miscellaneous debitage in zones 3-1 was the probable result of tillage in the area (Healy 2000, 206-207). This is based on the presence of small fragments of flint – 20-30mm – with small negative flakes scars, the fact that 'very few' small flakes were also present, and that this type of material is absent from lower zones (*ibid.* 206-7). If the whole area was under tillage from the Romano-British period onwards, why can we not see a similar pattern between all three areas? There is an increase in numbers of flakes here – complete and broken – and general debitage, but does this necessarily indicate tillage damage rather than an increase in use, especially as there is an increase in core numbers, particularly in the 'a' columns (see table 5-3)?

In addition, indications from the current studies show that Iron Age assemblages do have a greater amount of unmodified flakes and debitage in their make up, therefore it would not be surprising to find a greater amount of waste material to dispose of. The amount of waste in earlier zones has been suggested to reflect greater core utilisation, which appears to drop by zone 5 with flakes possibly removed from the cores as and when needed without much in the way of preparation. Then in zones 3-1 there appears to have been an increase in core usage along with more waste due to unprepared core utilisation. Hence the increase of material seen from 'off-terrace' areas in zones 3-1 compared to the other areas (fig. 5-10), may be explained by an increase of 'waste' produced by a change in technology evidenced by a lack of knowledge or concern with regards to the end product. A comparison between a typological breakdown of the 'on-terrace' material and that seen from the 'off-terrace' would be of value, to see if there are greater numbers of retouched, miscellaneous retouched or unmodified utilised flakes on the 'on-terrace' area against 'waste' material.

Figure 5-11 highlights that the much lower number of flints used for detailed analysis by Healy from columns 'a' and 'b' is representative of the overall pattern of 'off-terrace' material. This may also support Healy's statement that trowelled material used is also representative of the overall technology and morphology of the assemblage (Healy 2000, 205). Although there are slight variations in numbers between the two sets of columns in the 'off-terrace' area, this may only be subject to which part of the 'off-terrace' area the material was thrown to when initially disposed of.

Associated material & dating (table 5-5)

In this large assemblage there are only nine pieces (which were given special finds numbers) of earlier technology represented and recovered from cutting 12, which Healy did not include in the general analysis. At present there is no other information indicating their location within the zone sequence, but their number and date are similarly represented by one sherd of local Peterborough ware (column 111, context 3411), one beaker sherd (column 90, context 3368) and 15 undecorated sherds of beaker type (Morris 2000, 137). These were two leaf arrowheads (SF730 and SF1122) usually dated to the Early-Middle Neolithic (Green 1980, 93; cited in Healey 2000, 208), a ripple-flaked oblique arrowhead (SF813) usually associated with Grooved Ware (Green 1980, 115-6 cited in Healy 2000, 208) and six 'thumbnail' scrapers (SFs 553, 876, 1194, 1626 and 1768) generally associated with Beaker pottery (Smith 1965, 107 cited in Healy 2000, 208). The latter, however, need not necessarily belong to an earlier phase as thumbnail scrapers have been found in later contexts (Young *pers. com.*). It is also suggested that a few blades/blade-like flakes are most likely from an earlier phase as they are generally more glossed/edge-damaged than the rest of the material (Healy 2000, 208). It will be interesting to discover if these earlier flints are associated by context with the pottery sherds so as to pin-point their location within the Deposit.

Pottery

The pottery assemblage from Potterne is vast and varied in form and design. As such it provides a valuable tool for establishing a dating sequence. Morris has argued that Zones 14-11 and adjacent levels in cuttings 2, 3 and 10 are representative of plain assemblage phases from Late Bronze Age or Post-Deverel-Rimbury traditions dating to the 10-9th centuries BC, but possibly starting slightly earlier than 1100 BC (Morris 2000a, 161).

Pottery from the 'off-terrace' area of cutting 12 was used to date zones 10/9-2, which typify the decorated phase of Late Bronze Age pottery in lowland England (*ibid.*) The absence of any 'round bodied' bowls, particularly 'haematite-coated' when Potterne lies within its distribution area, suggests a date prior to the 5th century BC, and therefore Morris suggests that final deposition of debris onto the Deposit was around the 7th century BC. Zones 9-2 therefore suggesting an overall date between the 9-7th century BC, with the lower zones probably dating to the 8th century and the upper zones to the 7th century, with its closest comparison being that from the Early All Cannings Cross group (*ibid.* 161, 165). There is a presence of later pottery dating to the Romano-British period (total 973 sherds) primarily from all topsoil contexts including zone 1, but only 280 are from cutting 12 (Seager Smith 2000, 177-178). Some of these are intrusive to the upper zones, down to 30-40cm, but only in small numbers *i.e.* four sherds in zone 4 and one in zone 5 (*ibid.* 178). Medieval pottery was also found in zones 2 and 3 with very few intrusive sherds in 4 and 5 (Mepham 2000, 179). The sequencing of the Late Bronze Age-Early Iron Age, Romano-British and Medieval pottery shows that the Deposit was virtually undisturbed, and any disturbance that was present was relatively limited and restricted to the uppermost zones.

The pottery analysis shows that pottery production was probably locally based in the earlier occupation, with a small amount of non-local wares (similar to phase 2 at Old Down Farm). In zones 9-2 however, non-local pottery increases from 5% to 16%, and in zone 3 to nearly 20%. The raw materials analysed from the non-local wares came from over 15km away from the site, which suggests that the settlement was linked to the Bristol Avon valley trading networks (Morris 2000b, 166, 172). Therefore, the use of flint cannot be linked to the lack of availability of metals through trade.

Copper alloy

Copper alloy finds decrease in number over time, and Lawson speculates whether this is due to a change in activities or replacement with other raw materials (Lawson 2000, 193). Figure 5-12, however, shows that although this is generally true, the overall trend line matches that of the flint in figure 5-10. Figure 5-12 implies a higher level of activity between zones 13-9, followed by a dramatic drop in zone 8. This then increases again steadily until zone 4. Using these two charts together could indicate that the settlement associated with the Deposit experienced two increased levels of activity, with a quieter period between zones 9 and 7.

A typological breakdown of the materials shows that awls were found in all lower sequences (up to zone 7), with a single needle in the base of cutting 3. In the deeper deposits, awls and pins were also associated with cast blades (*ibid.*). Although vessels were present in some of the earlier zones in the form of fragments, after a period of absence between zones 10 and 8, they are the most represented form of copper alloy object in later phases (zones 6-3). It is suggested by Lawson (*ibid.*) that this distinct change in numbers between tools and vessels represents either a different functional use for bronze, or a change in the way bronze was used to represent fashion accessories. The presence of 'ornaments' however, throughout the period – apart from zones 8 and 7 – may suggest that it was to do with a change in functional use rather than fashion, although fashion can also be argued to play an important role in functional use also (see figure 5-13).

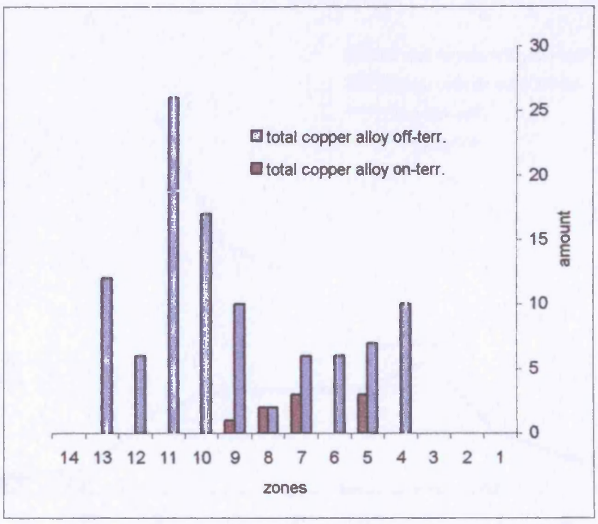

Figure 5-12: Total number of copper alloy artefacts from terrace areas, Potterne.

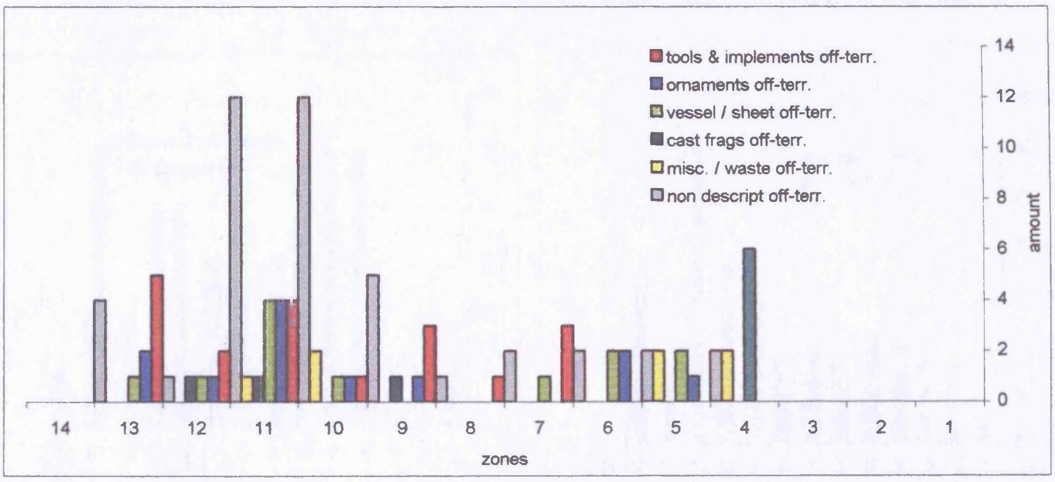

Figure 5-13: Typological breakdown of copper alloy artefacts - pre-zone 3 (after Gingell 2000, 187).

It is further suggested by Lawson that many of the items could date from as early as the 12th century based on comparisons with other hoard assemblages, but the presence of a bag-shaped chape at the base of zone 11 must date the copper alloy artefacts to the 10th century BC. Essentially, the lower zones are dated to the Late Bronze Age and the upper to the Early Iron Age (Lawson 2000, 193, 195). It was also proposed that bronze working was probably only carried out in the early phases (*i.e.* zone 11 and 10) evidenced by the small amount of bronze lumps and single cast runner (*ibid.* 193). Recent research, however, argues against the Potterne site having Late Bronze Age origins, based primarily on the metal dates. Needham's research re-evaluates our accepted knowledge that Ewart metalwork terminates at 800BC and by using new pottery data and C^{14} shows that our existing dates can be pushed back. As a result he has suggested that all of the Potterne site should now be dated to the Iron Age proper (*seminar presented at the EIAS, Durham* 2001).

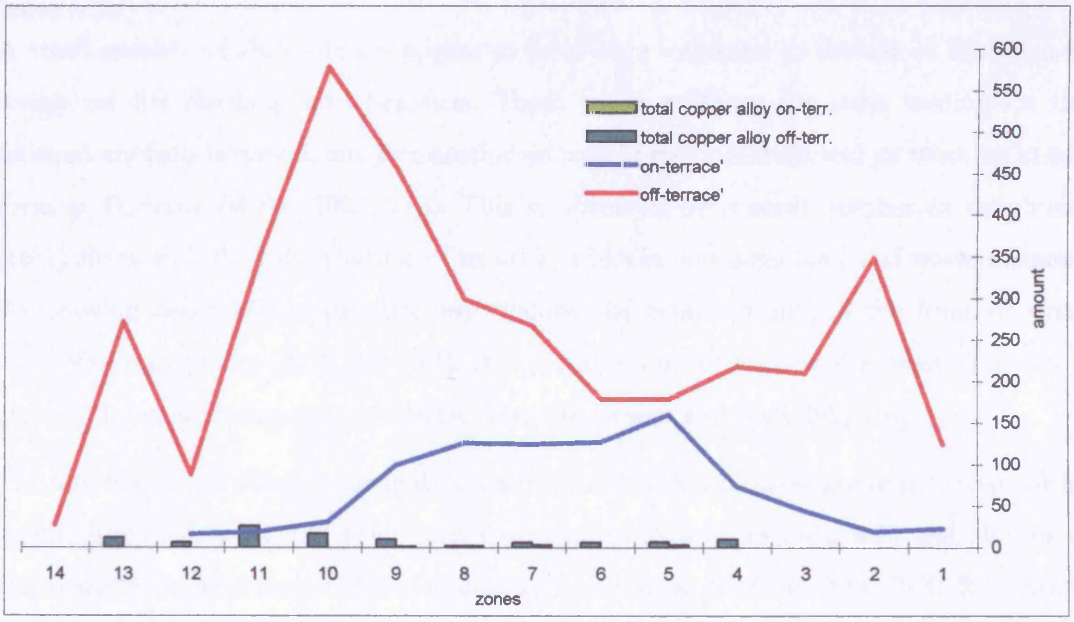

Figure 5-14: Comparison of copper alloy (bars) artefacts against flint (lines) from cutting 12.

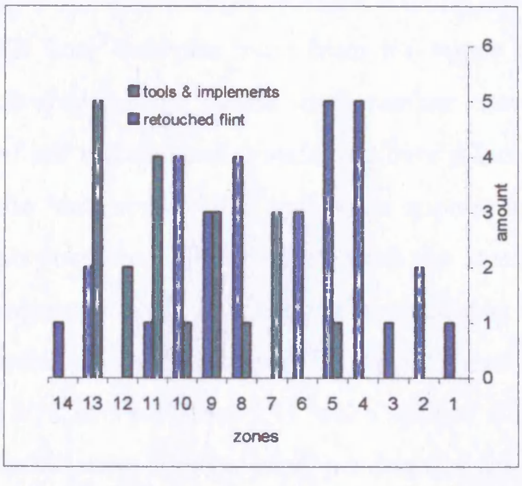

Figure 5-15: Copper alloy 'tools' from the whole site at Potterne against retouched flints from trowelled columns only.

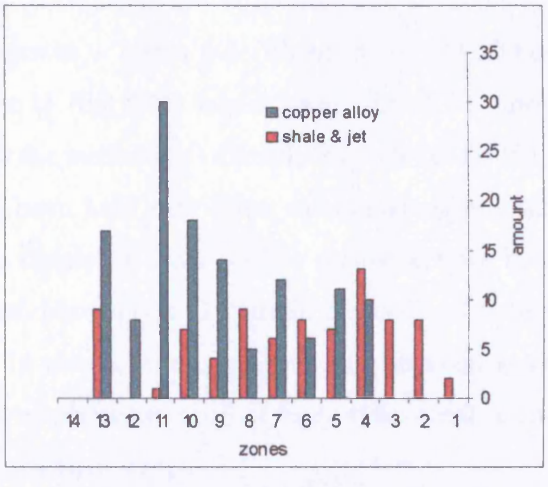

Figure 5-16: Copper alloy artefacts against shale and jet artefacts from Potterne.

It is clear from figure 5-14 however, that despite the copper alloy artefacts being varied and dateable, their numbers are nothing in comparison to the quantity of flint on the site. Some of this may be accounted for when considering that much of the copper alloy would have been recycled, yet figure 5-14 shows the total number of copper alloy artefacts (pre-zone 3) from the whole site against those from cutting 12 only. This must show that despite recycling, flint was utilised as much, if not more, than copper alloy at this time even into the Early Iron Age. This is even clearer when comparing the copper alloy 'tools' from the whole site, against retouched flints from the trowelled columns only (fig. 5-15). If all potentially functional and utilised unmodified flakes were also added to figure 5-15 and the remaining flint pieces from all of cutting 12 had been broken down in this manner, then the point could be emphasised further.

Shale & Jet

A small number of shale objects appear to have been imported to the site in the form of roughouts for finishing into bracelets. There is no evidence for lathe turning on the finished artefacts however, and not much evidence to support shale and jet working in any form at Potterne (Wyles 2000, 213). This is observed by a small number of roughouts (16%) along with the total absence of unworked blocks and large lumps of waste material. Wet sieving also failed to produce any evidence of manufacturing in the form of small waste shavings (Wyles 2000, 211-213). It is suggested by Wyles that the finished artefacts and roughouts were imported, probably from the Dorset area (*ibid.* 208, 210).

The absence of any shavings or spalls does not rule out finishing or working of shale or jet totally. The evidence could have been destroyed as shale does burn well and also small fragments could have been reduced to nothing by lamination (Wyles 2000, 213). Roughouts that do exist appear to be distributed in or near to loose clusters of shale artefacts, but only general patterns are suggested due to their small number (*ibid.*).

All finer examples came from the upper deposits – zones 6-3 (Wyles 2000, 213). Their absence in zone 12 and small number in zone 11 (fig. 5-16) may suggest a break in supply of raw material and as such may have affected the availability of finished goods (*ibid.*). If so, the high social value that shale appears to have held may have stimulated other trade networks and after a short break the steady supply of shale objects seems to have been reinstated (*ibid.*). A substitute material may also have replaced a gap in the market for high status goods at this time. Figure 5-13 and 5-16 shows that it was precisely between zones 13-11 and particularly 11 when copper alloy artefacts are at their highest in number and variety, with some possibly produced at the settlement also.

These comments on the copper alloy and shale artefacts become even more relevant when placed alongside the flint evidence. Flint numbers drop to their lowest in zone 12 (fig. 5-6) and again in terms of 'off-terrace' material in zone 5-6 (although flint peaks again in zone 5 'on-terrace' the numbers are still low (table 5-2)). Although much of these levels may have a lot to do with the rise and fall in activity on the settlement, zone 12 is precisely where we see a drop in shale and a rise in copper alloy artefacts (fig. 5-6). Flint has long been recognised as a tool for working shale throughout the Iron Age and Romano-British period, particularly at Kimmerige, Dorset (Calkin 1948; Davis 1936; Woodward 1987). After this period shale numbers continue to rise steadily and peak in zone 4, just where we begin to see another small rise in flint numbers (figs. 5-10 and 5-16). This is even more apparent when we view all copper tools against those retouched flint tools from trowelled columns only. Figure 5-5 shows that in zones 13-11 copper tools outnumber flint tools, yet when copper tools reduce in number, flint ones takes over. It is suggested that this indicates either a lapse in the trade of copper alloy as a raw material – though one would expect this trade to increase as bronze became less expensive – or that these two types of tool were used for different tasks. The latter situation is suggested in this case.

To stress this point, figure 5-17 shows how the fluctuating presence of retouched flint, shale and jet, and worked bone (discussed below) fit well with each other. Where there are drops in the levels of worked shale, jet and bone, there are also drops in the levels of retouched flints. Furthermore, these figures do not take into account any unmodified flakes that also may have been utilised. The sharp edge of a flint implement is sharper than any other material and costs less to replace than any metal, which needs constant re-sharpening. As such it is a prime material for tasks such as working shale, jet and bone. As bone is softer however, sharp copper tools could have also been used for this purpose. This may have been the case in zone 7 where we see only a small drop in worked bone artefacts, no or little evidence for flint implements, but an increase in copper tools (figs. 5-17 and 5-15 respectively).

Worked bone

A large quantity of worked bone and antler was recovered totalling 247 pieces from a variety of tools and fittings (Seager Smith 2000, 222). The majority of the objects could be sourced to the animal species and in some cases, bone type. Twenty-one percent were of antler, mainly red deer, and the vast majority of the worked bones were from domesticated species (*ibid.*). The objects were classified into seven groups (table 5-5); pointed tools, bladed tools, toothed tools, dress/decorative and gaming pieces, miscellaneous and antler (*ibid.* 223). The discussion on the manufacture of these items does not include the type of manufacturing tools that may have been used. This is not uncommon and it can only be presumed that the usual assumption is that metal artefacts were utilised. Yet figure 5-17 may go some way in supporting the idea that flint implements were at least part of the tool kit used for working bone.

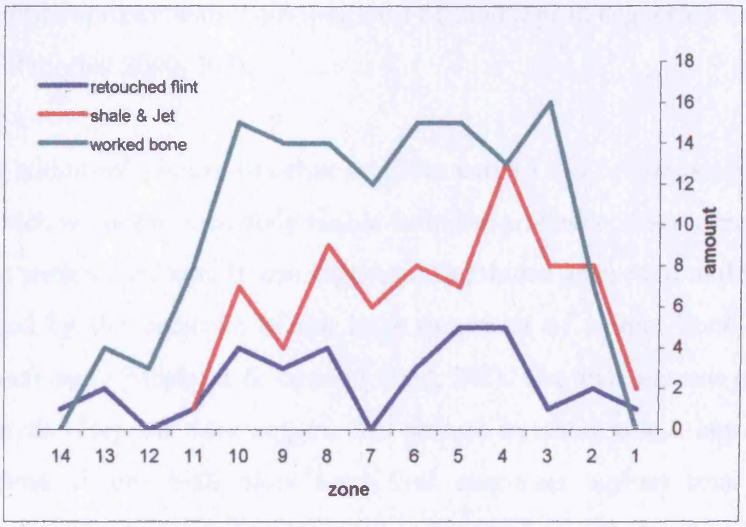

Figure 5-17: Retouched flint from the trowelled off-terrace columns in cutting 12 plotted against worked shale, jet and bone.

Iron

Only 14 iron artefacts are reported in the Potterne report and are considered to be the only artefacts contemporary with the Deposit coming from zones 3 and below (Cleal & Lawson 2000, 202). In total 331 iron objects – excluding unstratified finds – were recovered from the excavations but the majority of these are considered to be of Romano-British or medieval date (*ibid.*). Of the 14, only a sample are described in the report and no further details were available from a detailed study of the archive (table 5-5). Two are from zone 3 'off-terrace' and are thought to possibly be a punch and a round sectioned awl. From zone 4 'off-terrace' we have a possible tanged blade and from zone 5 'off-terrace' two objects which are thought to be similar to Romano-British toiletry sets, but which occur more commonly in copper alloy, and a possible tang from a small implement (*ibid.*).

Although it is suggested that pre-zones 3 and 4 are largely undisturbed, there are a few items of recent date that have been introduced into these layers and isolated pieces were found as low as zone 8 – a wire nail and button – but these isolated items are generally small and could have been introduced by tillage or burrowing animals (Cleal & Lawson 2000, 202). As it is difficult to date the introduction of iron into Britain due to the general scarcity of metal on sites until the later Iron Age (Ehrenreich 1985 cited in Cleal & Lawson 2000, 202), it is first suggested by Cleal and Lawson that all of the iron material could be of a later date. As the 14 pieces are generally small and non-descript, they go on to propose that these pieces are contemporary with the prehistoric levels and probably date to the 9th-7th century BC. Late Bronze Age sites have produced iron objects and slag (Ewart Park), signifying that iron working was beginning to be carried out at the height of bronze casting in 9th century BC (Turnbull 1982 cited in Cleal & Lawson 2000, 202). These dates are supported by the small amount of ferrous working debris present and analysed samples are thought to be contemporary with the upper level of the Deposit suggested to date to the 7th century BC (McDonnell 2000, 203).

Other activities

To generate an additional picture of other activities carried out by the people who created the Deposit, which are not immediately visible from the artefacts present, requires a general overview of the material culture. It was suggested that hides were used and worked on the site as evidenced by the presence of the large quantities of animal bone, worked bone points and bronze awls (Mepham & Lawson 2000, 242). The vast amount of animal bone recovered from the Deposit does suggest that animal butchery was a key activity at the nearby settlement. Figure 5-18 plots total flint quantities against total animal bone fragments by zone. The two sets of comparative figures demonstrates that flint utilisation falls neatly within the trend line for animal bone waste at least between zones 14 to 10. Despite the difficulties of establishing tool type utilised in prehistoric butchery practice (butchery marks resulting from dissecting and filleting are very hard to distinguish whether they are the product of flint or metal implements) it can, as a minimum be suggested that flint implements may have been employed in butchery practice at least between the end of the Late Bronze Age and the beginning of the Early Iron Age (zones 14-10). The separation of the two trend lines beyond zone 10 may be a reflection that another tool was utilised for butchery. The argument for flint utilisation in butchery practice is however, at this stage merely a theory (see Appendix 6 for an experiment to test the practicalities of this theory) and the material associations between the zones at Potterne to support such a theory are tentative, but nonetheless worthy of note.

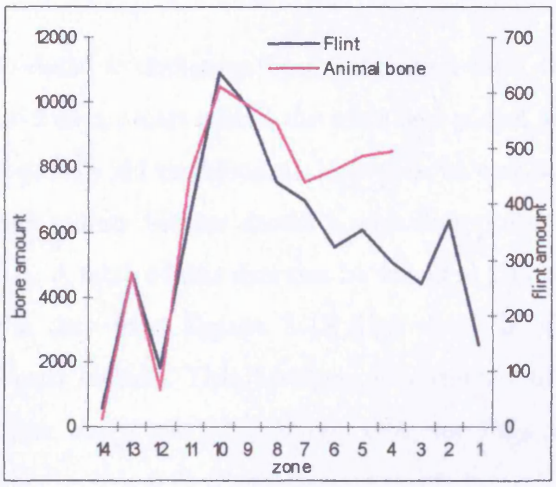

Figure 5-18: Total flint quantities and animal bone fragments by zone from the Deposit at Potterne.

Textile production was also suggested by ceramic spindle whorls and loomweights showing that spinning and weaving took place as did sewing, on the basis of the presence of bone needles. These activities peaked between zones 10 and 8, and between 4-2 (*ibid.*), which once again corresponds with the flint peaks presented here. It was also apparent that bone and antler working was carried out, as discussed earlier, seen in the relatively large quantities of worked bone and antler artefacts (fig. 5-17 and table 5-5). Conversely, flint utilisation and production was not discussed in the report in the overview of activities, nor was flint discussed in terms of its use as possible tools for tasks such as hide and bone working. It is suggested here that the quantity of flint recovered from the site suggests that flint played an important role in the daily tasks performed by the people creating the Deposit. The only diagnostic types of implements present in the assemblage are those suited to carry out tasks such as hide and bone working *i.e.* scrapers and piercers. The large amount of miscellaneous retouched pieces furthermore fits the pattern of implements expected from an assemblage of this date, but without further identification their function cannot be suggested.

Deciphering deposits within a larger context

Here an attempt is made to try and identify individual deposits, or periods of deposits within the midden, with a view to associate disposed flints with any prospective waste material with which the flints had been utilised. In order to do this, numbers of flints were plotted against the instance of other material culture; copper alloy, shale and worked bone. The overall result can be seen in figures 5-19 a,b,c (also available in **CD** Appendix 2a). There are, however, some important issues to point out here. First, the individual zone levels may cut horizontally through a single deposit, essentially splitting the evidence. Second, the occurrence of non-flint artefacts was usually as an instance of a single item not considered production waste but an actual artefact, such as a copper alloy pin or a shale bracelet.

Two options were considered to eliminate these difficulties. First, the excavation recorded a large number of individual contexts within the grids and zones, and artefacts were listed against each other to hopefully aid visualisation. However, as very low numbers of artefacts were found in association within discrete contexts, excluding pottery and animal bone, this data was of very little use. A table of this data can be found in **CD** Appendix 2b. Second, it was considered that the data from figures 5-19 a,b,c could be fed into a 3-D density plotting program to identify clusters. This, however, would not satisfactorily split apart any deposits from one another, and it was felt that very little new information would be gained from such a procedure.

All things considered, the visualisation of the horizontal spread of material by zones does provoke some interesting observations. It appears quite clearly that in zone 14 there is a

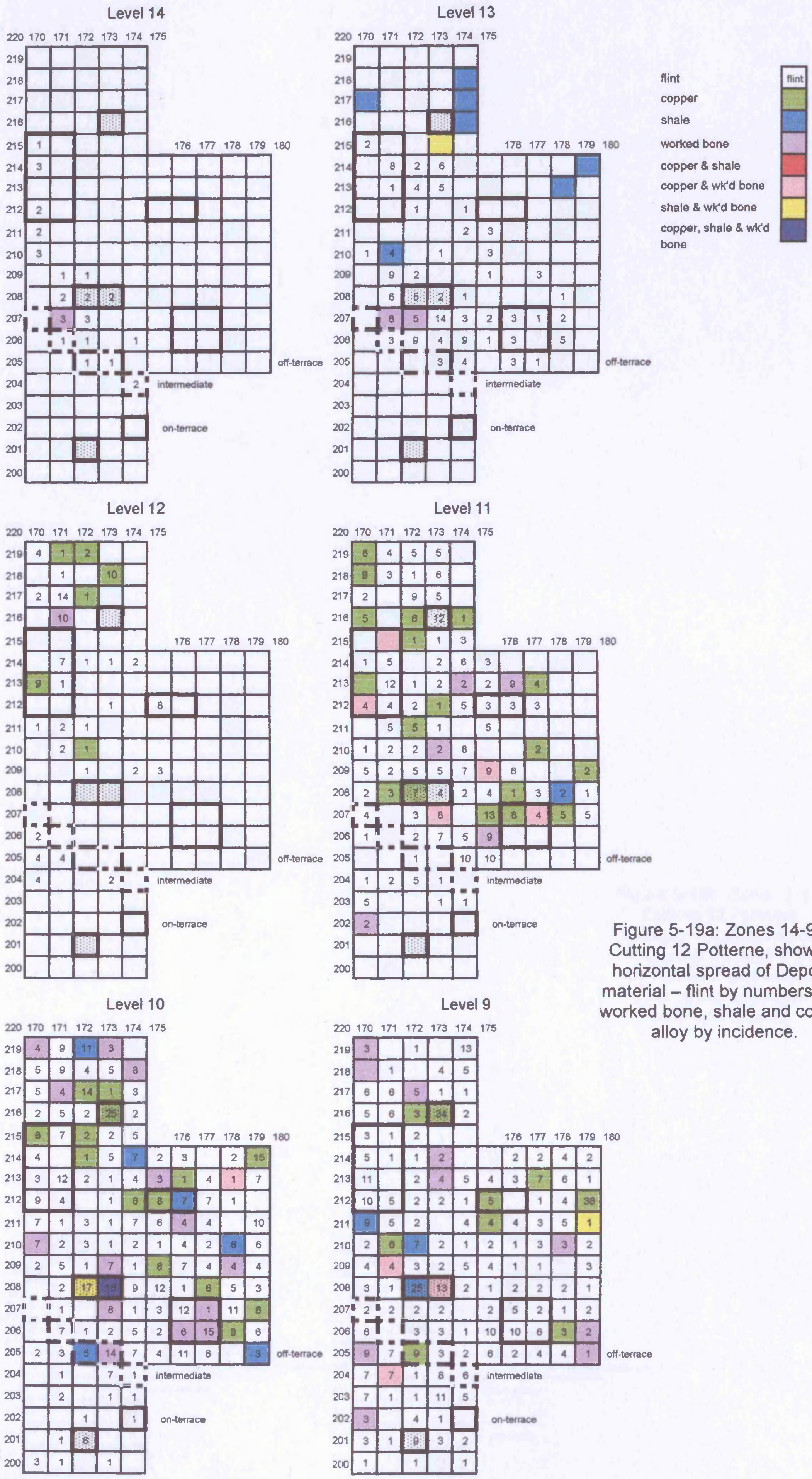

Figure 5-19a: Zones 14-9 of Cutting 12 Potterne, showing horizontal spread of Deposit material – flint by numbers and worked bone, shale and copper alloy by incidence.

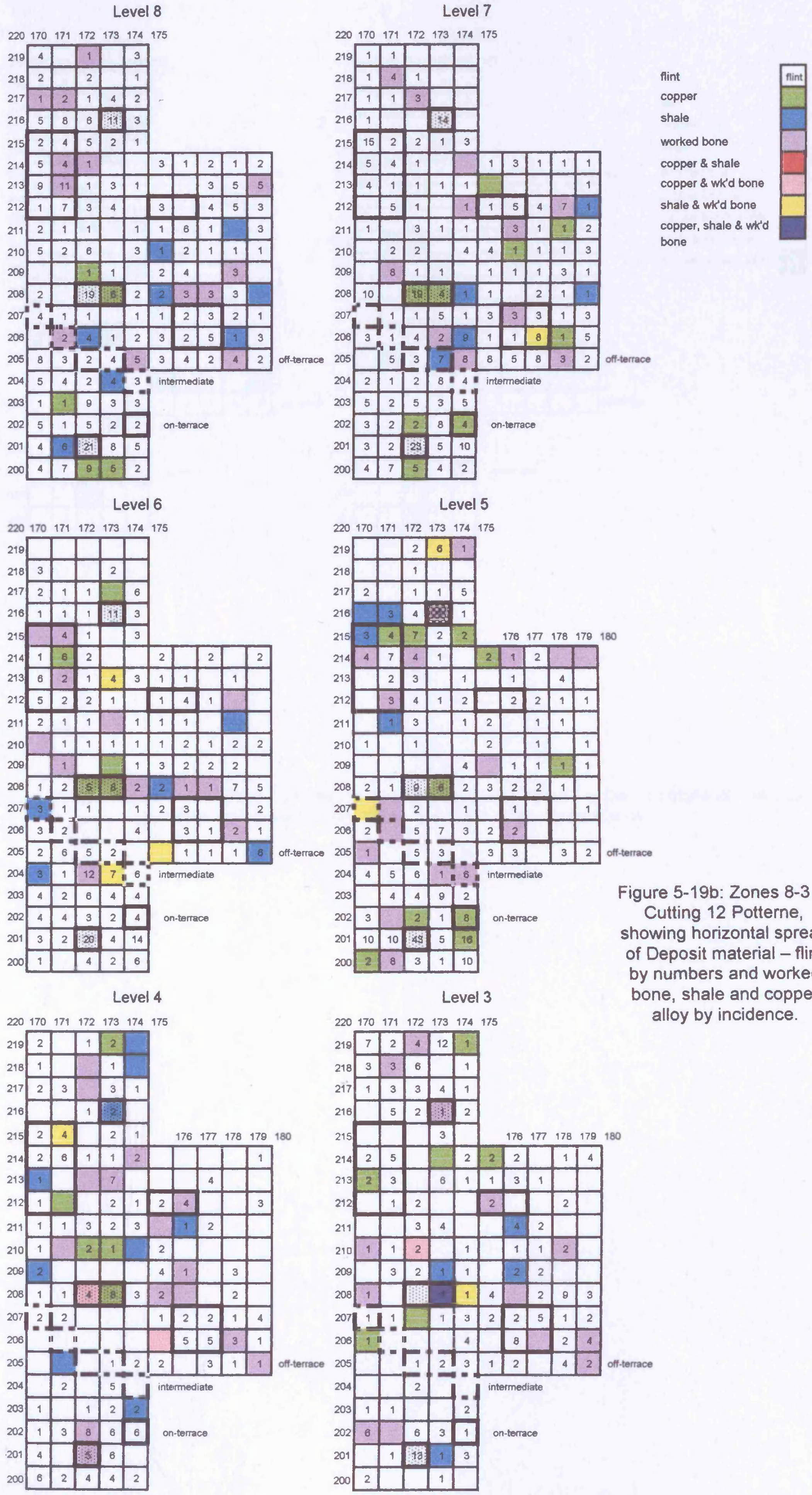

Figure 5-19b: Zones 8-3 of Cutting 12 Potterne, showing horizontal spread of Deposit material – flint by numbers and worked bone, shale and copper alloy by incidence.

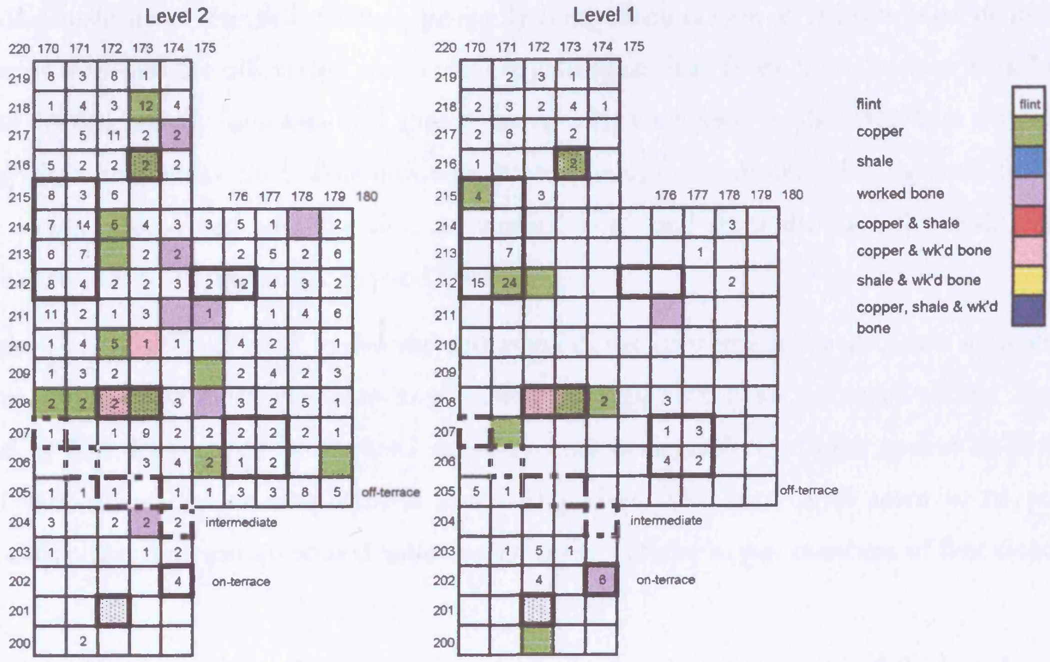

Figure 5-19c: Zones 2-1 of Cut ting 12 Potterne, showing horizontal spread of Deposit material – flint by numbers and worked bone, shale and copper alloy by incidence.

gradual build up of dumped material, primarily flint, which begins on the intermediate and spreads over into the off-terrace area, essentially dumped away from the on-terrace area. In zone 13 this activity increases and spreads away with a decrease in flint numbers farther away from the terrace area. This indicates the beginnings of a mound sloping away from the terrace. Associated with the flint are worked bone and shale although the shale has spread further from the terrace beyond the flint.

Zone 12 is a difficult level to discuss and suggestions concerning the decrease in shale items and increase of copper alloy as a 'valued' material have been discussed above. The level of flint does reduce in this level as seen earlier in figure 5-6, and the spread of flint and increase of copper alloy here is also visibly clear. Yet, there does seem to be an indication that flint was associated with worked bone with the higher numbers of flint close by.

Zones 11 and 10 see a marked increase in activity with a dramatic spread of flint artefacts over the off-terrace area and spread into the on-terrace. The two zones also see the re-introduction of shale and a large build up of waste evidenced by higher numbers of flint with worked bone, shale and copper alloy all together, just beyond the edge of the intermediate area; an expectation given the belief that waste was thrown away from this edge, but this was where two of the one metre grids were trowelled and as a consequence smaller artefacts could have been found opposed to mattocked areas.

Between zones 9 to 5 there appears to be a fairly standard level of activity in which the levels of material remain quite evenly spread over the midden, with worked bone still the primary associated material with flint. The level of material retrieved from the on-terrace area also remains fairly constant but with a high concentration of flint in grid number 202/172 through to zone 3. This, however, is most probably due to the environmental sampling and trowelling of this square as just previously mentioned. From zone 3, however, we can begin to see the reduction in material from the on-terrace area and a dramatic decrease across the whole of cutting 12 by zone 1.

It is clear throughout this visualisation that flint was systematically disposed of by the occupants who used this midden, with close associations of datable artefacts such as copper alloy alongside, above and below those of flint. When using this visualisation alongside the graph data, particularly the flint trend lines of figure 5-14 and the copper alloy trend line in figure 5-12 it is quite clear that flint was integral to the daily activities of these people.

Potterne summary

The combination of Healy's analysis and observations of the data made here clarify and strongly suggest that the flint assemblage at Potterne is of Early Iron Age date. The total integration of the flint material throughout the Deposit and the make up of the assemblage fall totally into the criteria expected for this date. In addition, the flint trend line follows neatly with the presence of all other material culture. The manufacture of flint implements as seen by flake material and core presence shows a picture of a small amount of activity at the end of the latest Bronze Age with a short period of reduced activity, followed by a dramatic increase where the site appears to have been utilised heavily. From this point there is a steady decrease in activity with a few peaks and troughs ending with a final peak in zone 3-1. Implements are again dominated by variously retouched flakes, followed by scrapers and then piercers.

The associations of flint with other materials and the possible usage of flint implements appear to lie neatly with worked bone (and given the considerable amount of animal bone on site, *potentially* animal butchery too) and shale and jet. The peaks and troughs between these materials indicated above in figures 5-17 and 5-18 are too concurrent to be easily dismissed in the case of Potterne and make a strong case for this to be observed at other sites. In support of this data are the lack of other tool types in metals and, allowing for any recycling arguments, on the whole metals flowed against the patterns given for all three of the above materials and activities.

zone	Flint				Pottery				Copper alloy													
	on-terrace'	inter mediate	off-terrace'	*Total*	Early prehis.	off-terrace vessel form sherds			tools & implements		ornaments		vessel / sheet		cast frags		misc. / waste		non descript		*total copper alloy*	
						bowls	jars	cups	off-terr.	on-terr.	off-terr.	on-terr.	off-terr.	on-terr.	off-terr.	on-terr.	off-terr.	on-terr.	off-terr.	on-terr.	*off-terr.*	*on-terr.*
1	23		**125**	*148*															0		*0*	*0*
2	19	4	**348**	*371*		69	24	1													*0*	*0*
3	44	4	**210**	*258*		149	100	3													*0*	*0*
4	74	3	**218**	*295*		289	163						6				2		2		*10*	*0*
5	160	14	**179**	*353*		293	259	7		1	1		2			1	2		2	1	*7*	*3*
6	127	18	**179**	*324*		167	178	1			2		2						2		*6*	*0*
7	125	15	**267**	*407*		107	122		3			1	1	1					2	1	*6*	*3*
8	126	15	**299**	*440*		58	107	1	1									2	1		*2*	*2*
9	99	20	**457**	*576*		36	125	1	3		1			1	1				5		*10*	*1*
10	31	27	**579**	*637*		14	56	3	1		1		1				2		12		*17*	*0*
11	19	5	**351**	*375*		4	18	1	4		4		4		1		1		12		*26*	*0*
12	16		**88**	*104*			1		2		1		1		1				1		*6*	*0*
13		6	**272**	*278*	2	1	4		5		2		1						4		*12*	*0*
14		5	**27**	*32*			2														*0*	*0*
total	863	136	**3599**	*4598*	2	1187	1159	18	19	1	12	1	18	2	3	1	7	2	43	2	*103*	*8*

zone	Iron		Lead	Shale & Jet	fired clay	worked bone (off-terrace)						
	objects	working (g)			spindle-whorls	pointed tools	bladed	toothed	dress/dec./gaming	misc.	antler	total
1				2								0
2				8	1	5				2		7
3	2	1		8	4	5	5		1	4	1	16
4	1			13	10	8	2			3		13
5	2	845		7	2	4	3		1	3	4	15
6				8	1	7	1	1	1	4	1	15
7	see arcive for more details		archive	6	1	5	2		1	3	1	12
8				9	5	6	4		1	1	2	14
9				4	6	3	1	1	3	3	3	14
10				7		9	2		1	1	2	15
11				1		5	1			1	1	8
12										2	1	3
13				9	1	4						4
14												0
total	5	846	0	82	31	61	21	2	9	27	16	136

Table 5-5: A breakdown of all prime associated artefacts from the Deposit at Potterne.

Flint numbers are based on material from cutting 12 only as are the majority of materials. Some however, are from the site as a whole. See relevant section headings for further detailed information

Winnal Down, Winchester

General

The site of Winnal Down (SU 498303) lies directly over the two Hampshire parish boundaries of Winchester and Chilcomb on Upper Chalk, overlooking the Valley bottom 30m below (Fasham 1985, 3). Although the flint assemblage from this site has already been suggested as contemporary with the Iron Age settlement by Fasham and Winham, it has been chosen here for further study in order to identify any additional Iron Age characteristics. Primarily however, the site was chosen to identify any artefact associations present that may help identify what the flints were used for, as this was not covered in the initial study.

Aerial photographs taken for an archaeological survey of the M3 extension route discovered the enclosure complex, which was destined for total destruction. Despite its smaller size, the site proved to be far more complex and had a longer history than other sites with full excavation such as Little Woodbury and Gussage All Saints (Fasham 1985, 3). Principally the site consisted of a D-shaped enclosure with internal structures and features spanning the Early and Middle Iron Age. Other structures and associated features were represented on a smaller scale from two periods; four roundhouses and a fence belonging to the Late Bronze Age and four linked enclosures and a track from the Romano-British period (Fasham 1985, 3, 9, 31).

A total of 31 acres was machine stripped and features discovered in the chalk were excavated by hand. The machine removed all topsoil down to the chalk due to time restrictions, but the field walking data, which produced only a few medieval sherds and virtually no Roman and prehistoric finds, further validated this. It was reasoned that the shallow depth of the ploughsoil, 17-27cm, and hence recent shallow ploughing was the reason; although there was some evidence for deeper ploughing evidenced by plough marks in the chalk and some disturbance in the upper parts of the archaeological deposits (Fasham 1985, 4-5).

A total of seven phases were determined on the site (as listed below), but the majority represent all periods of the Iron Age. Fasham highlights, however, that any site which spans a 1000 years of activity will inevitably encounter some residuality problems (Fasham 1985, 7, 9), which is crucial to the dating of stratified lithics from the Iron Age (see Chapter 3). The problems of dating artefacts and phasing of features with intrusive elements at Winnal Down was overcome by dating each feature and not each layer within (except for enclosure ditch 5), therefore, some small residual elements are apparent when viewing tables of data. If this element was too high or indecipherable then the feature was deemed unphased, which was taken on board when considering the number of features given for each period (*ibid.* 7). With detailed study of the archive material it is hoped that *some*, if not all, of these unphased features can be identified as Iron Age by using the current criteria set out here. On visiting the NMR however, (where the archive was kept) the archive that was presented to me had very little information beyond the written report. At this point, it must be noted that Fasham and Winham (flint analyst) have never presented any argument against dating the lithics recovered from Winnal Down to the Early Iron Age, and do in fact make some very interesting observations about the flint that compare convincingly with the expected observations. Winham's only note of caution is that at the time of going to press in 1985 there was no comparable data to make any convincing arguments (*ibid.* 84-86).

- Phase 1 Neolithic
- Phase 2a Middle Bronze Age
- Phase 2b Late Bronze Age
- Phase 3 Early Iron Age
- Phase 4 Middle Iron Age
- Phase 5 Late Iron Age/Romano British
- Phase 6 Early Roman
- Phase 7 Medieval

The Flints

A total of 2,816 flints were recovered from the Winnal Down excavations (Winham 1985, 84), which is virtually half of the number retrieved from Potterne but still a considerable amount for this period in comparison to many other sites. This may be explained by two factors. First, the large site area was completely excavated whereas many other developer based sites are only partially excavated. Second, the majority of finds had been recovered from pits, quarry pits, and ditches and as such sealed deposits.

Technological and morphological attributes

Due to the large number of worked flints recovered from the site, Winham performed a basic identification on the assemblage as a whole (see table 5-6). Despite this, some of the observed criteria used throughout this thesis, can be identified in Winham's analysis. Only 1% of the artefacts were recognisable diagnostic retouched tools (Winham 1985, 84) and these are again limited to scrapers, borers and points. Only one residual diagnostic hand axe was recovered from a posthole in phase 3 (*ibid* 85, 86). Retouched and utilized flakes were slightly higher, reaching 8%, but the highest percentage of the assemblage, 79%, comprised unmodified flakes (*ibid.* 84), which is expected based on the criteria established in Chapters 2 and 4.

Detailed analysis was carried out on only 491 pieces (17%), the same size sample as Potterne, which appears to have been a highly productive sample when considering the observations made by Winham (table 5-7). The sample consisted of material from the phase 3 deposits of enclosure ditch 5, a 'reasonably well-stratified' context (Winham 1985, 84). Again, this detailed analysis highlighted several of the observed criteria expected for assemblages of this date. Table 5-7 lists the breakdown of this sample into artefact type and appears to represent the assemblage as a whole regarding the ratio of artefact types. The only diagnostic tools were scrapers and borers, with a high number of unmodified flakes and waste material. Again Fasham points out that only 1% of the sample comprised diagnostic implements, but with the addition of miscellaneous retouched and utilized flakes the percentage rises to 7% (*ibid.*).

Table 5-6: Flint artifacts viewed by phase from Winnal Down, Hampshire (after Winham 1985, 85).

Flint type	2	3	4	5	6	7	NP	total
Flakes	7	707	527	36	456	8	437	2178
Retouched flakes	1	49	46	3	27		37	163
Utilised flakes		19	21	1	10		12	63
Cores & core fragments	1	29	25		28		15	98
Chips	4	34	25	2	30	2	37	134
Blades		2						2
Fragments/Nodules	1	20	13	2	26		63	125
Core/Platforms rejuvenating flakes		8	5		2		9	24
Scrapers		8	1		5		4	18
Borers		1	2		2			5
Points			2				1	3
Hammerstones		1			1			2
Hand axe		1						1
Total	**14**	**879**	**667**	**44**	**587**	**10**	**615**	**2816**

Table 5-7: Description of flint artefacts from phase 3 enclosure ditch 5, Winnal Down.

Flint type	WD Ph 3, e.d.5
Complete flakes	293
Broken flakes	5
Chips/chunks	132
Retouched flakes	22
Utilised flakes	6
Cores	14
Core fragments	10
Core rejuvenation flakes	2
Scrapers	5
Borers	1
Scraper/borer	1
Total	**491**

From this sample Winham measured 148 flakes suitable for length: breadth ratio analysis; it is not known why only 148 were chosen to measure as he only states 'where possible' (Winham 1985, 84) which indicates that a possible 150 flakes were broken, but he clearly records only five from this sample. Those that were measured showed a preference for broad flakes, with breadth often exceeding length, although no single ratio dominated (see Winham 1985, 85, fig. 67), with lengths and breadths averaging around 40mm. Although the size of flakes, as stated earlier, are often indicative of the size of the raw material that is exploited, it appears to be a re-occurring flake size for material of this period; as seen by the analysis performed on the North Berstead and Budbury material later in Chapter 6. From Winham's report it appears that only 5-10% of the 148 flakes measured had true blade or blade-like qualities (*ibid.* 84). Actual numbers are not given, yet this is still a high figure when realising that only two true blades were recovered from the whole Winnal Down assemblage (table 5-6). The cortical state of the material is also as expected, with only one primary flake, 126 secondary and 21 tertiary. Virtually all of these flakes have obtuse striking angles (*ibid.*).

Winham's (1985, 86) description of the cores from the phase 3 enclosure ditch again matches the observed criteria expected for Iron Age flint assemblages. He used Clark's 1960 classification of cores to distinguish types and found six A2, 2 B2, 2 B3 and four C (for definition see Chapter 4, 54). Basically, the cores have either one platform (A2) but only partial use of the nodule; have two platforms (B2, 3) at oblique or right angles to each other; or a multiple number of platforms (C) with no discernable pattern to their use. All provide a picture of partial use of cores with no regular form of knapping, only to remove flakes from a suitable platform.

The ten core fragments are also quite high considering this is only a sample of the whole assemblage. This again fits with the observed criteria in that the frequency of core fragment seems to increase through the later Bronze Age into the Iron Age. It is supposed that this is due to less reliance on flint as a raw material and a *lowered* need to reduce cores to their fullest. As a result, nodules are hit more randomly and bashed resulting in more core fragments than earlier industries. This was evidenced in Winham's (1985, 86) observations of a 'crude approach to core utilization, many having just one or two flakes removed, but with occasional; attempts at regular flaking.' He also describes the cores as being 'very coarse' and 'irregular fragments' (*ibid.*).

Although Winham differentiates between core and core fragments for the detailed sample analysis, he does not for the entire assemblage. As discussed under sequencing below, there is a balance in total numbers between the phases, but it would be interesting to see if the balance was similar throughout regarding the number of cores to core fragments between phases.

On the whole Winham describes the sampled assemblage as:

> Although this assemblage is rather small, the trend was clearly for large, secondary flakes, with a tendency for them to be broad rather than long. The small percentage of tertiary flakes, the almost total lack of primary flakes and the small proportion of 'tools' compared with 'retouched flakes' suggest the lack of formalised flint working

> procedure with little detailed retouching. Any convenient flake, it seems, was picked out to retouch, rather than knapping to produce flakes of a specific type for retouching to form tools. This may indicate that flakes were utilized for the job in hand and then thrown away, rather than kept for further use.
>
> (Winham 1985, 86)

This I feel is one of the best summaries I have come across for characterising contemporary Iron Age assemblages. Indeed it fits neatly within the expected characteristics and criteria that were presented earlier. There are, however, two points with which I take issue, linked to the points I put forward in Chapter 2, 15-18). First, it seems increasingly that material of this type *is* formalised due to the reoccurring patterns in assemblages. Second, although in agreement that any convenient flake may have been chosen to retouch, if it is accepted that this type of assemblage was formalised, then the 'convenient' flakes must have been chosen according to a pre-determined flake requirement. For instance, it seems that thick-squarish flakes were required for tools such as scrapers, whereas D-shaped unmodified flakes with cortical platforms appear to have been utilised as cutting flakes. Just because the technology for these does not require a skilled knapper as a pre-requisite, it does not necessarily indicate a lack of knowledge or technique in knapping or predetermined ideas.

The last point made by Winham in the above summary is a common one when discussing flint assemblages of this date, that is the notion that any flint pieces made and used in the Iron Age period must be for *ad hoc* use. Although it may be the case in some instances, it is an assumption and there is no evidence to suggest against pieces being reused until either lost, broken or their purpose was fulfilled. Much of this idea is based on simpler technology and a reduced number of pieces recovered. Although discussed earlier in Chapters 3 and 4, *ad hoc* use should not be assumed from low numbers, as flint at this time was not relied upon as the sole material for implements, but as an alternative, or, best material for certain tasks and as such is expected to occur in lower frequencies.

As Winham admits, at the time of his analysis there were only Late Neolithic and Early Bronze Age sites in Wessex to compare this assemblage to, and as this is not the case today, Winham made an insightful conclusion regarding the origin of this flint assemblage and cannot be blamed for his judgment on the 'throw away nature of the tools' (Winham 1985, 86). As such the Winham/Fasham analysis, along with the comparison to Winnal Down of the Micheldever Wood assemblage, set out some the founding guidelines for future flint analysis of Iron Age sites and certainly aided in the formation of the research questions tackled in the current exercise.

Sequencing

Table 5-6 shows the flint material recovered by each phase and it is clear that the material spans all phases except phase 1 representing Neolithic activity. All material from the Neolithic 'interrupted ring-ditch' was discussed in a separate report (Fasham 1985, 9). From this initial analysis Fasham suggested that these figures either show an enormous amount of residuality, or the flint continued to be used until the Iron Age (Winham 1985, 84), and from his report he seems to favour the latter. Table 5-6 tells us much more than this however, even before a further detailed breakdown is carried out. There are distinct phases where the flint is utilised and those where it is virtually absent in comparison. Phases 3 and 4 represent distinct high levels of activity, with a drop in phase 5 and then a large increase again in phase 6. Does this mean that there was a virtual break in activity in the Late Iron Age until the Roman period where flint was still used to a reasonable degree, or that the Roman phase created a great deal of disturbance with a high level of residuality? A detailed breakdown of flint artefact morphology could perhaps shed light upon the latter possibility, but at present this information is limited to phase 3 enclosure 5. Furthermore, phase 2 also has a very low number of flint artefacts allocated to it and it would generally be expected that a Late Bronze Age phase would yield more flint artefacts than the Iron Age. The lack of flints in the Late Bronze Age could be due to the fact that the site was not intensively occupied in this period, yet the evidence of the four post built structures would suggest that this is not the case and thus would warrant a higher number of expected flint artefacts. It is possible then that any unrecovered material from the Late Bronze Age was either deposited away from the excavated area, or flint was not utilised in large quantities at this site. Hawke's suggestion based on the pottery analysis may, however, shed some light here. Hawkes suggests that the adjacent site of Easton Down (dated to $8^{th}/7^{th}$ century BC) may have been the continuing area of activity for the vicinity, as pottery from phase 2 at Winnal Down pre-dates material from Easton Down, and phase 3 pottery begins again after Easton Down's dates (Hawkes 1985, 67).

To consider this point further, we can question the period(s) of use and whether or not any of these phases represent residuality from one or more earlier phases from the flint numbers alone. It is argued here that the question of residuality can be largely ruled out in support of Winham's original analysis and instincts for four reasons, although it is accepted that some level of residuality will inevitably occur on such a multi phased site. First, if all of the material presented in the 1985 report is residual from the phase 1/Neolithic material, why do we not see higher levels of material present in phase 2, which spans both the Middle and Late Bronze Age? If this was residual material from phase 1, we would surely expect to see a decrease in numbers, away from the period of origin, with sometimes a greater increase in topsoil levels due to breakage through tillage. This clearly does not happen, as is seen by the number of flints present in phase 2; an expected period of utilisation. The question of what happened to any flint that may or may not have been present in this phase is outlined above. Second, the gap in numbers presented for phase 5, despite its limited activity, followed by an increase in phase 6 that almost matches earlier phases, seems to indicate that the numbers of material recovered are comparable to the amount of other activity and material culture recovered. So it would appear that the sparsely represented flint material from phases 2 and 5, represents nothing more than the amount of activity actually taking place at those times, rather than any increase in disturbance of earlier features. Third, from the basic breakdown of material as seen in table 5-6 it is clear that the only really diagnostic piece that unambiguously represents any earlier residuality is the hand axe fragment in phase 3. If any of this material was residual from phase 1 or even the Early Bronze Age (for which there is no clear evidence), then where are the pieces which represent this? Fourth, core numbers do not decrease over time, and even in the Roman period they remain comparatively high, as do the fragments and nodules. This indicates that core material was present for producing flakes, and remains in proportion to the flake and waste material flint throughout phases 3, 4, and 6. In addition, the overall pattern of types of flint represented is remarkably similar, indicating a stable pattern of use in each occupied period. This pattern is mirrored, but in opposition, in phases 2 and 5 where only one and two cores respectively were recovered, yet match the amount of other flint material in these phases.

These four points, along with Winham's observations concerning the technological and morphological attributes of the flints, along with associated material, surely suggest that the material from phase 3 onwards is not residual, and represents a different set of produced, utilised and deposited material from that of phase 1. The NP (not phased) material is also interesting with relevance to point four above, as the level of cores in relation to the other material (with exception of an increase in fragments and nodules, which is not unusual), has a balanced ratio in comparison to the other phases. As such it is suggested that it belongs to one or all of the three main phases here and is not from phase 1.

Associated material & dating (table 5-8)

Pottery

A total of 15,343 sherds of pottery was recovered from the Winnal Down excavations. As with Potterne a vast number, but comparable to the level of activity represented by features for each phase. As previously seen with the flint material, the number of sherds recovered from each phase appears to increase and decrease sharply, indicating the level of activity taking place (fig. 5-20). To support the utilisation of flint material, the pottery levels, although expectedly much higher, demonstrably support observed patterns of flint use.

Two distinct episodes can be seen in phase 2. The Middle Bronze Age is represented by 69 sherds of local Deverel-Rimbury ware and 152 sherds from one bucket urn. The two types of fabric were recovered from two distinct areas; the Deverel-Rimbury ware from the phase 3 enclosure ditch which is presumed to be residual, whereas the bucket urn came from the Bronze Age feature 4786 (Fasham 1985, 126; Hawkes 1985, 61). The Late Bronze Age is represented by 99 sherds of post Deverel-Rimbury ware, dating between 11th and 9th centuries BC (*ibid.* 61, 67).

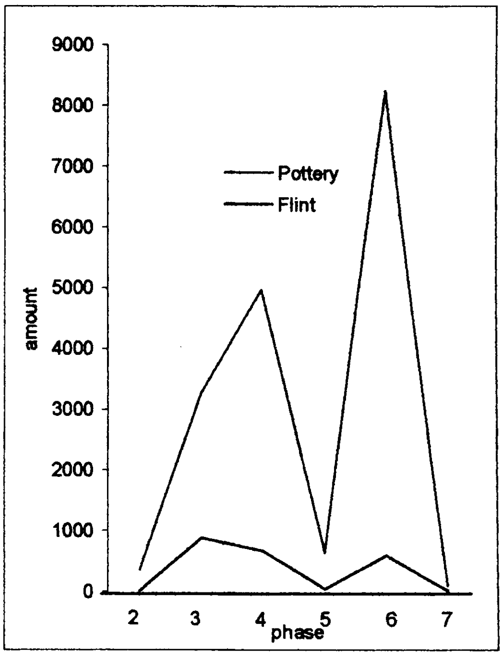

Figure 5-20: Flint and pottery numbers from Winnal Down, Hampshire.

The phase 3 pottery, based primarily on the haematite-coated sherds that lie stratigraphically below a C^{14} date of 2560±80 BP (HAR 2653) and the cordoned bowls, indicate that this phase is largely dated to the 5th century BC (Hawkes 1985, 67). This places the activity for phase 3 at Winnal Down very near to the end of the Early Iron Age. Based on an overall view of material culture from the site, Fasham, however, states that the enclosure at Winnal Down was probably constructed by the middle of the 7th century (1985, 142). This does not affect the pottery dates for phase 3, but instead highlights the probable continuous occupation of the site throughout the Early Iron Age. Fasham further states (1985, 142) that there is no evidence to suggest any continuity between the Late Bronze Age settlement and the Early Iron Age. Hawkes illustrates further that although there is a restricted range of fabrics from phase 4, there is in fact a substantial amount of overlap regarding form and fabric between phases 3 and 4. Together with this, on the basis of the lack of secure stratification for phase 4 and the introduction of new ceramic types later, it was suggested by Hawkes that although there is no clear distinction between phases 3 and 4, the latter terminates around the end of the second and beginning of the 1st centuries BC (*ibid.* 62, 69).

Copper alloy and iron

Figure 5-21 shows the total amount of bronze and iron material along with evidence of metal working debris for each phase and then a comparison of this against the flint artefacts recorded. As stated with the Potterne Deposit, it is generally assumed that many metal artefacts were recycled until they became more widespread and less expensive, the comparison between the flint and metal totals show that flint may still have been the primary raw material for tools and implements. Given Fasham's description of an extended family group subsisting on an agrarian and pastoral existence (Fasham 1985, 142), this is perhaps expected. The differences between phases 3 and 4 highlight this well and may show us when this indeed began to change. Phase 3 has the highest amount of flint overall with a slight decrease into phase 4 (fig. 5-21), corresponding to a 200% increase in iron material and the first evidence of bronze.

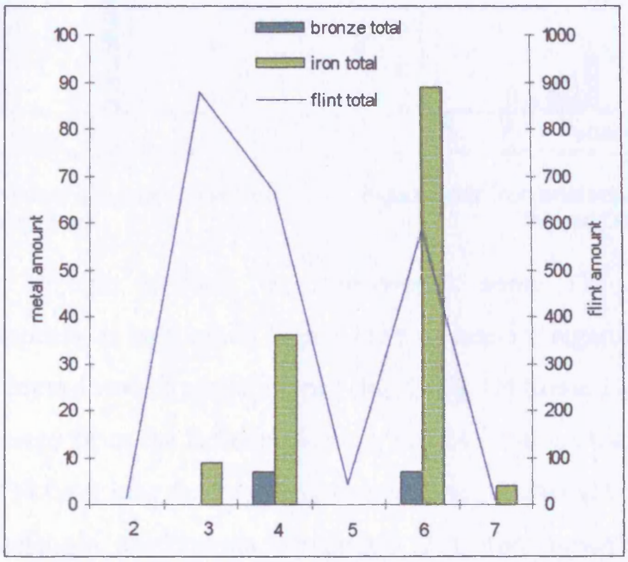

Figure 5-21: Comparison of flint and metal totals from Winnal Down.

Given the nature of the flint material present in phase 6 (Roman) however, as described above (see Sequencing), if we accept that flint utilisation was still taking place, then the balance between flint and metal appears to have levelled to a marked degree. A breakdown of the bronze and iron artefacts may, however, change this general view of an overall increase in metal usage over time.

Only 18 bronze objects were recovered from the excavations (including unstratified material) as summarised in figure 5-22. None of these came from phase 3 deposits. It appears that the raw material was used primarily for ornamental functions, as there are no tools or implements of any kind described, which may also explain its balanced levels between phases 4 and 6. Fasham makes reference to this by indicating that the absence of personal adornment in the Early Iron Age is perhaps due to the increase in population between the Early and Middle Iron Age, and possibly an increase in wealth also (Fasham 1985, 142). He suggests from the environmental evidence and textile related artefacts that wealth may have been generated by the increased surplus of grain produced, together with the production of woollen materials, beginning in the Early Iron Age, but largely in the Middle Iron Age (*ibid.*). This is supported by the marked increase in iron artefacts between phases 3 and 4 (fig. 5-21), and the increase in diversity of iron artefact types in phase 4 (fig. 5-23).

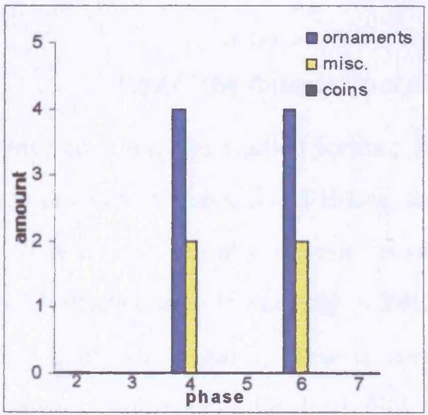

Figure 5-22: Bronze artefact types by phase from Winnal Down.

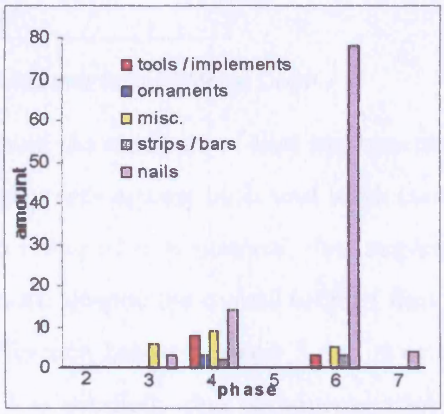

Figure 5-23: Iron artefact types by phase from Winnal Down.

A greater number of iron artefacts were recovered, some 177 in total (including unstratified). This appears to be a much higher level of activity regarding metal utilisation until we look at the breakdown of artefact types (fig. 5-23). Of these, 124 items are nails, 78 of which were recovered from the Roman phase 6, and 24 from unstratified levels. As nails are less inclined to fall back into the recycling process their higher ratio is not unexpected. The low numbers of tools, implements, ornaments and other miscellaneous objects, are however, remarkably low, particularly for the Roman period, given the high levels of other material culture and the acceptance that metals are less valuable and more widespread. Evidence for metal working (fig. 5-23) does not appear to increase over time either. Fasham does indeed pick up on both of these points, but explains it solely as a result of the site never becoming high status and metal working never becoming an important activity to the population at Winnal Down, assuming instead that finished metal items were traded onto the site (Fasham 1985, 142-3). Is it possible that the metal working evidence is low throughout the phases as it may only represent the recycling of purchased material? Again this would support the suggestion that there was never a high amount of metal artefacts on the site in any one phase, leaving flint as the primary raw material for tools and implements, although we cannot ignore the very small amount of iron strips/bars present in phases 4 and 6.

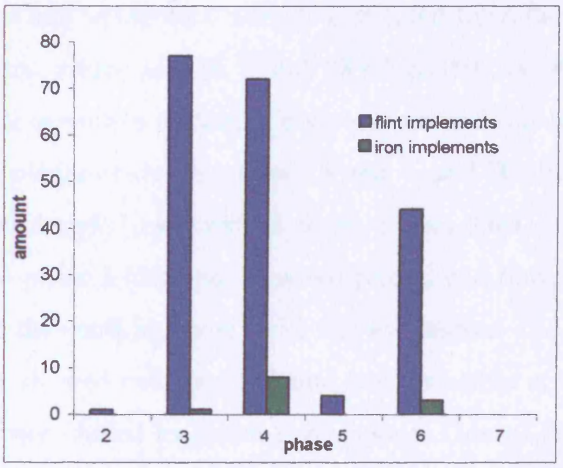

Figure 5-24: Comparison of flint and iron implements from Winnal Down.

This inference may be studied further. If we compare the numbers of flint implements that include retouched and utilised flakes, scrapers and points against tools and implements of iron, then we can see that despite an assumed recycling of iron material, flint implements outweigh those made of iron (fig. 5-24). Furthermore, despite the overall total of flint from phase 3 being the highest, there is very little difference between phase 3 and 4 in terms implements. The higher level of flint in phase 3 is primarily due to approximately 200 unmodified flakes, which are difficult to explain given the fairly balanced levels of all the other material types present (see table 5-6). Some of these could perhaps have also been utilised but suffering little signs of wear and thus unidentified as such. The only implements showing a marked decrease in numbers are scrapers, where the numbers drop from eight in phase 3 to one in phase 4, but which increase again in phase 6 to five, whereas borers and points increase in phase 4 from one to four. This can only be explained by a change in tool requirement due to an activity change, which may also explain the increase in numbers of iron tools in phase 4. The descriptions given for the iron pieces do however indicate that the flint and iron implements may have had very different functional uses. The only iron tools and implements represented are nine blades, one plough bar, an ard point, a key, a timber dog and two goads (Winham 1985a, 46); blades being the only iron tool present that has a similar function to an unmodified or modified sharp flint edge. Levels of flint tools drop in phase 6 primarily due to a decrease in retouched and utilised flakes, yet this is also in line with a decrease in iron implements, so can we really argue that flint utilisation at Winnal Down decreases over time if its ratio remains balanced with other contemporary copper alloy and iron artefacts? Furthermore, the amount of unmodified flakes in phase 6, many of which could be potential implements, is not far off in number to those in phase 4.

Worked bone

Very little worked bone and antler were actually recovered from the Winnal Down site, in total only 26 pieces (ten antler and 16 bone) (Winham 1985b, 96); a small amount in comparison to the large quantities of animal bone recovered from each major phase (table 5-8). Twenty of these pieces belong to phases 3 and 4, and Winham suggests that bone working appears to be largely restricted to these phases (*ibid.*). There is also a slight preference for antler in phase 3 (four out of seven pieces) and bone in phase 4 (ten out of thirteen pieces) though the small numbers make this speculative.

All of the antler pieces showed evidence of being sawn, whether at the base or to remove tines, many had also been drilled to create perforations. One of these pieces appears to have been shaped into a stylised figure; whereas other pieces had been used to create a ring, possible pendant, a handle and a possible work surface/hammer (Winham 1985b, 93, 95). In contrast, bone seems to have been used to make other functional or personal items. Needles and points appear to be the most identifiable items, along with one comb. The remaining nine items could not be identified as particular objects, but did show evidence of either polishing sawing, drilling or cut marks (Winham 1985b, 96).

Despite worked bone being primarily restricted to phases 3 and 4, Winham also identified that phase 3 produced more personalised items than phase 4 (Winham 1985b, 96). If we compare these with other personal adornments made from bronze and iron, we have already seen that there were none recovered from phase 3: the phase in which the largest quantity of flint was recovered, despite phase 4 being the highest for all other artefact types. Bronze ornaments are restricted to phases 4 and 6, and iron ornaments are restricted to phase 4 only.

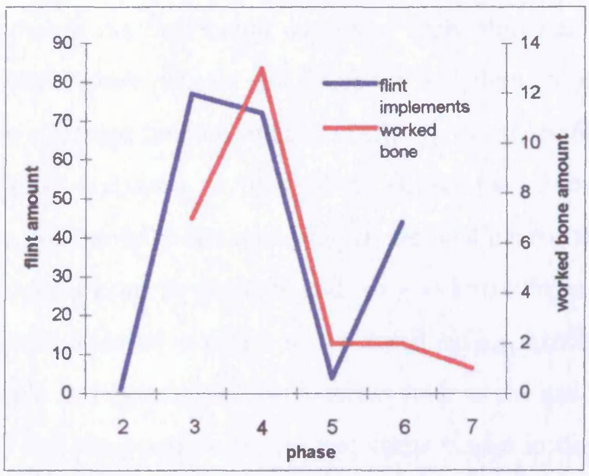

Figure 5-25: Flint implements and worked bone recovered from Winnal Down.

Can this be in any way linked to the type and amount of flint pieces recovered from each phase? Figure 5-25 shows flint implements and worked bone recovered from each period; they have been plotted as a dual axes chart to best show the converging patterns between the two sets of figures. It is clear that there is a comparatively similar ratio level between the two artefact types in phases 3 and 4, followed by a dramatic decrease in phase 5, expected due to a break in activity. Phase 6, however, shows that where flint increases again, and follows the general pattern of artefact numbers, worked bone does not. This suggests that where flint may have been utilised partly as a bone working tool in the Early-Middle Iron Age, this functional role had ceased by the Roman period.

This can be supported further by an additional observation. If we look back to the type of flint implements recovered by phase (table 5-6), we can see that the numbers of retouched and utilised flakes tend to remain on a similar level, yet the diagnostic tools numbers are variable. This was briefly touched on above as resulting from a possible change of activity requiring a different function (see end of copper alloy and iron). The large decrease in scrapers from eight to one between phases 3 and 4 and the increase of borer/points suggests a different functional tool was required beyond the retouched and utilised flakes. Could it be in this instance that scrapers were primarily used for antler working and that borer/points were primarily used for bone working, such as making needle eyes and the punch marks found on a worked cow tibia and radius? This suggests that in phase 3 flints may have been used partly to make personal items from animal bone, which was then replaced in later phases by adornments made from metals. The change in diagnostic tools can then be explained by a 'new' requirement for flint implements to make other tools such as needles.

Other activities

As seen there is very little, if any, bone working taking place in the Roman period. As a result we might ask what is the flint being used for? Here flint may appear to take on *or* exist solely to fulfil a much more prosaic and domestic role than for making personal items and adornments. If we compare flint numbers to other types of artefacts a pattern emerges that relates to agricultural practices, as figure 5-26 shows flint numbers fall in the same pattern as quernstones and animal bone including phase 6. We have already established that flint is not used for working bone in phase 6, and we also know from studies of the copper alloy and iron that metal increases in phase 6. As stated earlier, however, we saw that iron was used mainly for nails and agricultural implements such as the ard. Given the arguments for recycling of metals and the possible absence of some blades in the previous section, we still only have six blades from the Middle Iron Age and one from the Roman. It is tentatively suggested here therefore, that unlike at Potterne where it was suggested the flint may have been employed in butchery practice in the Late Bronze/Early Iron Age (between zones 14-10), flint *may* have played a primary role in butchery processes throughout the Iron Age at Winnal Down, but principally so by the Roman period. This is based on figure 5-26 and the stable levels of retouched and utilised flint flakes throughout the phases. Further support of this can be seen from the butchery experiments presented in Appendix 6. Figure 26 also shows that despite the discussed drop in flints between phases 3 and 4, flint does generally converge with patterns of other material culture such as those relating to weaving.

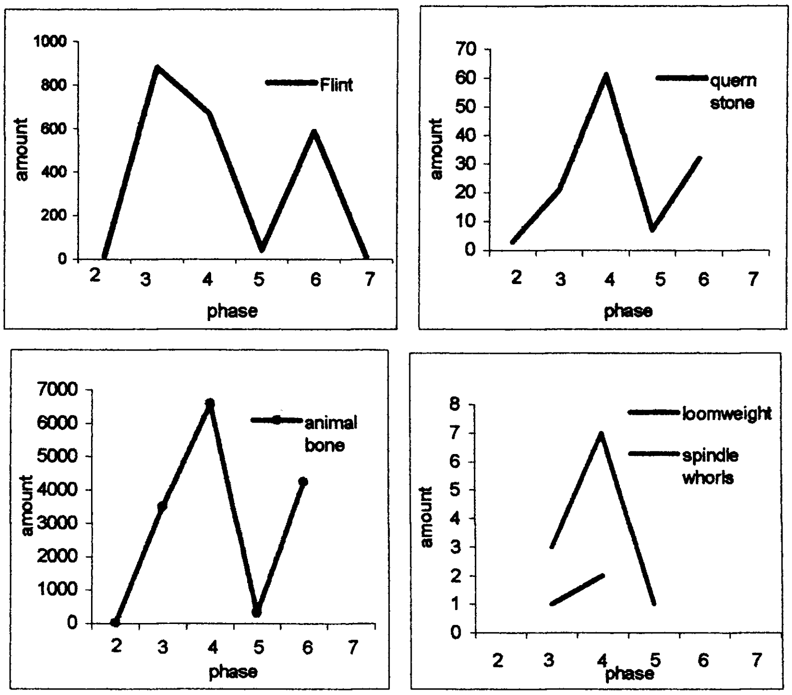

Figure 5-26: Flint, quernstones, animal bone and weaving artefact numbers recovered from Winnal Down.

Another option to consider at Winnal Down is the possible role played by flint in salt production. Is it possible that flint implements, perhaps scrapers may have been utilised to remove salt from the evaporation vessels? It is an interesting notion to explore given the flints resistance to corrosion against metal tools. The Briquetage analysis suggests that the sherds come mainly from two vessels, one in phase 4 and one in phase 6. Not a large number, but if scrapers were used for the task of removing salt from the vessels then the number of scrapers need not be high considering the large quantities of flint recovered. However, although there is an increase in scrapers in phase 6 to match the briquetage, the highest number was in phase 3 and not 4, yet can this rule out the possibility altogether? From the experiment detailed in Appendix 6 we know that scrapers were not useful for butchery, instead sharp secondary unmodified flints were preferred. From the patterns over all, the data put forward for Winnal Down may suggest that that the few scrapers could have been utilised in the removal of salt from a vessel, hide working etc and that the remaining artefacts were utilised in butchery tasks, amongst other domestic duties.

Winnal Down summary

The flint technology and morphology described by Winham for the sampled assemblage appears to fall neatly within the criteria expected for Iron Age flint assemblages and more of the patterns between sites are discussed in Chapter 8. As for what the flint was used for is interesting as it differs marginally to that of Potterne. Similarities start with the evidence for diagnostic implements between flint, iron and copper alloy, in that flint outweighs the latter two substantially. However, given the recycling arguments it does appear that again that copper alloy was primarily used for ornamental purposes and iron for more agricultural tasks and building. The suggestion that between phases 3 and 4 the occupants became more wealthy, perhaps from increased grain production, supported by the increase of quernstones (fig. 5-26), may explain the jump in metal artefacts and slight decrease in flint on economic grounds such as the possibility that iron blades could be purchased.

It does not appear at Winnal Down that flint played a large role in working animal bone, yet there is some correlation. The phase association for occurrence of flint and animal bone does appear to show a close correlation supporting a possible role of flint tools in the activity of animal butchery, but at this stage the suggestion is tentative. Another possibility is its involvement in salt removal from vessels but the evidence for this is sparse, or as part of a tool kit involved in textile production such as hide working, thread cutting or yarn production. On the whole it seems clear that flint was utilised across a number of domestic activities throughout the occupation of the Winnal Down site, even into the Roman period. This is an important conclusion in itself as flint utilisation at other sites does often appear to have decreased considerably by this time.

Phase	Flint	Pottery	Bronze				Speculum	Iron						metal working debris					Lead
			ornaments	misc.	coins	*Bronze total*	collar	tools / implements	ornaments	misc.	strips / bars	nails	*iron total*	crucible / moulds	hearth slag / slag	forged bloomery iron	over fired clay	*metal working debris total*	
2	14	168				*0*							*0*					*0*	
3	879	2384				*0*		1		5		3	*9*	1	3			*4*	
4	667	4297	4	2	1	*7*	1	8	3	9	2	14	*36*	1	5	1	5	*12*	
5	44	589				*0*							*0*				1	*1*	
6	587	7646	4	2	1	*7*		3		5	3	78	*89*	2	4		1	*7*	1
7	10	87				*0*						4	*4*					*0*	
NP	615			3	1	*4*		2		6	6	25	*39*		1		1	*2*	
total	2816	15171	8	7	3	*18*	1	14	3	25	11	124	*177*	4	13	1	8	*26*	1

Phase	Flint	stone										shale	worked bone									animal bone
		quern stone	loomweight	spindle whorls	worked'	beads	mould	decorated weights	whetstone	grain rubber	roofing slate	bracelet	sawn, polished	decorated	ring	pendant	comb	point	gouge	needle	*total worked bone*	
2	14	3																				21
3	879	21	1	3	1	3							2	1	1	1		1	1		*7*	3512
4	667	61	2	7	3		2	1	1			1	9				2			2	*13*	6572
5	44	7		1	1								1							1	*2*	313
6	587	32				1				1	1		2								*2*	4242
7	10												1								*1*	
NP	615	16	2	1		1							1								*1*	
total	2816	140	5	12	5	5	2	1	1	1	1	1	16	1	1	1	2	1	1	3	*26*	14660

Table 5-8: A breakdown of all prime associated artefacts from Winnal Down. Hampshire.

Meare Village East, Somerset

General

Meare Village East (MVE) is the latest of the published studies presented. It dates to the Romano-British period with a chronological sequence that spans the later 1st century BC to the 1st century AD, starting around two centuries later than its sister site of Meare Village West (MVW). The site of MVE is complicated, yet interesting, and as such a different approach has been taken to the study of this site from that of Potterne and Winnal Down due to the very different nature of the written archaeological record. There is a distinct lack of any significant flint analysis, but instead a remarkable catalogue of artefacts and context location. Given the turbulent history of the site, the report written by Coles (1987) represents a significant contribution to the study of any research linked with MVE. Despite the general acceptance of Iron Age flint technology taking place at MVE, MVW and Glastonbury Lake Village (GLV) by the various excavators over the years, there is still a widely held view that the flint assemblages found at these sites represent earlier Neolithic and Bronze Age material. They suggest that the flints piggybacked their way onto the site when clay was brought in to create floors for the individual mounds. One such argument presented by Saville (1981) argues against Smith's (1981) case for Iron Age flint assemblages at MVW (see Chapter 1, 2). Therefore, the primary aim here in studying the flint assemblage from MVE, is to put such arguments to rest by attempting to conclusively associate flint artefacts with contemporary Iron Age artefacts. As in the Potterne and Winnal Down studies, analysis of the flint assemblages and possible associations with task related material culture will also be made within the allowances of the data.

In order to understand some of the weaknesses in the data, a brief look at the problematic history of the site is offered. The site was excavated over 55 years by a variety of excavators with long gaps between them. Arthur Bulleid and Harold St. George Gray began excavations in 1932 after their successful excavations at GLV and MVW, and work continued until 1956 (except 1938-1948), when the site was abandoned due the retirement of Bulleid some years previous, but primarily a lack of funds and volunteers (Coles 1987, 6, 11-12). Sadly, due to the vast collection of data by Bulleid and St. George Gray from their many excavations over the years, and their age and subsequent deaths, the excavators never published the excavations from MVE, with the exception of yearly interim reports in the *Proc. Somerset Archaeol. & Nat. History Soc.* (Coles 1987, 6-8).

In 1968 Avery published an interim in the *PSANHS* after a two-year investigation and intended to publish Bulleid and Gray's excavations of both MVE and MVW in full, but sadly never completed the task (Coles 1987, 9). Fortunately, the Meare Villages were in part re-examined by the Somerset Levels Project (SLP) in the late 1970s for their existing condition and in the early 1980s to attempt to understand the relationship between the East and West Villages. The final aim of the SLP for MVE was to pull together Bulleid and Gray's excavation records (which covered 30% of the site), Avery's and the SLP's small investigations, along with all artefacts recovered over the 55 years and publish the excavations (*ibid.*). It is this 1987 report that the analysis presented here is based upon with reference to other related material as and when necessary.

Table 5-9: Excavated mounds showing whether fully (bold) or part excavated and over how many seasons (derived from Coles 1987, Chapter 2).

Mound 1	**1932-33**	Mound 19	**In part 1937, totally 1982**
Mound 2	Eastern edge 1933	Mound 20	**1938, 1950, 1951, 1982**
Mound 3	**1933**	Mound 21	**1935, 36 & 38**
Mound 4	Eastern half 1933	Mound 22 & 22A	**1938**
Mound 5	Southern edge 1933	Mound 23	Trial trench 1951
Mound 10	**1934**	Mound 24	**1936-38**
Mound 11	In part 1952	Mound 25	**1950**
Cutting A (11)	In part 1934	Mound 27	**1951-52**
Mound 12	Western edge 1934	Mound 28	**1948, 1952-53**
Mound 13	**1953-54**	Mound 29	Trial trench 1951
Mound 14	**1955-56**	Mound 30	**1948-49**
Mound 15	In part 1934, merging into 15A to E	Mound 32	Trial trench 1949
Mound 15A	**1935-36**	Mound 34	In part 1966
Mound 15B	**1935-36**	Mound 35	**1966**
Mound 15C	**1936**	Mound 36	**1966**
Mound 16	**1934-35**	Mound 38	In part 1966
Mound 16A	**1937 as part of 16**	Mound 47	**1949-50**
Mound 17	**1937**	Mound 51	**1934, 1937, 1953-54**
Mound 18	**1935-36**		

With reference to data presented here, certain aspects of Bulleid and Gray's recording methods are to be noted. All visible mounds were marked by a central picket (c. p.) from which all features and small finds were plotted. Small finds were recorded horizontally by compass points in feet away from the c. p., but the vertical stratigraphy was simplified to feature type such as 'Floor 1' or 'in black earth under clay' (Coles 1987, 10, 50). This recording method has proved to be of some success given the analyses possible here. However, there are a few necessary points to be made. Coles (1987, 10) discovered from Bulleid and Gray's records that of 26 mounds out of 50, only on very few occasions was a whole mound excavated in one season, and 6 mounds were sampled and then abandoned (table 5-9). In addition, they excavated primarily mounds over one foot high and only one in 18 under one foot was examined. Furthermore, the mounds were generally excavated in 'raps' (narrow trenches), which were back filled before cutting the next and often chased around features such as hearths (*ibid.*), whereas an open excavation approach may have been the better choice taking one layer at a time. Coles also notes the problems with this method stating, 'A layer seen in one rap may not have been seen, or recorded, in the next rap, and if not, there is no certainty about its relationship to any other finds made in that rap.' (Coles 1987, 11).

To overcome this last point, the data offered here is presented in two modes. First, data has been analysed using Bulleid and Gray's simplified stratigraphy (table 5-10) of eight contexts (Coles 1987, 43-table 2.2) for a basic vertical assessment across all mounds excavated. This in itself presents problems. Not all of the black earth on the site was covered with clay (the Mounds) and as such artefacts may have been dropped in areas on the black earth at the same time as on a clay spread; a point which Coles refers to stating that *only* items on black earth which are covered by clay have a 'limited stratigraphy' due to the point at which they may have been covered (Coles 1987, 243). To attempt to overcome this, the second method plots data horizontally for each of the separate mounds using the abstract mounds devised here for visualising artefacts spatially. Of these, a sample of the well-recorded mounds has then been stretched vertically into each different recorded context (*i.e.* separate floors), attempting to establish any horizontal spatial patterns of use over time within each mound. Employing both methods should aid in highlighting any unavoidable discrepancies with the excavators observations and recordings.

Table 5-10: Bulleid and Gray's simplified stratigraphy for MVE (Coles 1987, 43-table 2.2).

Top	
8	Flood soil, alluvium, top soil, 'dark earth'
7	Lias rubble, 'Roman' stone, down-and outwash clays around rubble
6	Freshwater shells, at base of 8, and over 5 and/or 4
5	Hearths, 'fire-ash' spreads, charcoal
4	Clay floors and spreads, forming mounded areas, with hearths within or upon
3	Black earth, 'hard peat', the occupied and reworked top of 1
2	'Foundation' or substructure' of wood
1	Peat (natural) and stumps
Base	
VUS	Vertically unstratified

The Flints

There is very little that can said of the flints from MVE in terms of technical and morphological attributes based on the published study. It is hoped that a future primary analysis of the MVE material will be possible to compare results against those presented in this research. However, the information put forward by Coles in the 1987 report of Bulleid and Gray's excavations of MVE, in conjunction with data from MVW and GLV reports for the flint assemblages, does allow for some comparisons to be made in terms of the criteria used here for identifying Iron Age flint assemblages.

Bulleid, Gray (1966, 361) and Coles all argued that the majority of the flints recovered from the Meare villages are contemporary with the Iron Age (1987, 78) – a view which Coles shared with his colleagues working on the Somerset Levels Project (notably Smith's report of flint from MVW 1979). Coles also claimed that any analysis of the flint recovered from MVE was pointless due to Bulleid only collecting and numbering 70 pieces (*ibid.*). It is well documented and accepted that in many early excavations only the obvious and diagnostic artefacts were generally collected. Coles (1987, 13) reports from the early excavation logs that particularly 'valuable' items were paid for on recovery, with certain flint items among them; scrapers 1*d* (£0.005), barb and tanged arrowhead 6*d* (£0.03p). It is clear from this record alone that such an obvious item like a scraper was one of the lowest paid and that anything less obvious would probably not have been kept or recorded properly. Even more problematic is that distinctly diagnostic pieces like the Neolithic and Bronze Age arrowheads were prized more highly, equal to fibuli, which could distort the assemblage further. It is not surprising that analysts have suggested that flint material from the lake villages is earlier residual material, and having looked briefly at the GLV material several years ago, there is indeed a predominance of earlier scrapers and a few other implements in the assemblage.

One suggestion against these earlier diagnostic pieces being totally residual is that these items have found a new lease of life as 'treasures': an example being a Bronze Age barbed and tanged arrowhead laying directly on top of the flagstones of an Iron Age round house at Bollihope Common, Co Durham (Young and Webster *pers. comm.*). Another explanation is that certain items were spotted in the surrounding landscape and collected for reuse, a point that Coles also considers (Coles 1987, 78). It is suggested in Chapter 6 that cortex was often left remaining on many pieces for comfort of the users and to limit the amount of work needed in making each piece functional. The same could be suggested here; if certain implements still in use in the Iron Age could be found in the landscape why not use them? It would be interesting to examine all Lake Village assemblages for evidence of reuse and later re-working through the presence of variation in recortication and patination as noted when observing some of the collection previously.

These suggestions and observations aside, some details can be presented based on Coles observations. Coles notes that despite Bulleid and Gray only collecting and numbering 70 flints and the 1982 excavations of Mound 19 a further 53, that the site would probably have produced several thousand if fully and carefully excavated, yet, he comments only shortly afterwards that there are a further 435 un-numbered pieces from the site (Coles 1987, 78). This number alone would have been ample to make a decent overall view of the assemblage's technological and morphological attributes. Notable comparative examples to support Coles' view of a much larger assemblage are MVW which produced 185 pieces and

1185 waste, and GLV which was similar to MVE in that 131 pieces and 389 waste were recovered (Coles 1987, 78).

Technological and morphological attributes

The analysis made on the published and catalogue data from the 1987 report gives a minimum total of 548 flints (table 5-11), whereas Coles' totals suggest 558. This discrepancy may be owing to the number of mounds where additional flints of less than ten were merely listed as extra flints with the actual number not given. Coles describes the assemblage as an 'undistinguished lot' with short wide flakes generally retouched into scrapers and knives (Coles 1987, 78), which at first glance matches the basic criteria set out for Iron Age assemblages (Chapter 4).

In breaking down the artefact types into basic recognisable pieces (fig. 5-27), based on the description in the catalogue and by making judgements from observing the given illustrations (Coles 1987, fig 3.17, 3.18), a more detailed description of the assemblage can be presented. This is by no means a final version, however, as a new primary analysis is required for all of the lake village materials based on the approaches delineated in the previous chapters.

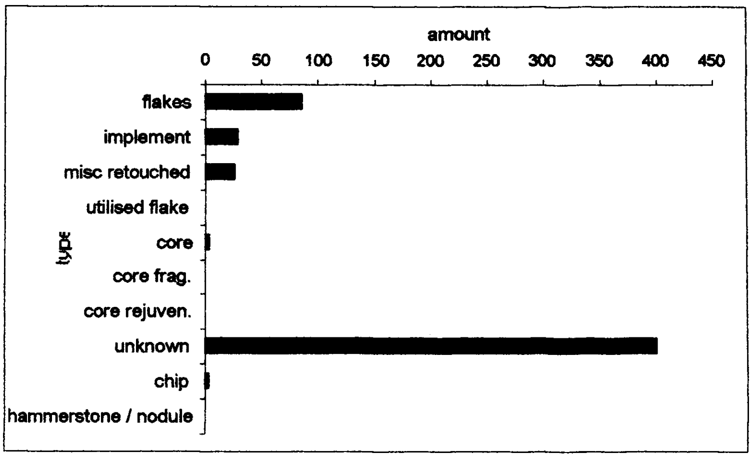

Figure 5-27: Basic breakdown of flints from MVE.

One alarming feature is that only three cores (0.5%) were recorded from the excavated mounds, quite a low number but comparable to MVW where 17 (1.1%) were detailed out of nearly 1500 pieces (Gray 1966, 360). One suggestion presents itself in that they have not been found due to the incomplete excavation of several mounds at MVE. It could be that some of the mounds may represent the production of the flint material utilised over the site. Some of the shallower mounds that were not excavated due to their height may represent outdoor activity areas where flint knapping would be best suited. Coles suggests that possible outdoor sites are some of the lowest heights recorded (Coles 1987, 238 and

Chapter 2 descriptions of mounds), and these do generally produce a higher number of flints.

The type of retouched flints is also interesting with regards to diagnostic and miscellaneous retouched pieces in the assemblage (fig. 5-28). As expected, the number of retouched pieces is low (10%) and restricted primarily to scrapers and miscellaneous tools along with points and functional cutting implements. The 15 scrapers appear to represent the general forms including discoidal, end and side and end retouch. Of these, two are possible thumbnail scrapers given their description and illustration. Although generally these are considered earlier forms they cannot be ruled out as contemporary.

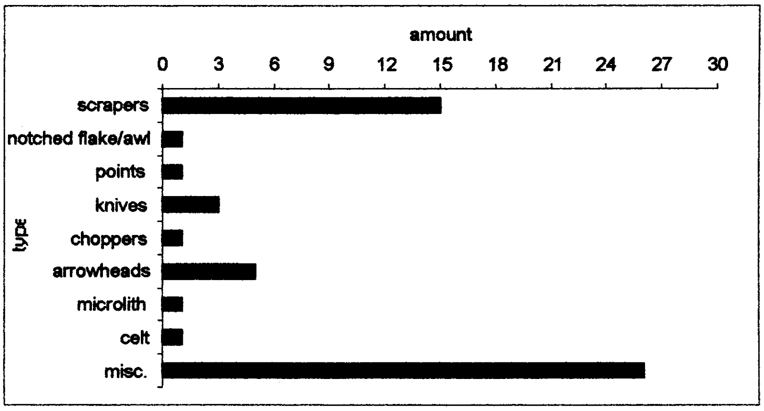

Figure 5-28: Breakdown of retouched pieces from the MVE assemblage.

The presence of five arrowheads and one microlith clearly represent earlier activity in the surrounding area and were introduced by some means onto the site. One further interesting piece is a recorticated flake from Mound 20 recovered from just below the clay. This sole flake represents the use of much earlier material in the area evidenced by fresh scars from later retouching and supports arguments for the deliberate collection and reuse of earlier material.

Sequencing

In table 5-11 the flint is shown by each excavated mound and table 5-12 by Bulleid and Gray's stratigraphy for the MVE site. The description by mound is useful in attempting to discover which may have been linked with flint use and the various activities within each mound. In studying the flint alone by mound, however, is of very little use for two reasons. First, flint was not recorded sufficiently, as discussed above, to make comparisons between mounds and requires a thorough examination of all material associated with it; an aim that is examined further below. Second, the mounds were excavated to different degrees (see table 5-9) and as such the levels of material retrieved from each is already biased and, in conjunction with the first point, exaggerated further.

From table 5-11 we can see that only four (shaded) of the 11 mounds partially excavated listed in table 5-9 have records for flint material. This may explain why Mound 34 has no flint recorded when *all* other mounds have at least some flint present. Mounds 24 and 51 did produce flint but no quantities were given in the report to add to table 5-11. It is assumed therefore that the number was below ten. Mound 15C had no flints present but it is part of the Mound 15 complex. As a result, one positive suggestion can be put forward in that flint was represented all over the site in varying quantities that are linked primarily to the amount of excavation that had taken place and recording/retrieval methods of each excavator.

Table 5-11: Basic flint description shown by excavated mounds based on the MVE catalogue (Coles 1987) and observation of illustrations provided with the catalogue.

Mound	Flint										
	Flakes	Implement	Misc retouched	Utilised flake	Core	Core frag.	Core rejuven.	Unknown	Chip	Hammerstone / nodule	Total
1	21	2	1								24
3			1								1
4		2	1					18	1		22
5		1	1								2
10		4						14			18
13					1			14		1	16
14		2	1				1	35			39
15	1							15			16
16			1		1			12			14
17			1		1			25			27
18	1		2					11			14
19	52	1						40			93
20	1		1								2
21	2	3						16			21
22		2	3					11	1	1	18
24											
25		1						52			53
27		4	3					17	1		25
28	4	2	4					62			72
30		1	3			1		10			15
34											
35/36	3	1									4
47		1	1					32			34
51											
15A			1								1
15B		1	1					15			17
15C											
Total	85	28	26	0	3	1	1	399	3	2	548

Table 5-12: Basic flint description shown by Bulleid and Gray's stratigraphy for the MVE site.

Stratigraphic layer	Flint										
	Flakes	Implement	Misc retouched	Utilised flake	Core	Core frag.	Core rejuven.	Unknown	Chip	Hammerstone / nodule	Total
8	1		1						1		3
7			1								1
6											0
5	2	1						9			12
4	4	13	9					72	1		99
3	3	4	7					7			21
2					1		1				2
1											0
VUS	75	10	8		2	1		311	1	2	410
total	85	28	26	0	3	1	1	399	3	2	548

Table 5-12 indicates where the flint was deposited in accordance to the stratigraphic sequence for the site. Although further analysis is presented later to deal with the 'problematic' nature of this sequence, it is clear that the flint is not placed throughout the layers of the stratigraphy, but confined closely to the black earth and clay floors/spreads. The majority of the vertically unstratified (VUS) material is made up from the 'unknown' flint artefacts where no records have been kept and therefore, too much weight must not be placed on them to argue for residuality. Take out the unknown piece from the equation and the stratified flints far outweigh the known VUS material. Furthermore, 52 of the flakes recorded are from Mound 19 where no vertical stratigraphy is given for the flakes, a situation common for much of the recording of flakes throughout.

Of the three cores that have been found, two are VUS and one is stratified to the foundation levels, belonging to one of the earliest activity periods on the site. This incidentally dates to the latest Iron Age and is where the only identified core rejuvenation flake was found.

Only three retouched pieces were recovered from stratified sequences above the clay floors, two were miscellaneously retouched; one in the alluvium, one from the lias rubble/outwash clays and one scraper was recovered from a hearth related feature. Of the remaining secondary retouched pieces 18 were VUS (not necessarily unstratified but not recorded) and 33 came from either the black earth or clay floors. The problems distinguishing the vertical stratigraphy between these two layers largely depends on the horizontal stratigraphy. As discussed above, Coles highlights the problems in identifying when clay floors were spread and the limited stratigraphy between black earth and clay floors (Coles 1987, 243).

Of the 33 pieces 16 are undiagnostic retouched pieces, the remaining 22 consist of eight scrapers, one notched flake/awl, one awl, two knives, one chopper, two leaf-shaped arrowheads, one barb and tang arrowhead and one microlith. However, it is important to note that two of the arrowheads and the microlith were found *on* a clay floor and not *in* the clay floor and as such it is suggested that they were not brought into the site with the clay but by human agency.

Associated material & dating (table 5-13 & 5-14)

In order to establish any associations of flint with other material, tables and charts are used in conjunction with schematic representations of the mounds to highlight any useful information. The mounds have been created to visualise the horizontal spatial spread of material and then a sample have been stretched vertically (where the data allowed) into the identifiable layers. The c.p. of each abstract mound is represented by the centre point and each expanding circle as two feet from this point in any given direction. The abstract mounds allow for closer associations to be made against the tables and charts which give only a 'layer' association. Figure 5-29 represents Mound 14 which visualises the spatial deposition of material from all layers related to this mound. All other mounds not presented here can be found in the appendices (**CD** Appendix 3b). Of the total mounds six were chosen based on the value of the data and amount of flint represented – Mounds 10, 14, 21, 28 and 30 – to be stretched vertically (figures 5-30, 31, 32, 38, 39).

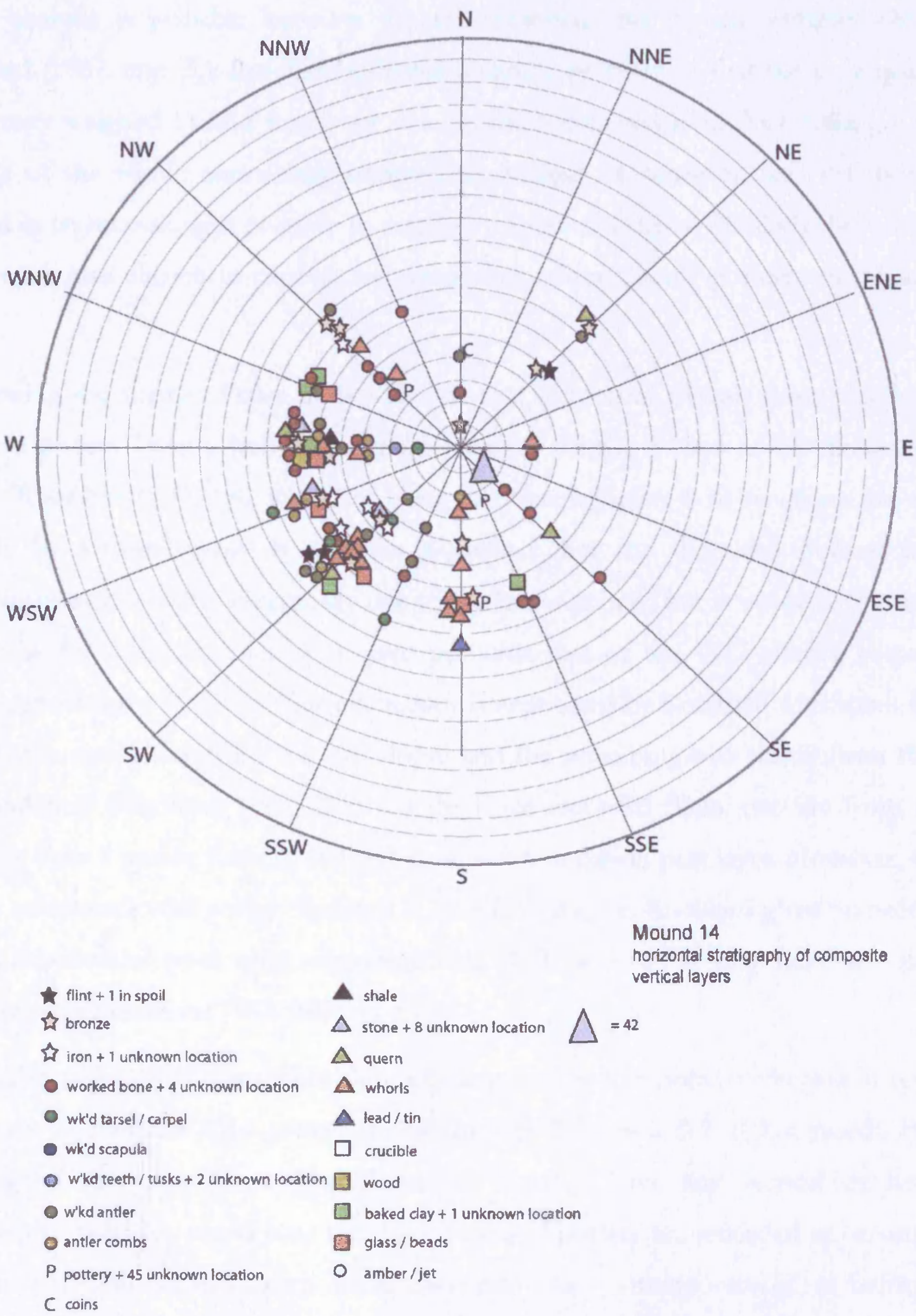

Figure 5-29: Abstract representation of Mound 14 showing the horizontal spatial patterning of all artefacts recorded from all layers.

Pottery

There is as much difficulty in dealing with the pottery data as with the flint due to the level of recording for each material. The pottery figures given in table 5-13 have been produced using the catalogue data (Coles 1987, 137-43) and additional mound information (Coles 1987, chp. 2), which only gives total figures of itemised pottery sherds recorded, such as decorated or of particular interest, plus total weight of additional bulk sherds. Therefore any overall analysis of flint to pottery ratios is meaningless given that the bulk of 'waste' flint material is also not present. The only exceptions to this are Mounds 14, 28 and 30, where analysis is possible between the two materials due to the samples chosen by Rouillard (1987, chp. 5,): Rouillard suffered a similar problem in that the bulk quantity of the pottery weighed ¾ of a tonne yet was overall poorly recorded thus making a detailed analysis of the whole assemblage impractical. Mound 14 however, was still boxed and labelled in layers making it possible to conduct a detailed analysis. Similarly, Mounds 28, 30 and 1 were also chosen to provide an assessment of the overall pottery assemblage (*ibid.* 183).

On viewing the abstract figure 5-29 it is clear that in Mound 14 only three pieces each of flint and pottery have a known recorded location despite a total of 39 flints and 1417 sherds (Rouillard 1987, 206, table 5.9) being recovered. Figure 5-30 visualises the artefacts spatially by known layers. It may be suggested that the flint and pottery have no associations horizontally or vertically due to the low numbers, but it would be unwise to do so for the following reasons. It is quite probable that of the 1417 sherds, some are in association with the 39 flints. This probability is supported by Rouillard who states that one third of the sherds are from the clay floors and the remaining two thirds from the black earth and peat (Rouillard 1987, 206). Of the three recorded flints, two are from the clay floors (*in* floor 3 and *on* floor 2) and one from the foundation peat layer. However, the only datable reference to the pottery is that it is later Iron Age, as Rouillard gives no precise date for the fabrics and types only suggesting that MVE and MVW may have at times been contemporary (Rouillard 1987, 208).

Mound 28 (fig. 5-31) shows eight flint artefacts against five pottery whereas in reality the figures are 72 flint and 2010 pottery (Rouillard 1987 201, table 5.5) (19 itemised). Figure 5-31 suggests that only floor 2 and possibly floor 1 have any vertical or horizontal associations. It is also noted here that both flint and pottery are recorded as on and not in both floors 1 and 2 and as such are considered to be contemporary (if, as before, these artefacts were in the clay floors it would suggest that they were incorporated into the site when the clay was brought in).

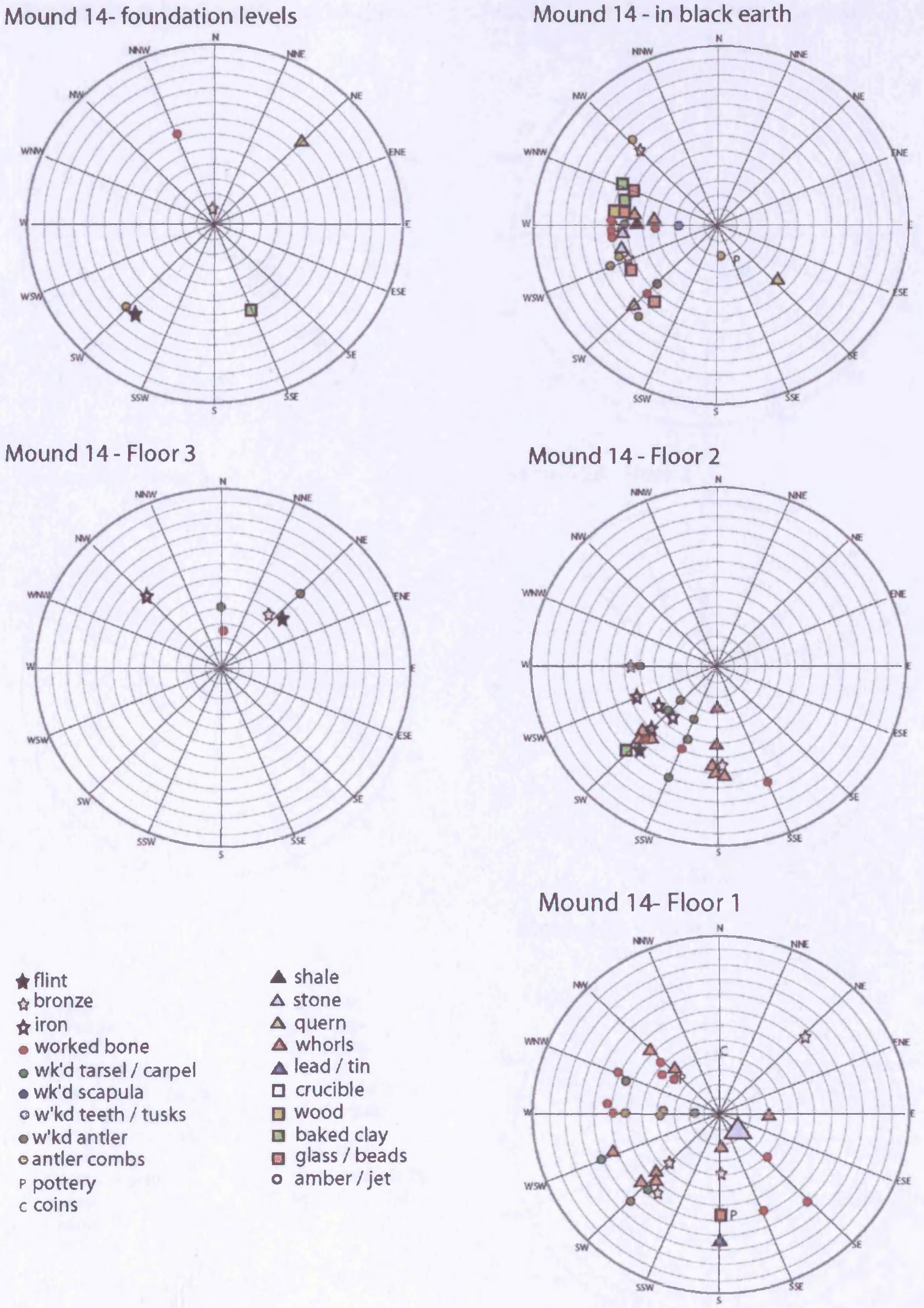

Figure 5-30: Abstract view of Mound 14 visualising the horizontal spread of artefacts against the vertical stratigraphy where information was detailed enough.

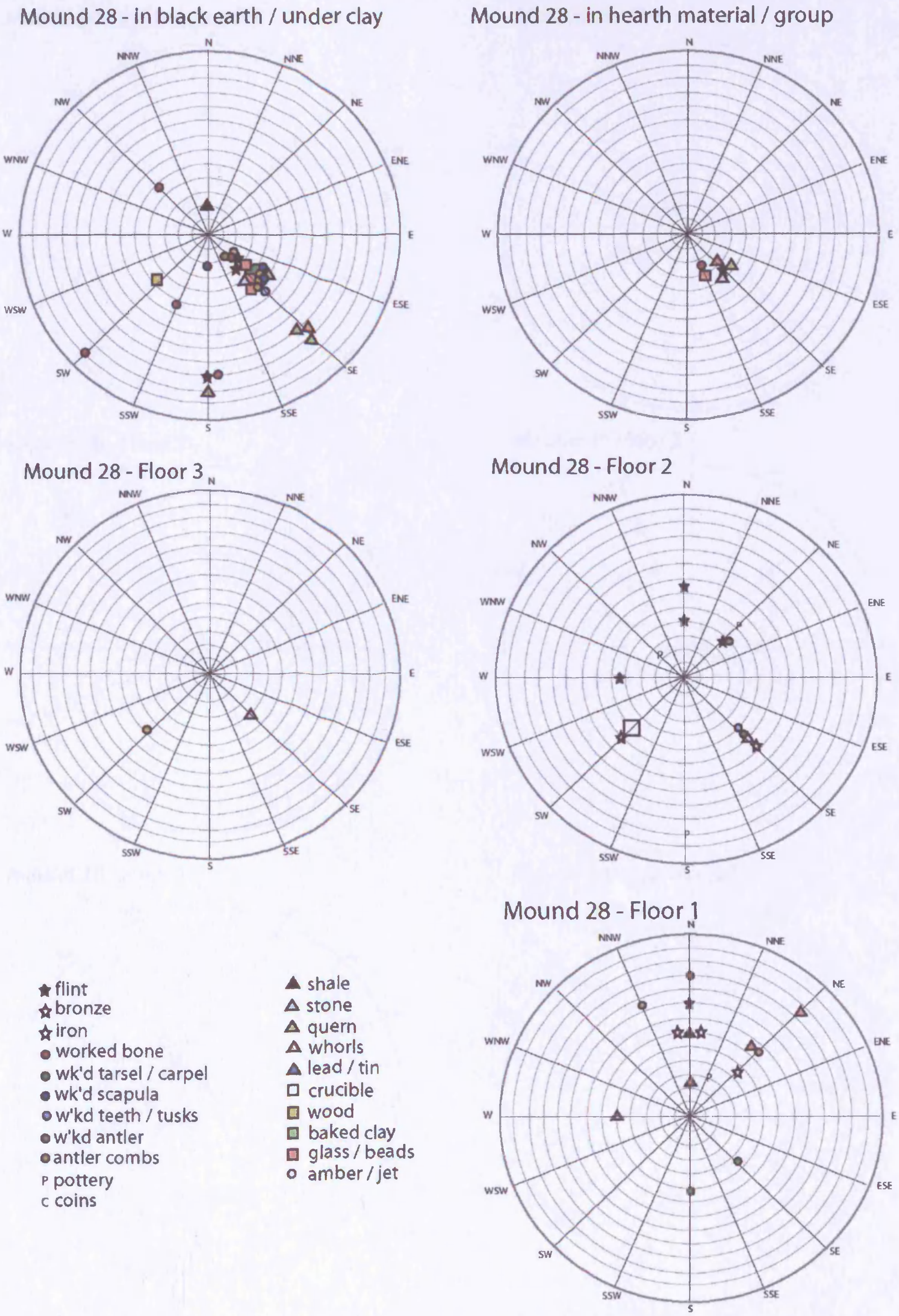

Figure 5-31 Abstract view of Mound 28 visualising the horizontal spread of artefacts against the vertical stratigraphy where information was detailed enough.

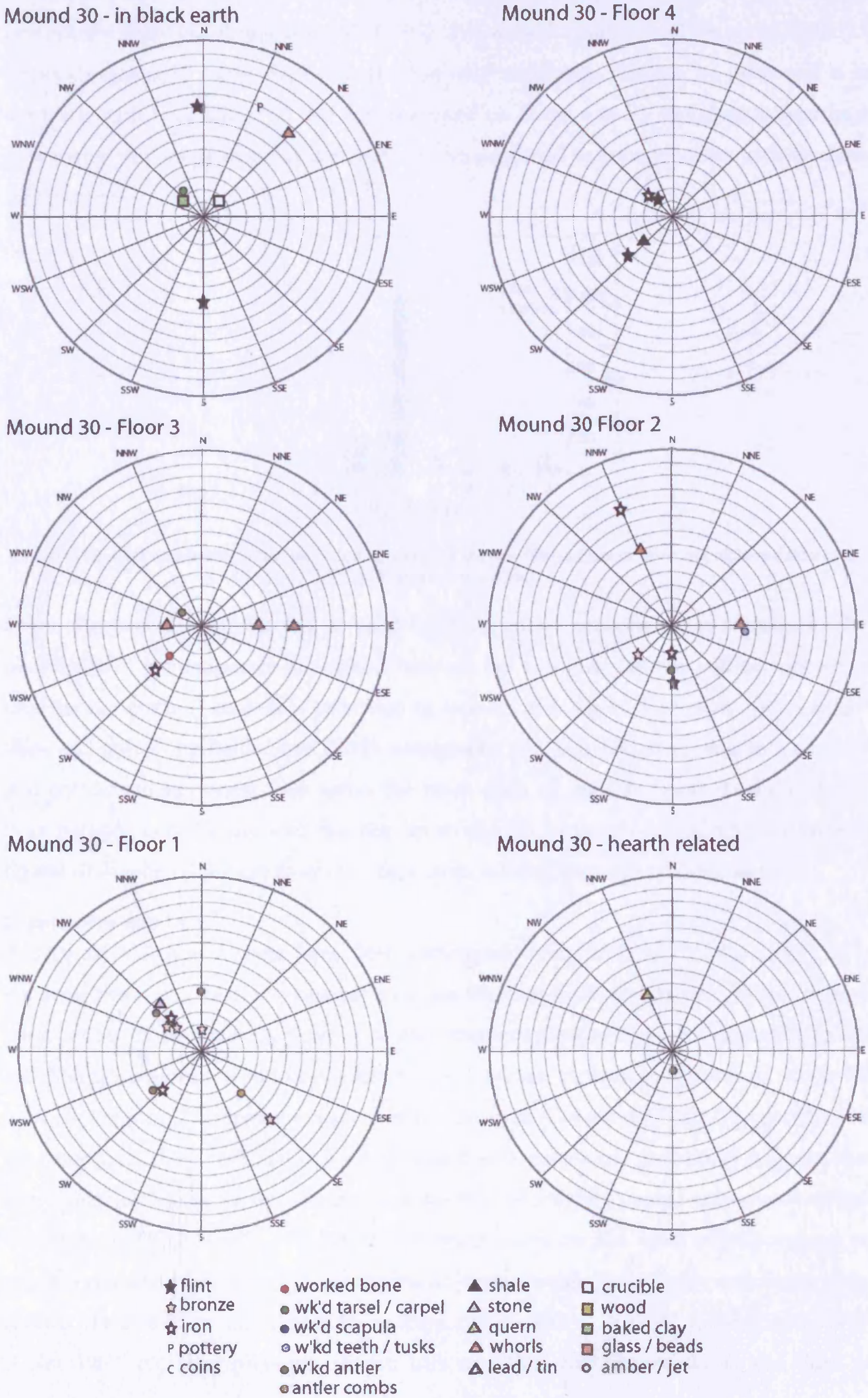

Figure 5-32: Abstract view of Mound 30 visualising the horizontal spread of artefacts against the vertical stratigraphy where information was detailed enough.

Mound 30 presents a similar picture although not as clear. Figure 5-32 shows five flints to one pottery sherd but Rouillards table (1987, 203, table 5.7) gives total sherds as 1102 (27 itemised) against 15 flints. Broken down, the only association that can be presented is in the black earth layer but given that flint is located on floors 4 and 3 and close to hearths it is probable that much more of the flints can be suggested as contemporary with the Iron Age pottery.

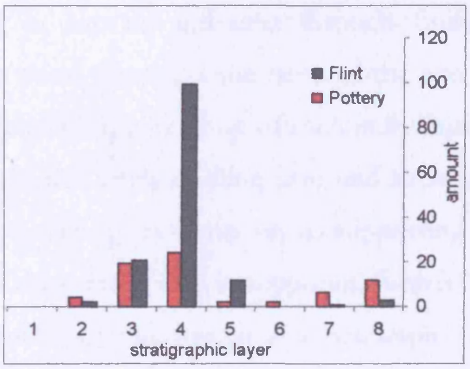

Figure 5-33: Flint and pottery from recorded contexts at Meare Village East. It does not included numbers for bulk pottery recovered.

Given the limited data that can be used for comparison between the two materials the probability of contemporary association between the two materials can still be suggested. One further piece of analysis is presented to support this. Figure 5-33 charts the 'located' flints and pottery by Bullied and Gray's stratigraphy and as expected the majority of flints and pottery are recovered from either the black earth or the clay floors. If the flint had been brought into the site with the clay we would not expect to see closely comparative figures of numbered pottery from the black earth, the clay floors or even the hearths.

Copper alloy and Iron

A total of 157 iron objects have been catalogued from MVE and Coles (1987, 117) confirms this is a comparable number to those found at GLV and MVW. Although there are a couple of examples that can be termed weapons such as the two dagger-blades I20 and I24, the majority of the iron artefacts are domestic implements several of which fall under heavy tool classifications, such as anvils and axes (Coles 1987, 117). The presence of the latter tools along with lighter tools such as chisels, points and punches is evidence that iron implements played a significant role in heavy duty activities carried out on and around the settlement (Coles 1987, 117, 239-40). In comparison, the 156 items of bronze seem to appear primarily in the form of ornamental objects, particularly brooches and finger rings and like the iron items are comparable in form and number to those from GLV and MVW (Coles 1987, 66). The presence of iron bars and slag, and bronze sheets and drips is evidence of some local metallurgy, but as Coles (1987, 241) indicates, it is difficult to establish the level of such production based on the evidence recovered.

So how do the flint implements relate to these metal finds? It is clear that the bronze utilised at MVE does not really offer any direct competition to flint as a raw material as it appears to be utilised for primarily for ornamental items. Yet, iron artefacts clearly form a significant part of the domestic tool kit. Figure 5-34 shows that numbers of flint rise and fall in the same manner as bronze and iron through Bullied and Gray's sequence. Additionally, if we bear in mind that on some parts of the site sequence 3 and 4 may be contemporary in accordance with the build up of each individual mound, and the variation in activity between mounds, the levels of flint, iron and bronze would perhaps level out somewhat. Therefore, this pattern goes some way to supporting the theory that the flint is indeed contemporary with the metals. This is supported further by figure 5-35 which gives a near exact picture when plotting flint, bronze and iron implements alone by stratigraphic sequence. The only minor difference is that there appear to be more flint implements in sequence 3 than implied in figure 5-34. In addition, if we remove the residual elements of three arrowheads and one microlith from sequence 4 it does indeed support the balance suggested.

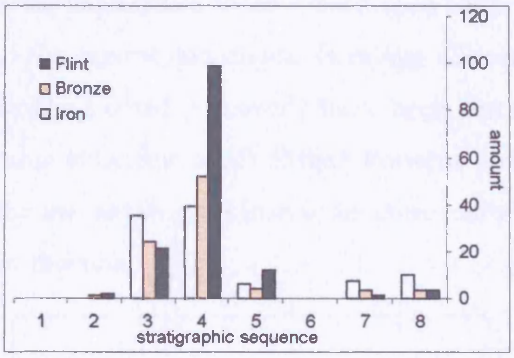

Figure 5-34: Flint, bronze and iron totals from Meare Village East, using Bullied and Gray's stratigraphy.

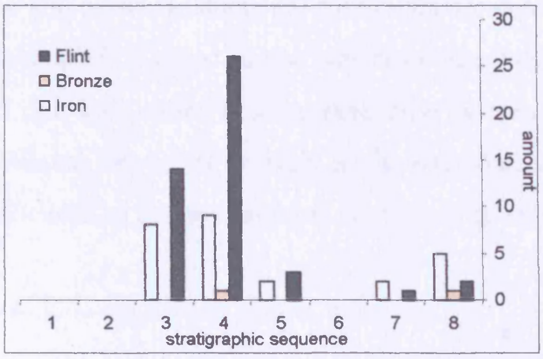

Figure 5-35: Flint, bronze and iron implements (identified in Coles 1987 report and from illustrations by the author) using Bullied and Gray's stratigraphy.

In order to identify why flint and iron implements were utilised at the same time, a study of implement type has been made. As seen earlier in tables 5-11 and 5-12 and figure 5-27 similar figures of implements and miscellaneous retouched pieces of flint were recovered. Of the identifiable implements, scrapers were the most dominant, numbering 16 in total. Despite the five arrowheads recovered this model of scrapers dominating the retouched pieces is expected, and given the rate of pay for identifiable artefacts to their finders it is not surprising why more of the awls and miscellaneous implements were not found. A primary study of the miscellaneous pieces, however, may identify some crude awls which have appeared in other Iron Age assemblages recently at Budbury and Liddington Castle (see Chapter 6). Of the iron artefacts, blades make up 27 of the assemblage and given recycling is a probable element this is a significant number. Another 20 items that can be classified as implements were made up of punches/points, chisels, an adze, a gouge, a file, an axe head and a hammerhead.

Therefore, the iron tools which have primarily cutting, boring and graving functions appear to have very different functions to those of flint which primarily appears to be scraping with some boring actions. The latter function could be accounted for by different implement types on different raw materials such as leather or bone. As wood working and hide working are both evidenced at MVE the two tool types both have a role to play in the domestic activities taking place at MVE and most likely MVW and GLV also. Flint scrapers are widely known as a tool utilised for working hides, amongst other materials, and iron tools generally replaced flint through the Neolithic and Bronze Age for working wood, for instance, axes for tree felling and chisels for carpentry. Iron and bronze tools are considered further when discussing worked bone below.

Worked bone

Another major activity which took place at MVE (Coles 1987, 240-41) is bone and antler working. As with Pottene, it is suggested that flint tools at Winnal Down were the most likely implements to have been used for bone and antler working, yet these sites are dated to the earliest and middle Iron Age. Given that MVE is dated to the Late Iron Age, bone working could potentially have been carried out with either iron or flint. Iron is clearly more abundant at MVE than Potterne and Winnal Down, most likely to the later date of the site allowing for iron to be more easily procured as greater amounts were in circulation by this time.

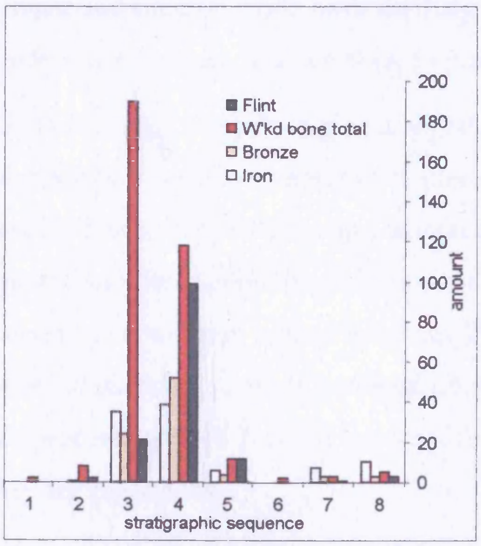

Figure 5-36: Flint and total worked bone against total iron and bronze recovered using Bullied and Gray's simplified stratigraphy.

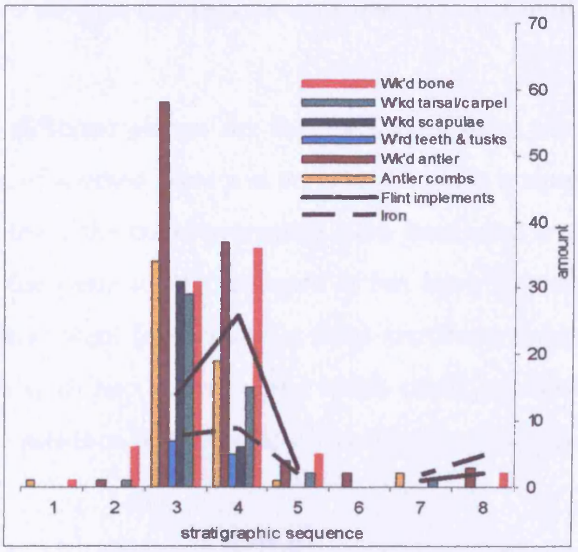

Figure 5-37: Type of worked bone against flint and iron implements using Bullied and Gray's simplified stratigraphy.

Figure 5-36 shows that following the general pattern, the majority of worked bone and antler were found in sequence 3 and 4. Yet, although there was a drop in bone working from 3 to 4 and an increase in flint, the same is true for bronze and iron. There is also the contemporary factor to consider between the two sequences and again the two figures for bone and flint could potentially balance out. No further enhancement can be made from identifying the type of bone worked against flint and iron implements (fig. 5-37) as the pattern remains the same. However, it becomes clear that with the decrease in all worked bone, antler and general bone working is still quite high, and the increase in flint and iron implements do indeed have a role in this activity. The fact that flint implements are considerably more plentiful than iron could suggest strongly that flint played a more active role in bone working. Therefore, can visualising the evidence spatially add anything to this developing interpretation?

Figure 5-38 visualises Mound 10 spatially and vertically and appears to be of no help as Floor 1 shows that iron and flint are both in close proximity to worked antler, yet the iron pieces are believed to come from an anvil and the flint implement is a scraper. Again, the earlier figure of 5-30 gives the same picture where Mound 14 floor 2 shows flint and iron in close association to a variety of worked bone types. In the south-west of the mound approximately 14 feet from the c.p. a flint scraper was recovered close to a piece of worked bone, three whorls and a piece of baked clay. The iron piece has been recorded as part of a tanged blade. Other bone pieces on the south to southwest area are primarily weaving related items such as bobbins and a needle, which links nicely to the eight whorls recovered from floor 2. The other iron pieces recovered from this area are two fragments from another tanged blade, a possible stylus and the spatulate end of a poker. Whether the flint scraper and the iron blade have anything to do with the weaving activities on the mound is unclear, but portrays an interesting picture.

Mound 21 (fig. 5-39) does give a slightly different picture for the black earth layer where flint is found amongst a number of pieces of worked bone and no iron. The flint is simply recorded as a snapped flake and whether this flake could potentially have been used is not known without further investigation of the piece itself. Yet again it has been found in proximity to weaving related artefacts. There were five whorls in close proximity and the bone artefacts range from potential bobbins to two antler combs which could be utilised for processing wool. It is not known if the presence of two bone stirrers is related but again they are suggestive.

It is interesting to note that very few artefacts were recorded as coming from the floors in Mound 21 compared to the black earth and isolated in/on floor 1 is a leaf-shaped arrowhead and almost directly above it in floors 2/3 a battered flint chopper. A similar pattern can be found throughout all of the mounds which have diagnostically earlier pieces. In Mound 4 (**CD** Appendix 3b) a leaf-shaped arrowhead was found in isolation spatially but there is no vertical stratification to support this further. In Mound 25 (**CD** Appendix 3b) a tanged arrowhead was found in isolation in/on floor 2 and in Mound 27 a microlith was recovered under the same instance. I feel this isolation from other Iron Age artefacts strongly supports the view that the majority of the flint found at MVE is contemporary.

Mound 28 (fig. 5-31) portrays a very similar pattern to Mound 21 (fig. 5-39), for the black earth and although more dispersed, floor 1. In the black earth two miscellaneous retouched pieces of flint were recovered in an area associated with many worked bone pieces, ranging from three antler combs, one point, 24 fragments of metatarsal and metacarpals (many of which had signs of wear (polished), were broken or had cut marks), two scapula, one tooth and an antler handle. In the mix of all these pieces were three beads, and close by was another bone stirrer.

Mound 30 (fig. 5-32) is not really of any help as the artefacts are again dispersed, although there is a tendency towards a closer proximity of iron to bone in floors 1 and 2. However, these iron artefacts are one miscellaneous piece and a spearhead in the south near to a worked roe deer antler, and a potentially modern clamp next to a possible polished human radius fragment on floor 1 in the southwest.

Shale

The 49 itemised shale objects and numerous other fragments came mainly from armlets. Coles suggests that further work is required on them before it can be established whether they were hand-fashioned or lathe-turned (Coles 1987, 130). At Potterne it is strongly suggested that flint was used to fashion the shale, but that cannot be suggested for MVE. The data for the two materials does not appear to correspond with each other as seen in figure 5-40. In fact the fall in shale takes place between sequence 3 and 4 whereas flint, bronze and iron falls dramatically between 4 and 5 (hearth, fire ash spreads and charcoal layers) and layers above this are flood soils or Roman rubble. However, again the fall in shale between sequence 3 and 4 is subjective to the contemporary relationship between the clay floors and black earth on some parts of the site, but there still does not seem to be much association between the two materials and it is quite probable that very little, if any, shale objects were made at MVE.

The abstract mounds do not present a better picture either with only occasional flint / shale associations as seen in mound 30 (fig. 5-32). On the western side of floor 4 two retouched flint implements were found near a shale armlet fragment along with an iron file

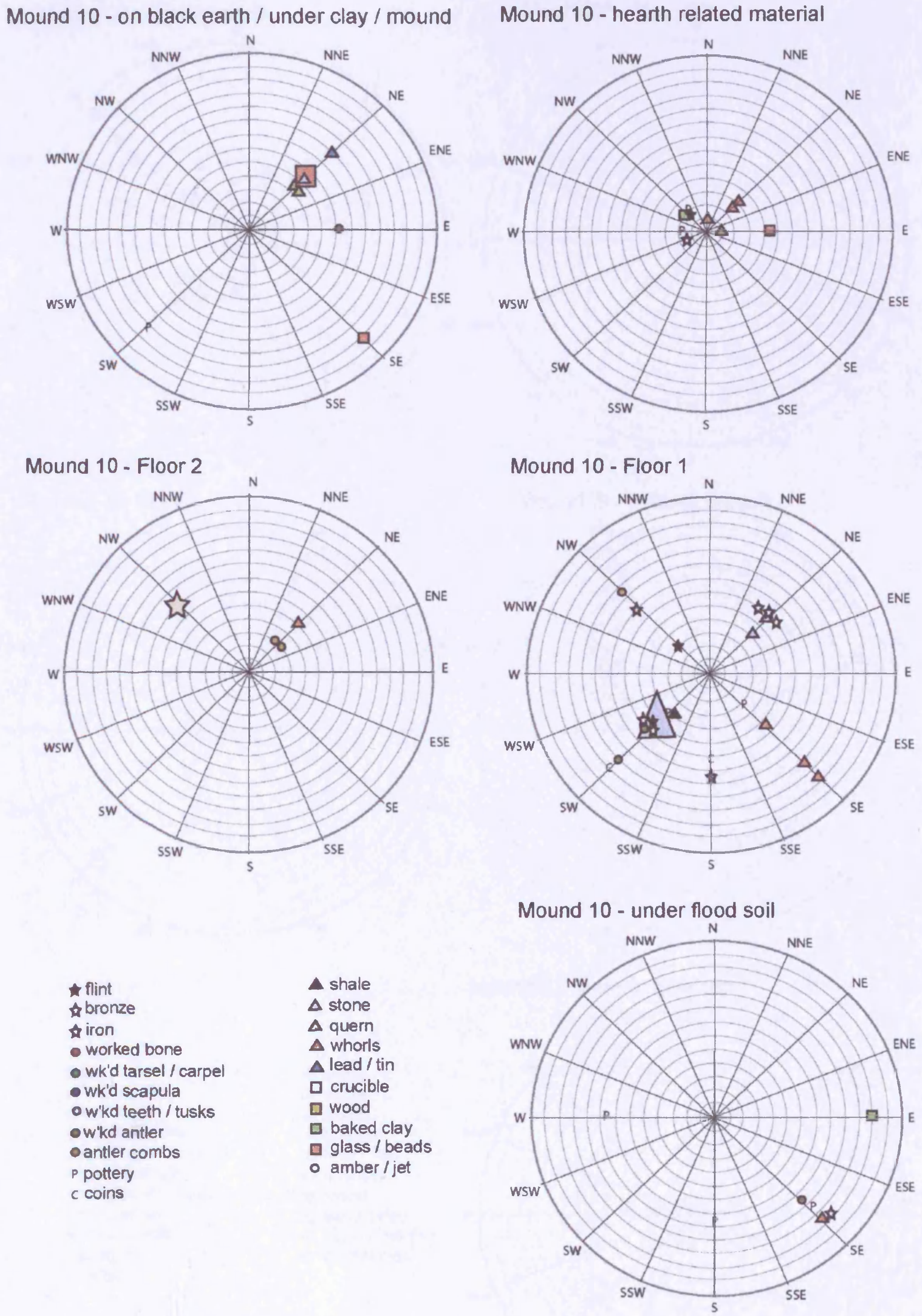

Figure 5-38: Abstract view of Mound 10 visualising the horizontal spread of artefacts against the vertical stratigraphy where information was detailed enough.

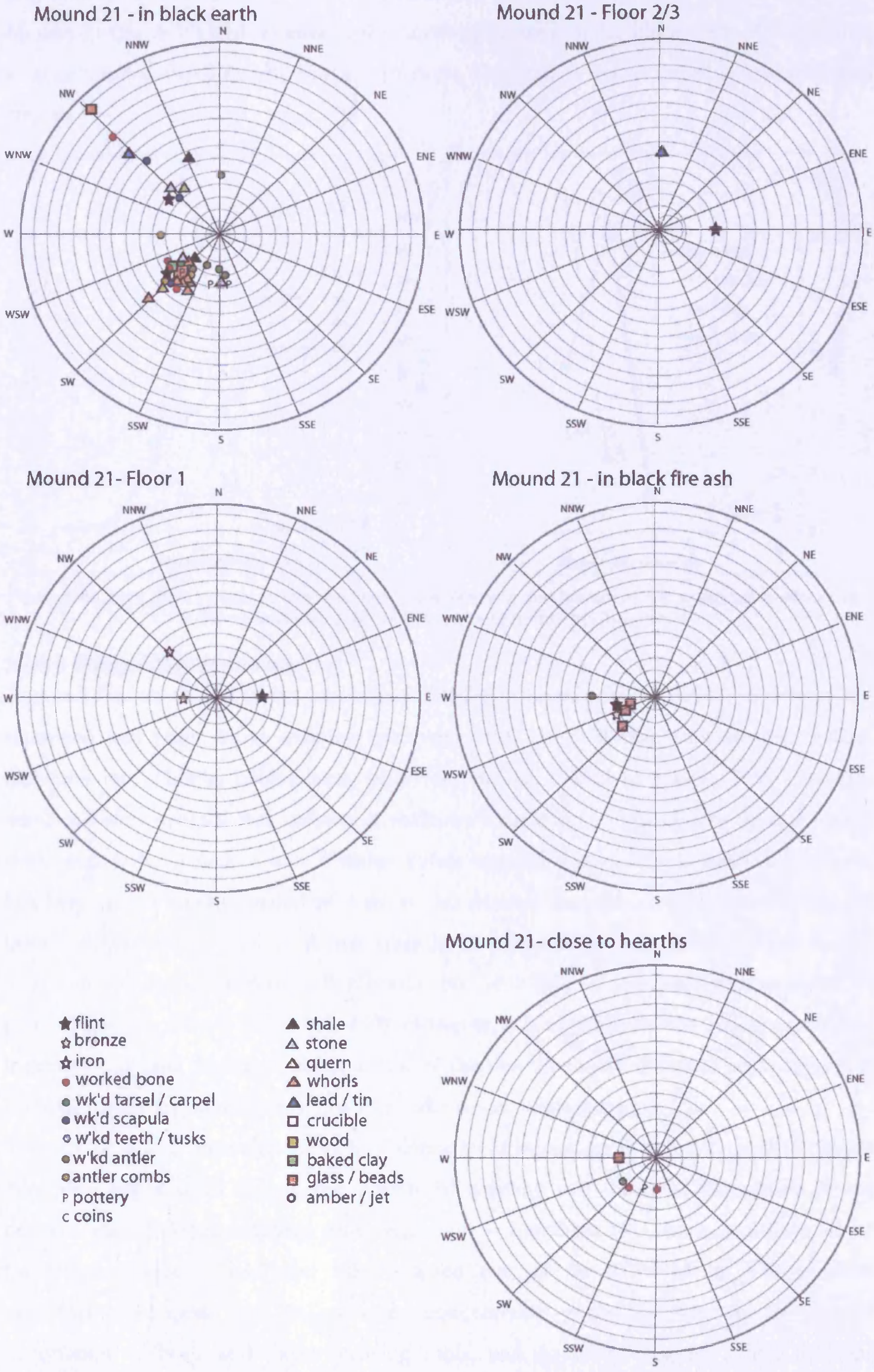

Figure 5-39: Abstract view of Mound 21 visualising the horizontal spread of artefacts against the vertical stratigraphy where information was detailed enough.

fragment. In addition, a fragment of a shale armlet was found in the southwest area of Mound 21 (fig. 5-39) and another in the north-north-west in the black earth. A heavy flint scraper was recovered nearby in the northwest, although closer to the flint was a worked scapula.

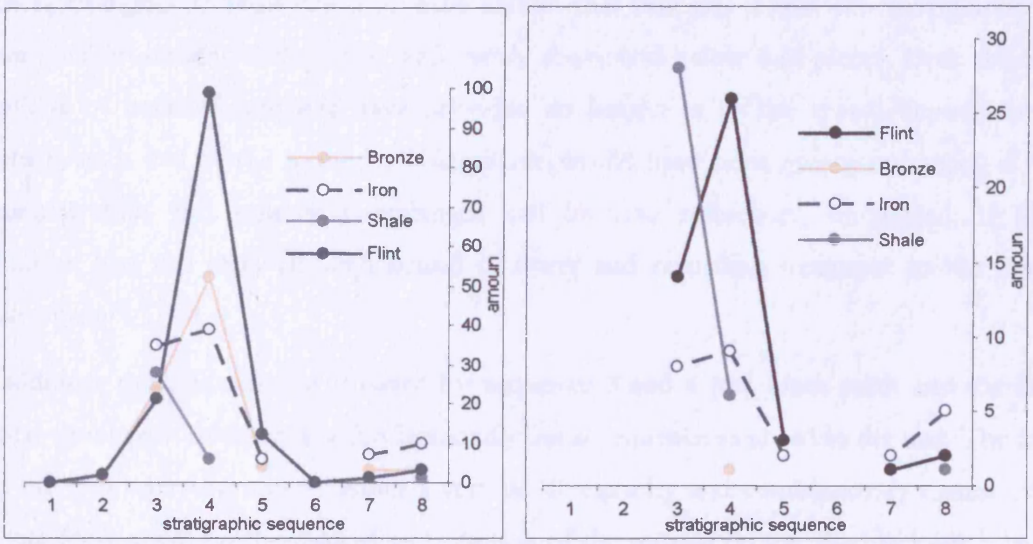

Figure 5-40: First chart visualises total itemised shale, flint, iron and bronze by the stratigraphic sequence, the second with only the flint, iron and bronze implements.

Meare Village East Summary

Iron and flint co-existed as raw materials for different tasks, possibly flint for hide working (scrapers) and some bone working (scrapers, awls, sharp flakes), iron for tree-felling, carpentry etc. (chisels, blades, axes) and bone working (blades, points). It is uncertain whether either material was utilised in shale working due to uncertainties as to whether these were lathe turned or not. Whether either material dominated the tools required for butchery cannot be determined as there are no detailed records on the location of animal bones or their butchery marks. A large quantity of animal bone was recovered from the site as referenced in the excavation notebooks, but very little or no detail was recorded by either Bullied or Gray (Coles 1987, 230). However, it is equally possible for either material to have been used for this task or a mix of the two given the different components of skinning, dissecting and filleting (see Appendix 6 – experimentation).

Mounds 10 and 21 provided enough evidence to at least suggest that certain flint objects may have had a small role in the activity of weaving due the close association found between the artefacts. Although this suggestion is based on two mounds and could be purely coincidence, Orme and others noted that at the 1979 Meare Village West excavations, scrapers and knives were concentrated across a very similar mound distribution to bone and antler weaving tools, and go on to suggest a link for flint implements with textile working (Orme *et al.* 1981, 62). It is worthwhile therefore, to consider future explorations of a textile association in other excavations.

The attempt to explore spatial associations through the reconstruction of abstract mounds has been reasonably successful. They have shown that flint, iron, bronze and worked bones, amongst other artefact types, were frequently in close proximity to each other even when the clay layers are broken down into individual floors. In conjunction with the vertical stratigraphic sequence they have shown that flint lies within the stratigraphy of other datable artefacts with pottery and metals above and below flint pieces. Even the low numbers of itemised artefacts have provided an insight as to the spatial deposition of artefacts on a few of the mounds. This picture would have been greatly enhanced if the remaining flint and pottery assemblages had location references, or indeed, if flint collection had not received such biased recovery and recording treatment in the initial excavations.

In addition, the evidence put forward for sequence 3 and 4 (the black earth and the clay floors) should not be taken as a fundamentally linear sequence as noted in the text. The fact that the two layers have both/either a vertical stratigraphy and contemporary nature over the site (dependent on the mound and position of the mound on top the black earth layer on which all the mounds sit) does make any analysis of materials very difficult. It is considered here that both sequences should be considered generally as one when discussing activity over time. It is clear that the black earth layer forms after the foundation layer and that the clay floors are below sequence 6. What generally happens to the sequences in between this time is confusing. Clay floors were placed upon black earth, but areas of black earth around these floors were used at the same time, hence Coles' suggestion that different activities relate to different mounds potentially related to indoor-outdoor activities.

Table 5-13: Artefacts recovered from MVE shown by Mound.

ONLY MOUNDS WITH 2 OR MORE DATA LINES LISTED (not Mounds 34)

Mound	Flint	Pottery	Wk'd bone	W'kd tarsal/carpel	W'kd scapulae	W'rd teeth & tusks	Wk'd antler	Antler combs	Bronze	Iron	Crucibles	Shale	Stone	Querns	Wood	Baked clay	Glass & beads	Lead & tin	Whorls	Amber & Jet	Coins	total	total listed by Coles *	less well-recorded artefacts where amounts not given (but number accounted for where records indicated >10)
1	24	25					1	1	5	1		3	35	1		1	2		1		11	111	127	flints, pottery 10.5kg
3	1	11	7				2	2	8	9		2	66	3			1	19	9		3	143	138	flints, pottery 23kg
4	22	3					1		6	1			1				2		1			37	48	whetstones, pottery 2kg
5	2	1					1							1		1						6	26	flints, pottery 1.4kg
10	18	23	2	2	1	1	9	5	15	13		3	571	3		4	9	2	13		2	696	664	bronze sheet, iron, lead &pottery 48.3 kg
13	16	5	11	1	13	3	14	13	4	13		5	184	18		4	14	6	10	2		336	398	worked bone, pottery 14.3kg
14	39	48	25	5		3	11	8	12	6		1	121	4	1	6	5	1	18		1	315	218	bone, wattlework, iron, quern & bone points
15	16	1	3				3	1	1										1			26	6	pottery, 2.9kg
16	14	16	7	3			1			1			1			6			3			52	14	worked bone, pottery 17.8kg
17	27	25	42	8	17	3	29	12	8	28	1	9	393	18		28	9	4	27			688	672	bronze sheet, quern frags & pottery 104.6 kg
18	14	9	6			1	1	2	8	5			24			2			1			74	43	fish bone, bone pins & pottery 25.3kg
19	93		2	6			1		5	6		1	280		2	2	1	1	1		1	402	>1000	bone & pottery 18.1kg
20	2	4	2	1			5		8	6		1	13			4	5		4			55	>500	flints, bronze, antler, bone & pottery 15.6kg
21	21	6	12	2	3		10	3	4	1	1	3	91	3		1	17	2	10			190	228	baked clay, bronze shet & pottery 43.6kg
22	18	3	16	6	5	5	20	20	7	16		14	354	10		7	60	1	28	3		593	596	bronze, baked clay, quern & pottery 142kg
24		13	4	7			9	1	3	5	1	1	67			2	1		19	1	2	136	147	flints, worked bone & pottery 38.9kg
25	53	1	2	2			1		1													60	80	quern & pottery 1kg
27	25	3	3				1		2	1												35	39	pottery 0.5kg
28	72	19	9	26	3	2	4	6	2	3	5	2	72	6	1		4		5			241	238	quern fgs, bone bobbins, slag, pottery 26.8kg
30	15	27	1	2		1	6	1	6	7	2	1	21	1		1			6			98	90	pottery 23.8kg
34			4				2	1	3	1		2					2					15		
35/36	4		2			1	5	4	21	14				3			1		3		1	59		
47	34	7			2	1	2	1	4	1			32	4		12	1		4	1		106	167	pottery 15.9kg
51		2	1	4					3	1			1	1		1	2					16	41	flints, slingstones & pottery 8.2kg
15A	1	4	3	4		1	8	1	7	10		1	1			2			5			48	59	flints, iron, bronze sheet & pottery 8.6kg
15B	17	20	6	4	1	1	4	1	11	7			2			2	1	1	15		3	96	123	whetstones, slingshots, daub & pottery 33kg
15C			2						1	1			13				2					19	24	pottery 14.1kg
	548	276	172	83	45	23	151	83	155	157	10	49	2343	76	4	86	139	37	184	7	24	4653	8758	

* It is not clear from the report whether this figure includes less well-recorded items or not (see individual mounds in appendix for numbers). In some cases it appears that they are included, and others not. Also, in some instances it appears that Coles' figure is less than those calculated here and as such too much weight cannot be placed on the difference between the two.

Further note - some of the 'numbered' artefacts appear to have been listed by Cole under the less well recorded group of finds and may account for some of the discrepancies between the two totals here.

Table 5-14: Numbers of finds for each artefact group divided by Bulleid and Gray's simplified stratigraphy for the whole site at MVE.

stratigraphic layer	Flint	Pottery	Wk'd bone	W'kd tarsal/carpel	W'kd scapulae	W'rd teeth & tusks	Wk'd antler	Antler combs	Bronze	Iron	Crucibles	Shale	Stone	Querns	Wood	Baked clay	Glass & beads	Lead & tin	Whorls	Amber & Jet	Coins
8	3	12	2				3		3	10		1	1						3		5
7	1	6		1				2	3	7			1	1		1			2		
6	0	2					2														2
5	12	2	5	2			4	1	4	6			3	5		5	7		7		
4	99	24	36	15	6	5	37	19	52	39	6	6	393	10	1	7	5	22	55	1	7
3	21	19	31	29	31	7	58	34	24	35	2	28	32	42	3	20	53	7	40	4	2
2	2	4	6	1			1		1				142	1		2			1		
1	0		1					1					1						1		
VUS	410	207	91	35	8	11	46	26	69	60	2	14	1770	17		51	74	8	75	2	8
total	548	276	172	83	45	23	151	83	156	157	10	49	2343	76	4	86	139	37	184	7	24

Summary

A comparison between Potterne and Winnal Down can be made by using the detailed breakdown of each assemblage. To ensure that any results are sound it is important to ensure that the data are indeed comparable. As a result the EIA phase from Winnal Down is plotted against the whole of the Potterne Deposit: due to the comments made by Needham on the site dating to the Iron Age proper and terminating at the end if the Iron Age (page 77). Furthermore, only the data that has been refined into basic descriptions can be used in any comparison. In this case we can compare the material from Winnal Down's phase 3 enclosure ditch 5, against all material from Potterne's trowelled columns in cutting 12. Figure 5-41 Shows that not only are the patterns between each site similar in the type of flint material present, but also the numbers. The increased level of broken flakes from the Deposit at Potterne is probably indicative of its midden nature as opposed to those deposited and sealed in features such as the pits at Winnal Down.

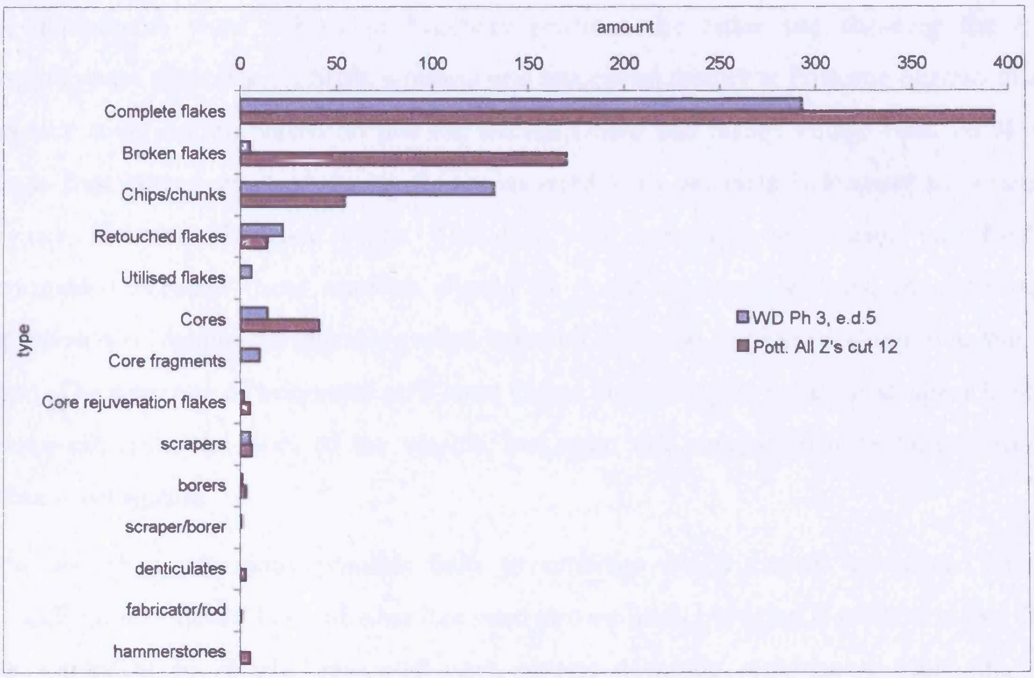

Figure 5-41: Comparison of worked flint samples from Winnal Down (phase 3, enclosure ditch 5) and Potterne (all zones of cutting 12).

Although Meare Village East could not be broken down in the same manner due to the lack of more detailed analysis of the flints and the bias in recovery of flints types, it is still clear from figures 5-27 & 5-28 that the flint assemblage follows the same patterns as that of Potterne and Winnal Down, even down to the patterns of retouched pieces with scrapers and miscellaneous retouched pieces dominating the implement types.

The detailed study of Potterne, Winnal Down and Meare Village East has supported the observations made from the overview of the sites in table 5-1, enough to suggest that these assemblages should be regarded as Iron Age, with the probability of a few mixed assemblages. To stress this point, these detailed studies also support the data shown in figure 5-3 of retouched pieces from the overview catalogue, and the technological and morphological descriptions of each assemblage falls within the observed criteria expected for potential Iron Age assemblages. Therefore, individual analysts that regarded the possibility of the assemblages in table 5-1 as being of an Iron Age date should now be supported and those assemblages that were not may need re-analysing. As such, all of the catalogued sites deserve future recognition and re-analysis to confirm their dates within the Iron Age.

Throughout each of the detailed studies the same activities became associated with flint utilisation. Bone working was the main association (evidenced by worked bone artefacts) at Winnal Down and MVE, but particularly Potterne. Furthermore, there were associations with general animal bone at both Potterne and Winnal Down reflecting a possibility that flint implements were utilised in butchery practice; the latter site showing the best material/phase associations. Shale working was associated mainly at Potterne but too much relevance could not be placed on this for Winnal Down and Meare Village East. At Meare Village East there appeared to be flint associated with artefacts belonging to weaving activities, but also alongside beads. This is a very interesting association and further relationships between these artefacts should be noted in future analysis. In addition, a suggestion was highlighted regarding a link between lithic use and salt production at Winnal Down. The presence of briquettes at Winnal Down could suggest a use for scrapers here to remove salt from the sides of the vessels, but again this suggestion is tentative without further investigation.

There are of course many possible links to activities which cannot be viewed by the archaeological evidence beyond what has been shown here, but what is evident is that flint does appear to be clearly associated with several domestic activities at each site, not necessarily the same at each one, and that it is used alongside metal implements perhaps for different tasks or different parts of each task.

Chapter 6

Primary case studies

In the previous chapter a catalogue of sites was presented derived from published sources from central and southern Britain and a basic overview of their flint assemblages was discussed. From these, three major sites with some of the largest assemblages were examined in detail to identify any further patterns within their flint assemblages. These sites were also chosen for their detailed site reports, which enabled the analysis of material culture and context association in order to identify possible roles for the continuous use of flint technology. Having made some very interesting observations and suggestions regarding flint use in the Iron Age it is time to consider whether we can extract more characteristic patterns from the flint assemblages themselves to aid in the identification of Iron Age assemblages and to hopefully set them apart from earlier industries. At this point it may be important to note that it is not the intention or role of this study to make detailed comparisons against specific Neolithic and Bronze Age flint industries, it is hoped that the discoveries and suggestions made in this thesis will provide a platform for future comparisons to be made. This chapter deals only with the flint assemblages. The following chapter (chp. 7) will compare the flint data from the three main sites in chapter 5 to those presented in this chapter and at that point further published associated material culture from primary analysis will be discussed and compared.

The case studies

The studies of Late Bronze Age flint assemblages (Chapter 3) provided the background for a study into Iron Age flint technology. With these as a platform, along with preliminary studies on Iron Age assemblages, Chapter 4 set out the criteria used to identify probable Iron Age flint assemblages. This was used to build the catalogue of potential sites presented in Chapter 5, yet can more criteria be extracted from detailed studies? The sites chosen for primary analysis in this chapter were all identified as possible contenders for contemporary Iron Age assemblages according to their morphological and technological attributes. As the intention was to undertake a detailed study of these sites they were not included in the overall review chart in the previous chapter. Care was taken not to choose particularly 'easy' or appropriate sites that may potentially lead the study into the realms of circularity or self fulfilling prophecy. For instance, selecting a set of assemblages that neatly fit the suggested Iron Age 'typology', or picking only sites with large assemblage numbers. For reasons stated earlier (page 60) many assemblage numbers are very low compared to earlier periods, with the majority being less than 100 followed closely by assemblage numbers between 100-500 pieces. If larger assemblages are consistently chosen to find patterns under research conditions, then it only serves to perpetuate the notion that we can gain nothing or little from much smaller collections. As such, four different assemblage sizes were chosen; North Bersted, West Sussex – 434 pieces; Budbury, Wiltshire – 229; Liddington Castle, Wiltshire – 86; Segsbury, Wiltshire – 60 (fig. 6-1).

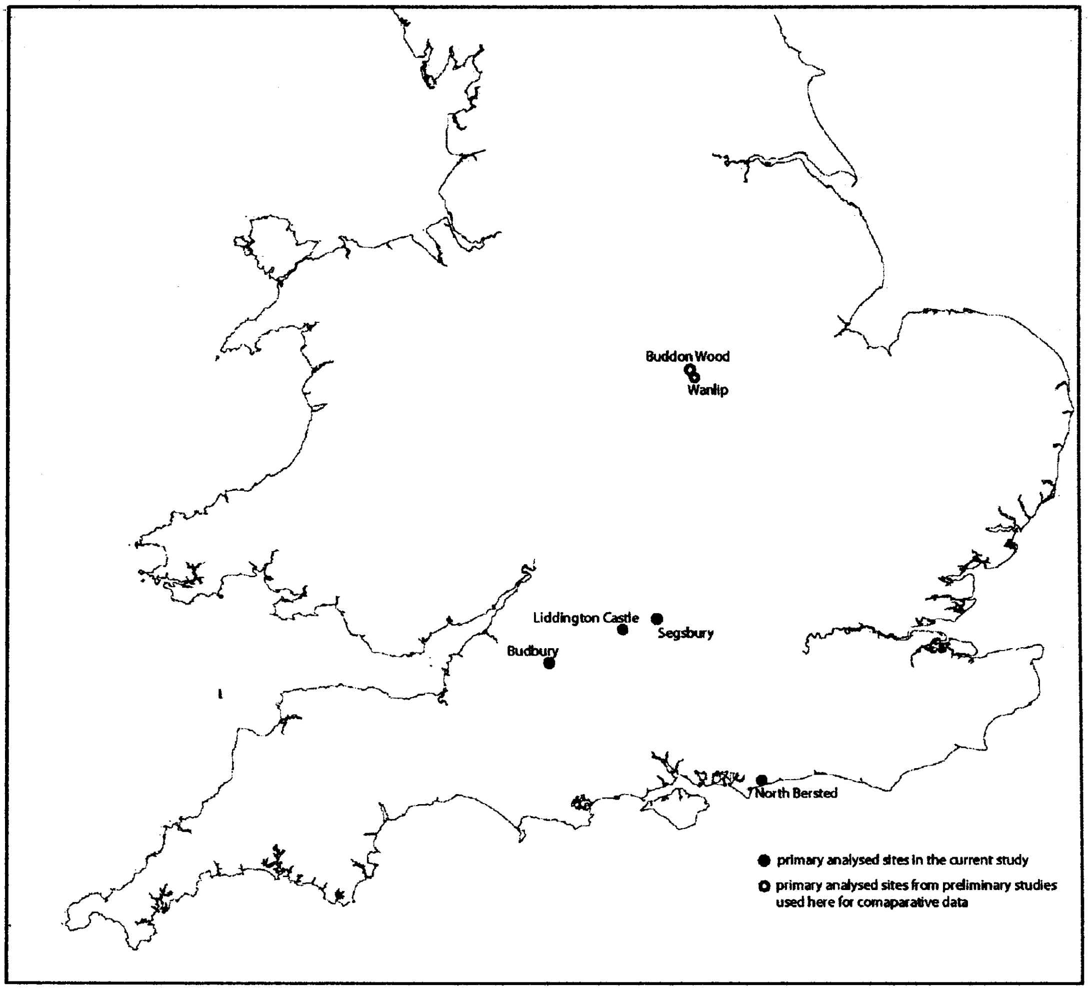

Figure 6-1: Location of sites used for Primary analysis in the current and preliminary studies.

The location of sites was not a primary factor for study either. For example, a conscious decision to pick sites to represent different regions was not carried out as it was felt that one site from four different areas would provide little valuable information at this stage. It is felt that once research into identifying Iron Age flint assemblages has progressed (hopefully some way by the end of this thesis), further research will begin into regional differences by reanalysing the assemblages using the methods set out in this study. As a result, other than assemblage size, sites were further chosen on the basis of their accessibility with respect to store archives, published information and archive data.

Throughout this process of site selection two questions were kept in mind. Can we identify an Iron Age assemblage from within a mixed period flint collection? Can we identify and date a flint assemblage associated with an Iron Age site with no earlier evidence for activity?

North Bersted was chosen to attempt to answer the first question. From the published report (Bedwin and Pitts 1978, 293-346), the North Bersted flint assemblage was clearly mixed, with a few Mesolithic pieces identified. However, the presence of Beaker sherds and a few identifiable Early Bronze Age flints clouded the rest of the assemblage, a point raised by the authors (Bedwin and Pitts 1978, 304). Therefore, can further study of these flints distinguish the Early Bronze Age pieces from the Iron Age, and discover if it all belongs to the same assemblage, or whether the flint is residual from the Bronze Age? A final factor for the selection of North Bersted is that the site formed part of a cluster of sites near the Sussex coast line and it seemed clear that if many of these sites did produce Iron Age flint assemblages, flint must have been an important raw material for tools for some purpose.

Two sites were selected to expressly explore the second question. First the site at Budbury, an Iron Age promontory fort in Wiltshire, where the only earlier evidence for activity on the site was immediately prior to the building of the rampart (*i.e.* still Iron Age). Wainwright (1970) had thought the assemblage to be contemporary but had few comparisons available at the time to take his analysis further. As an aside, most reports that were examined for this research assumed either a Neolithic/Bronze Age date for this type of non-inspiring assemblage and as such left many flint assemblages with no clear place within the site stratigraphy. These types of assemblage appear to be the commonest problem amongst Iron Age sites and it is perhaps here that the need for a flexible Iron Age flint typology is most pressing.

Liddington Castle, Wiltshire, also falls into this category but was chosen because the surrounding area has evidence for several earlier phases of activity but not directly on the site. Hence was the flint material on the site contemporary or residual from activity directly on the site or background noise from the immediate area? In addition, the difference between Budbury and Liddington Castle's flint assemblage size was hoped to balance the notion concerning smaller assemblages. Despite both sites being identified as hillforts they both produced evidence for domestic activity and given that the production and use of hillforts is still under debate, they have been regarded simply as another form of settlement for the purpose of assemblage exploration presented here.

Segsbury hillfort forms part of the Ridgeway Project under the direction of Dr. Chris Gosden and Dr. Gary Lock of the University of Oxford. Although this site has yet to be published it has been included in this research for the following reasons. Primarily I was invited to analyse the very small assemblage of 'uninteresting' flints recovered, which on first viewing looked as though very little information could be gained from it. However, although the collection of flints was small and uninspiring as an assemblage, it was seen as somewhat of a challenge to see if useful information could be gained from them, and in fact some interesting results were made with regards to dating the material by association and deposition.

A small introduction is given for each of the sites in order to set the background and review existing interpretations and problems with the assemblages. All of the sites are then discussed together under subheadings based on their morphological and technological analysis. Much of the analysis is qualitative and presented in chart format with supporting percentages. I believe that in attempting to understand the qualitative techniques utilised in flint knapping we gain a better insight into the knappers methodology, *i.e.* through attempting to understand why a knapper struck a core in a particular direction to remove a particular shaped flake and whether modifications were made to make it functional.

To allow for further comparisons to be made these sites will be compared with two sites analysed during the preliminary research leading up to this study; Wanlip and Buddon Wood, both in Leicestershire (fig. 6-1). Emphasis is not placed on them here as they have been published elsewhere (Cooper and Humphrey 1998; Humphrey 1998), but some additional information has been presented in order to facilitate comparisons with the new data. Furthermore, they serve as good comparisons for the following reasons. Wanlip (430) is a middle Iron Age settlement with a similar stratified assemblage size to North Bersted, the total number of flints including unstratified examples being over 1000. In addition, it appeared that although the stratified assemblage was quite distinct in its make-up with respect to the unstratified material, it was overall a mixed assemblage, with a predominance of earlier material from the unstratified contexts and a distinctly later prehistoric character to the stratified (Cooper and Humphrey 1998). All calculations regarding Wanlip are based however on the stratified material alone. Buddon Wood was an assemblage presumed to be Neolithic based on the morphology of the flakes, despite no evidence for diagnostic pieces and an absence of earlier activity from other material. Many sites like these are logged into museum records as such and therefore can be suggested to be 'floating assemblages'. Therefore, Buddon Wood provides a constructive comparison for the analysis of Budbury and Liddington Castle.

As with all research, it is not without its problems. Many of the other site assemblages initially chosen for potential analysis could not, at present, be located by the local authorities and as such were discussed in the overview chart in chapter 5. One of the objectives of the primary analysis was also to obtain the full paper archive so that a material association comparison could be made alongside the flint analysis to complement the findings of chapter 5. This, however, proved to be impossible in each case as despite published sources and record data stating the location of each paper archive, they could not be found despite intensive searching by the author or curators. As a result, any material associations for the sites discussed in this chapter can only be achieved based on the detail provided in the published reports.

North Bersted

The activity at North Bersted was suggested to reflect a settled community given the extent and maintenance of ditches and field boundaries, covering over 5 hectares of land. Pottery evidence suggests that the site was occupied between the third and first centuries BC when it was eventually abandoned, the site being levelled and in places burnt. During the occupation of the site some parts of the ditches appear to have been utilised for rubbish deposits given the unabraded nature of the pottery from phase 4 deposits (Bedwin and Pitts 1978, 309-11).

The site is perhaps the most difficult of those analysed here due to the complexity of the material recovered from a variety of datable features. The bulk of the site and its artefacts are dated to the middle to late Iron Age, but the presence of beaker sherds in the area of Trench C along with two barbed-and-tanged arrowheads and a few identifiable Mesolithic flint pieces clouds the dating for the flint assemblage. The assemblage is generally assumed to be late Neolithic or Bronze Age based on the presence of the few beaker sherds, the arrowheads and five scrapers which could possibly be of Bronze Age date based on the length:breadth ratio of flakes (Bedwin and Pitts 1978, 309). Although the authors do raise the possibility of an Iron Age date for a portion of this assemblage, suggesting that the beaker sherds may be residual, they fall on the side of there being little evidence for the survival of flint technology into the Late Bronze Age and beyond (Bedwin and Pitts 1978, 303).

Given these dominant assumptions and the lack of evidence for Iron Age assemblages during the 1970s some of these conclusions are acceptable. However, the methodology used for identifying the length and breadth ratio of flakes in the original report seems biased. From the explanation given on the methodology used for flake morphology analysis it seems that only flint flakes (78) from the area of Beaker activity were measured. Furthermore, all heavily used and retouched pieces were excluded from the calculated data, but included visually on a length:breadth chart, as were the Mesolithic pieces (Bedwin and

Pitts 1978, 306; 318 fig. 15). Interestingly, it is observed by the authors that these calculations and the scatter diagram fit nicely against material from an early Neolithic pit from Bishopstone, East Sussex (Bedwin and Pitts 1978, 306). Why were the remaining complete flakes and tools from the assemblage not included?

One reason may be how the assemblage was broken down for the original analysis. The assemblage was split into three groups: Group 1 from the Beaker area including those from the Iron Age ditch; Group 2 from areas excavated in 1976; Group 3 from all other areas excavated in 1975 and building disturbances across the site up to 1977 (Bedwin and Pitts 1978, 304). Although the 'chosen' material for length:breadth analysis could be totally based on the grouped material it does not seem a fully justifiable reason to exclude two thirds of the assemblage. In addition, the splitting of the assemblage does not appear logical. Group 1 has been separated from the rest on the grounds that it is earlier material based on the presence of Beaker sherds despite part of a large Iron Age ditch running across the area. It seems clear that the flint material from this area has already been pre-judged prior to analysis. Group 2 has been separated purely on the grounds of which year it was excavated, and Group 3 is made up of anything left.

Another difficult point with North Bersted is that the contexts recorded on the bags containing flint material in the archive barely represent those discussed in the published report, with only a few exceptions. This makes any comparison with the published data extremely difficult and without the paper archive it is impossible to link many contexts together. Therefore, where the data and the published report *do* match, comments can be made, otherwise the assemblage is treated as one unit rather than the three groups set out by Bedwin and Pitts. This seems a more logical approach to understanding the assemblage from across the settlement and any breakdowns made on the basis of the information from the archived material itself. This may be more beneficial ultimately as the assemblage is at least subjected to a fresh and non biased analysis.

Budbury

The remains of the rampart of Budbury promontory fort at Bradford-on-Avon held within it a rectangular building with an internal clay hearth. The excavation of this site and its environs produced large quantities of Early Iron Age pottery amongst metal and other domestic artefacts (Wainwright 1970, 108). The stratigraphy of the inner site was very simple; layer 1 – topsoil, layer 2 – dark loam, layer 3 – undisturbed Iron Age surface resting on the forest marble bedrock (*ibid.* 108, 120). The rampart does included additional contexts due to the collapse of stones from the rear of the bank and the body of the rampart itself, but overall the stratigraphy was uncomplicated; the rampart rested on the old land surface and the body produced only one rib fragment and five flint flakes, all thought to have been accidentally incorporated into the rampart during building from the pre-rampart occupation (*ibid.* 115). The datable artefacts from the pre-rampart occupation suggest that there was no significant time lapse between this and the rampart building. Wainwright suggests that the occupation may indeed reflect the very same people who built the rampart (*ibid.* 123).

Wainwight was in no doubt that the 229 flints recovered from Budbury were contemporary with the Iron Age activity, but the analysis of the assemblage was very basic and suggested that only one implement was recovered (a short end scraper) and ten cores, the remainder being waste (Wainwright 1970, 145). He further suggested that knapping took place on the site due to a concentration of cores in an area south of the hut (*ibid.*). The purpose of analysing the assemblage here therefore, is not to identify a date for the material but to identify any further characteristics that may aid in the classification of Iron Age flint assemblages that are difficult to date under similar conditions.

Liddington Castle

The oval hillfort of Liddington Castle resides 8km south-east of Swindon on the northern chalk escarpment of the Wiltshire Downs, an area that was utilised in the Neolithic for the quarrying of flint and chalk evidenced by several chalk pits 1km north-east of the Hillfort site (Hirst and Rahtz 1996, 2, 4), although the appendix data from the report suggests the possibility that these could be recent (*ibid.* 57-8). There have been many isolated finds on the slopes and surrounding area of the hillfort dated as far back as the Palaeolithic, but these are mainly dated to the Neolithic and Bronze Age, including barrows and a grave on the northern slopes excavated by troops from Chiselden Camp in 1916 (*ibid.* 6, 57-8). The latter comprised a flat oval grave of a crouched, longheaded female with a ox molar and a few flint flakes, that could be dated anywhere between the Neolithic to the Saxon period (*ibid.* 57-8). In addition to these earlier finds there have also been numerous Late Bronze Age and Iron Age finds from on and around the site (*ibid.*).

The assemblage of 86 flint pieces recovered from the excavation in 1976 was examined by Gardiner (see 1993). Given the difficulty of working with such a small assemblage she does comment that it is more likely to represent Late Bronze Age activity than Neolithic based on flake morphology, the crude nature to the working of the material and the restricted tool implements present (Gardiner 1996, 49). In support of this, no ancient features were discovered during the excavation (Hirst and Rahtz 1996, 30), however, Rahtz adds that although it is possible that the flints are contemporary with the Late Bronze Age/Early Iron Age pottery recovered from the within the rampart, only five flints were recovered from these contexts (*ibid.* 49). Rahtz further states that the remaining 81 flints were from definite Early Iron Age contexts and the pottery evidence supports a clear sequence to the stratigraphy of the site (Ashton, Bradly and Stevens, 1996, 42). Therefore, given the earlier finds recovered from the area and the positive notions put forward by the published sources Liddington Castle was chosen to hopefully clarify the date of the assemblage.

Segsbury

The flint assemblage from Segsbury Camp (alias Letcombe Castle) is the only unpublished primary sourced material to be analysed in the study and comprises material recovered over the 1996/97 periods of excavations which formed part of the Hillforts of the Ridgeway project (http://units.ox.ac.uk/departments/archaeology/projects/ridgeway/segs96.htm and segs97.htm, 1). The Camp had never been systematically excavated prior to the Project although there was a Saxon or possible Iron Age burial in the southern rampart reported in the 19th century and, as a result, one of the primary aims was to establish a date for the fort's occupation and its relationship to its neighbouring sites (*ibid.* 96, 2). Preliminary results from the two seasons suggest that the site, like the nearby sites of Liddington Castle and Uffington, have Late Bronze Age or Early Iron Age enclosures on the hill prior to the fort which are contemporary to surrounding features in the landscape. However, the occupation at Segsbury primarily dates to the Middle Iron Age where the interior of the fort appears to have been intensively occupied, yet ceramic evidence extends this date to between the Early Iron Age and the late Middle Iron Age (*ibid.* 96, 8; 97, 2-3). The Middle Iron Age occupation seems to include most domestic and craft activities with evidence also for special deposits (*ibid.*).

Given that preliminary results date the occupation of Segsbury Camp to the Early-Late Middle Iron Age, and that the earliest evidence is represented by a Late Bronze Age-Early Iron Age enclosure on the hill, makes the small flint assemblage a good target for analysis. As remarked above, the fact that there are only 60 uninspiring pieces makes the analysis all the more interesting. In addition, due to its relationship to Liddington Castle, as part of the Ridgeway landscape, the results from the flint analysis will be interesting to compare.

Material type and deposition processes

Raw material

Pebble flint was used at NB and predominately at BUD and chalk was used at SEG and LC, whereas at Wanlip and Buddon Wood, our comparative sites, like NB, pebble was used solely. The materials utilised at each site appear to have been totally reliant on the immediate local sources available, as is expected for flint utilisation in this period.

Recortication state

Overall the majority of the flint material from the sites was in a fresh condition with the exception of the pieces from Segsbury as shown in figure 6-2. The fresh material ranged between 65% at Budbury (BUD), 79% at Liddington Castle (LC) and 95% at North Bersted (NB). At Segsbury (SEG) the fresh material only formed 18% of the assemblage, a distinctive variation from the other sites. However, recortication is not necessarily a reflection of a flint assemblage's age and the condition of the Segsbury material is discussed in detail below.

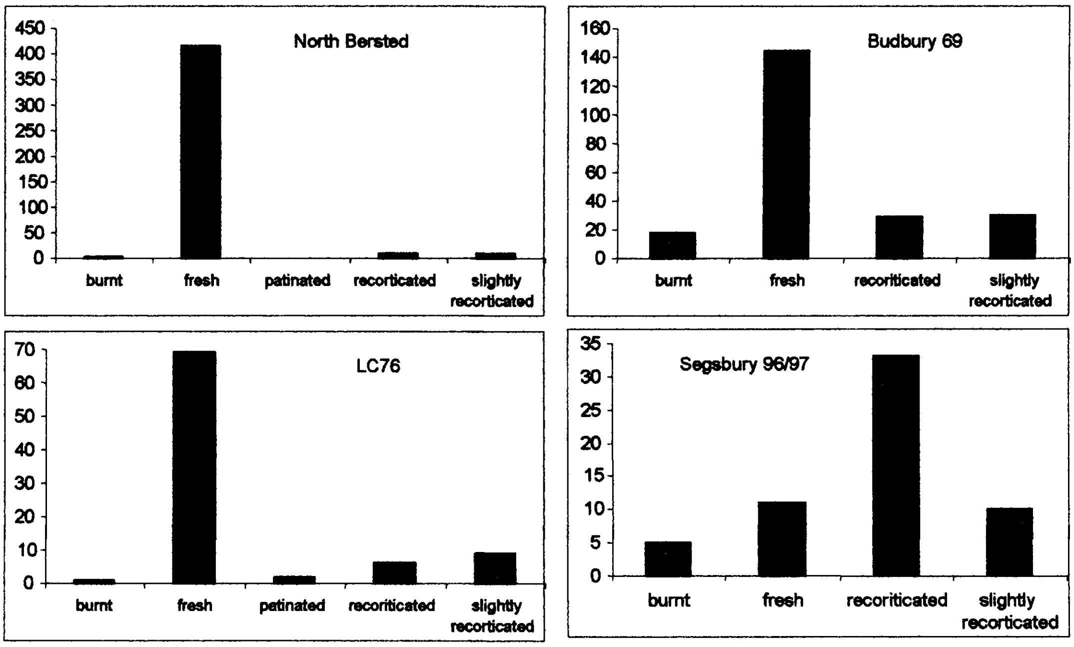

Figure 6-2: Recortication state of flint assemblages analysed.

Recorticated pieces were generally low in number ranging from 2.3% at NB, 7% at LC and 13% at BUD. Again Segsbury stands out as 56% of the pieces were recorticated. Material termed 'slightly recorticated' is classified as such where signs of cortical re-growth are visible, even at different stages, but where the fresh colour of the flint can be determined underneath. Of this type the numbers are again low, only 2% at NB, 10% at LC and 13% at BUD, but reaching 17% at SEG.

It is interesting to note with the exception of Segsbury that despite the low but variable figures for the recorticated and slightly recorticated pieces (2.3-13% and 2-13% respectively) they are balanced between the sites. North Bersted has the lowest amounts at 2.3 and 2% respectively and this may be down to the larger size of the assemblage overall pushing the fresh material recovered to a higher percentage. Liddington Castle, however, has one of the smallest assemblages analysed here and reaches only 7 and 10% respectively, whereas Budbury with over 200 pieces has a balanced figure of 13% for both recorticated and slightly recorticated. Therefore, the size of the assemblage may not be as important as first thought, with the nature of deposition being a decisive factor.

Recortication can take decades or millennia depending on the nature of the deposition as highlighted above. Flint artefacts left to lie on the ground surface will recorticate much faster than those protected from weathering under ground. As such a Mesolithic flake protected by earth can look no older than a Bronze Age piece. As a result, recortication studies are only useful to gauge whether pieces come from sealed or surface deposits, or, to assess the chemical reaction of different post-depositional locations. I have observed whilst looking at various assemblages over time that flint pieces deposited in chalk areas appear to recorticate at a much faster rate than in other sealed deposits. However, this is only a basic observation and thorough research regarding this issue is required before any confidence can be assigned to it. For this reason, the recortication state of these assemblages is only provided for use in possible future analyses.

Table 6-1: Number of pieces recovered from North Bersted by context type and state of material.

Context type	fresh	recorticated	slightly recorticated	patinated	burnt
layer	136	3	2	1	
fill	11				1
ditch fill	2				
feature	173	5	2		
section	1				
unstratified	9				
unknown	86	3	5		

At North Bersted (table 6-1) the majority of the fresh material was recovered from either a layer or a feature, and it is assumed that in the case of NB that they remained *largely* undisturbed and sealed as no information to the contrary was found. The recorticated and slightly recorticated examples interestingly came from the same contexts. Of these, two are bladelets (one retouched) that make up the 21 residual pieces (mainly bladelets) dating to the Mesolithic.

At Segsbury it is difficult to determine whether the recorticated pieces are of an earlier date, especially as overall the assemblage displays the same technological characteristics. It may be fair to suggest that the fully recorticated material belongs to an unspecified period earlier than the rest of the assemblage and this is often located amongst fresher material in the same deposit. Furthermore, the difference between the fresh and slightly recorticated material is negligible, and therefore it is reasonable to suggest they are fairly contemporary, and although time may have played a factor, it is most likely due to different types of depositional environment.

Table 6-2: Context verses recortication state of Segsbury material

Context type	Context (ass. dated pottery)	R	SR	F	B	Type
PIT FILL	1412 (LOWEST) EIA			1	1	1 x flake, 1 x bladelett
	1724 (LOWEST)			1		1 x flake
	(LOWER)		1			1 x broken flake
	1545 (2ND) EIA	1		1		2 x flake
	(2ND) EIA			1		1 x flake
	1539 IA		1			1 x bladelett
	1006 EIA	1		1		1 x chip/chunk, 1 x flake
	1475 (UPPER) IA				1	1 x chip/chunk
	1517 (UPPER) MIA	1				1 x flake
	1266 (TOP) MIA	5				1 x core frag, 1 x thermal flake, 3 x chip/chunk
	1176 (TOP) EIA	6			1	2 x thermal flake, 1 x flake, 1 x retouched flake, 1 x thermal core frag, 2 x chip/chunk
	1697 (TOP) EIA					1 x flake, 1 x thermal flake, 1 x chip/chunk
	TOTAL	14	2	5	3	
DITCH FILL	3008 (TOP) EIA			2		1 x flake, 1 x chip/chunk
RING DITCH FILL	1004 (TOP) MIA	7	2	1		1 x misc retouched flake, 1 x broken flake, 1 x bashed flake, 2 x flake, 1 x thermal flake, 4 x chip/chunk
DITCH FILL	outer hornwork ditch IA/R			1		1 x utilised flake
GULLY FILL	1536	3	1			3 x chip/chunk, 1 x broken flake, 1 x thermal flake
	TOTAL	10	3	4	0	
POSTHOLE FILL	1490 IA	2	1			1 x thermal flake, 1 x chip/chunk, 1 x broken flake
	1427	3	2			1 x thermal core frag, 2 x chip/chunk, 1 x flake, 1 x broken flake
	1704				1	1 x thermal flake
	TOTAL	5	3	0	1	
	chalk in wall rampart	1				1 x chip/chunk
	spoil layer over rampart			2		2 x chip/chunk
	natural feature	1	1			2 x flake
	topsoil	1				1 x retouched core frag

For instance, when the flints are plotted in relation to context type and position within the fill against their recortication state (table 6-2) it seems reasonable to suggest, that in this case, deposition may have more relevance than age. This is supported further when over half of the contexts have been dated with associated pottery to various periods within the Iron Age. It reasonably clear that material which lay either near the surface or in the upper layer of features are fully recorticated, whereas, those pieces near the bottom layers were either fresh or only slightly recorticated. This is particularly visible with material from pits where flints which may have been intentionally deposited and covered quickly, are fresher in general than those which may have fallen into a ditch and left open to the elements. Furthermore, no fresh pieces were recovered from either the posthole fills, where artefacts are potentially more prone to weathering, or the foundation gully [1364], where ploughing severely truncated many features in the area. The post depositional circumstance for both of these situations would result in a faster recortication process than those buried in the pit levels.

It is of note whilst discussing the issue of recortication that the reuse of earlier material should be highlighted. Evidence for this appears to be one of the primary characteristics of Iron Age assemblages. The degree of evidence for recortication varies from very recorticated, to slightly recorticated both of which suggest a time lapse between the working of such pieces. At NB 5% of the material showed evidence that it had come from previously knapped material in the form of flakes knapped from older cores or retouch on earlier pieces. At LC 8% of the material was reused, mainly in the form of retouching earlier flaked pieces with one flake struck from an older core. The largest amount of reused material was present at BUD where the total reached 14%. The majority of this was a result of knapping flakes from old recorticated cores and some core fragments, but there was some evidence for retouching earlier flaked pieces. It is clear then that the collection of earlier surface material did take place and the need for completely new raw nodules was not considered important to the quality of the material. Collection of used surface material is not exclusive to the Iron Age and the reuse of recorticated material has been noted on assemblages from as early as the Early Bronze Age (Edmonds 1995, 175) but it is the proportion within an assemblage related to context association which is important in identifying Iron Age assemblages. The collection of recorticated flakes supports the notion that *any* functional piece was considered useful for knapping or modification and the work involved was minimal. Reused material is highlighted in detail under the relevant sections below.

Primary reduction data

The methodology for all of the analysis discussed here was laid out in chapter 4. Although this account of the methodology ran in a linear way to show how the analysis was carried out, the discussion set out below may vary from this pattern. This is to allow for a better flow and reading of the results, as many points of analysis have a direct bearing on each other. For example, type of percussion has an affect on the shape of a flake removed. An attempt is also made to discuss the results following the knapping process. In addition, it was hoped that flake curvature analysis (chapter 4, 48) would highlight additional data to the bulb of percussion analysis. The fuller curvature of a flake from its proximal end (platform) to its distal (termination) indicates the probable use of a softer hammer (Haden and Hutchings (1989: 245 in Andrefsky 1998, 107). It was hoped that where there is sometimes a fine line between a pronounced or flat bulb of percussion, indicating the use of a hard or soft hammer, flake curvature analysis may help in making a final decision. However, this was abandoned after looking over results and finding they made little sense. The analysis relies on a flake to being a successful and well formed piece as seen in the diagram presenting this methodology (fig. 4-3). However, due to the style of knapping or skill of the knapper, many flakes had bulbs of percussion so large that they obscured the curvature or were so thick and/or twisted that measurement was near impossible. It must be noted, however, that on flakes which could be measured, the larger the bulb and the thicker the flake, the curvature of the flake was reduced considerably, almost flat in some cases. It was therefore considered an inappropriate technique for analysis on crude flake technology, despite the previous point, yet it could potentially give very interesting results for identifying varying factors between earlier flake technologies.

Cores

It was decided in the methodology (chapter 4) to use two classification systems to assess cores for the primary analysis. No attempt was made to create another core typology as there are some perfectly satisfactory classification methodologies already in place. As with many classification methods, however, if used too strictly they can become restrictive in what we can observe and say about an assemblage. Of the two chosen, Clark's core classification system is perhaps one of the most commonly used methods (1960, 216) which is based on observing the direction and placement of flake removals from a core. Ford's (1987, 70) system, however, observes the length breadth ratio of flake removals against the number of flakes removed for blade and blade-like cores, against all other broad flake cores, adding a further two categories for cores which are more like 'bashed lumps' and also core fragments. The latter two are perhaps based upon his experiences of the analysis of Late Bronze Age assemblages (Ford *et al.* 1984) – which this research has drawn upon – where he found that there had previously been no classification for such crude cores and significant quantities of core fragments which are clearly representative of later flint industries. In using both systems we are allowing for a fuller spectrum of the cores handling to be observed.

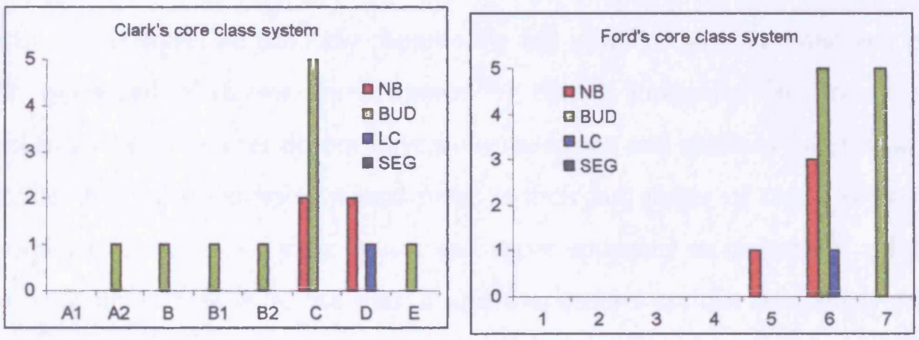

Figure 6-3: Cores from all sites presented first by Clark's system and second by Ford's system.

Figure 6-3 shows that under Clark's system multi-platform cores across the represented sites are the most frequent types, although single, double and keeled platforms are represented at BUD. Ford's system shows with certainty that overall broad flake cores and more importantly 'bashed' cores are the most represented forms, with only one core from NB showing evidence for blade technology (Ford's class 5). The fact that this was minimal is supported by the presence of less than three scars of this type. The latter presents no peculiarities given the small presence of Mesolithic activity represented in the NB assemblage.

In general, at NB cores were utilised on a multi or keeled platform basis but on the whole flake removal was poorly judged, harsh, or inexperienced evidenced by the majority of 'bashed' core types. The only core which did not present a bashed appearance was a core with blade and flake removals, which also had a prepared platform (the only core from the four sites). This was a small core with a max diameter of 32mm and a max flake length of 24mm. The presence of cortex demonstrates that the nodule was probably not large to begin with (also pebble flint). In total, this core is probably part of the small Mesolithic assemblage represented at NB.

At BUD despite half of the cores having multi-platforms, the evidence for other platform types did not suggest higher quality knapping, perhaps from an earlier period, as all cores had a smashed appearance. The high number of core fragments (38) at BUD (number 8 in Ford's core class system, not shown in fig. 6-3) also supports this theory. It is probable that some nodules and cores were 'smashed' to break up/open nodules in an attempt to find more suitable flat platforms, and the cores recovered are those chosen for flake removal.

At LC only one core was found which is representative for an assemblage size of 86, which followed the pattern set out by NB and BUD where one platform was chosen and flakes removed from both sides creating a keeled edge. However this was undertaken using a poor knapping technique. No cores were recovered from SEG.

As with all core analysis we can only observe the last usage of any core, and any previous flake scar types and platforms are destroyed by further knapping. However, the cores recovered from the three sites do not have the appearance and qualities that would suggest that that they had been extensively used prior to their last stages of use. Only two cores were completely removed of their cortex and most appeared to only have a few flakes removed from the nodule from the start; a sign that cores were not completely exhausted before discard. Yet as discussed earlier, evidence for the reuse of material from earlier flint pieces is evident particularly at BUD on cores, core fragments and other pieces. The collection of earlier cores and core fragments for reworking can be seen on two cores, both from BUD by the presence of previous flaking (earlier removals which have begun to recorticate). One core was of Clark's B2 type (two platforms at oblique angles) but this core also showed signs of being used later for other purposes, as down one straight sharp edge was evidence for utilisation. The other core was clearly a reused multi-platform keeled core with no other specific qualities.

On the note of the later reuse of cores, two further examples were observed. One from BUD had a small amount of unspecific retouch along two edges. The remainder was a single platform keeled core from NB which had later been utilised as a scraper.

Cortical presence

The methodology for characterising flint flakes into cortical types is set out in chapter 4, and follows the standard practice of grouping flakes into three categories. Two main points can be discerned from studying the cortical presence on flakes. First, the size of the raw nodule material may be estimated by the number and size of the primary flakes present in an assemblage. Second, the presence of primary flakes is evidence for on site knapping. In transhumant and nomadic societies it is a common pattern to see different elements of knapping activities and produced implements at different 'camp' sites, depending on the location of the raw material and their movement. During the Neolithic and Early Bronze Age when flint was still important as a raw material, quality raw nodules may still have been procured far from the site at times. Such non-local nodules may have been knapped at their source location, either producing required flake blanks or usable cores, lightening the load for transporting back to the site where they could be utilised or modified latter. In earlier flint industries therefore, we can tell a great deal about the primary knapping of assemblages, procurement of raw material and their location to flint sources from the amount and size of cortical flakes. So what do Iron Age assemblages show?

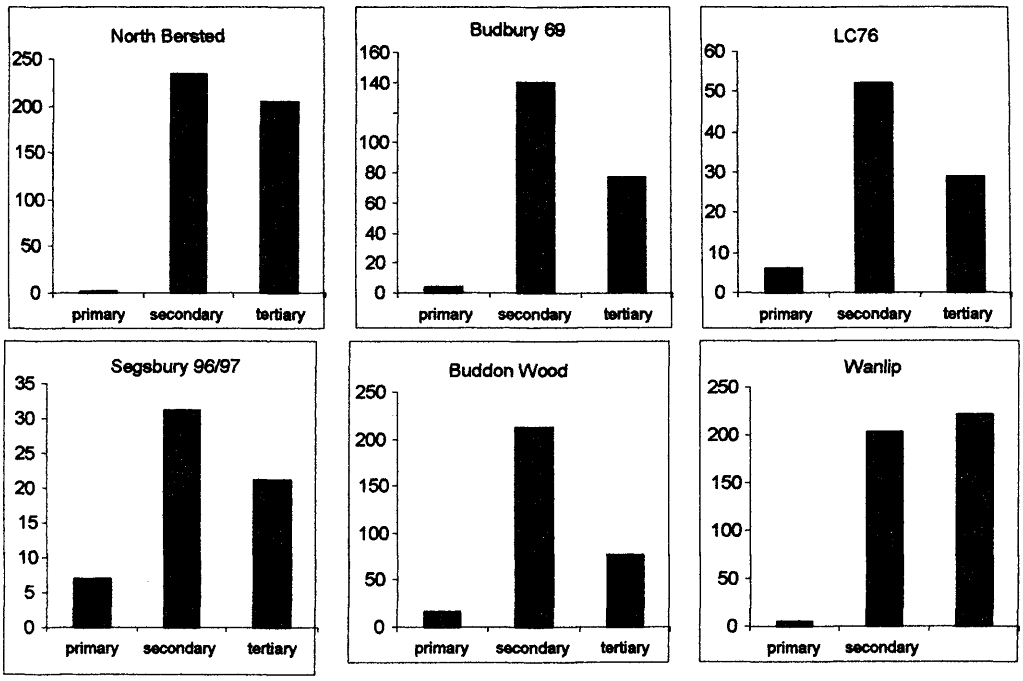

Figure 6-4: Cortical state of flints from the four sites presented alongside Buddon Wood and Wanlip for comparison.

The number of primary flakes present is very low in all cases but there is a presence (fig. 6-4). It does appear that the higher the assemblage numbers the lower the percentage (NB

0.5%, BUD 2%, LC 7%, SEG 12% (Buddon Wood 5%, Wanlip 1%)). It was expected, however, that the number of primary flakes would be low due to pebble flint being the most procured source of material (see above under raw material). Pebble flint procured from either boulder clay or gravel terraces is generally small when compared to chalk flint nodules. As such, the number of flakes required for removal to reach the inner material is greatly reduced. Yet, if evidence is present for primary knapping at all sites why does the percentage reduce when the assemblage size grows?

The main argument for the small number of primary flakes may be due to the remarkable number of secondary flakes from all of the sites. Given that the smaller pebble nodules require fewer primary flakes to be removed we would expect a higher number of secondary flakes overall. This is particularly so at BUD and LC which compares agreeably to Buddon Wood. The number of tertiary flakes at NB does raise questions regarding this suggestion but when compared to Wanlip one consideration may be put forward. There were a number of very small flakes recovered from the Wanlip excavation, primarily due to some areas of sieving (Cooper and Humphrey 1998, 65). Although there is no mention of sieving at NB one cannot rule out the possibility there was none. As a result, the recovery time and methods relating to the visibility of recovering very small flints would vary considerably between excavations. In addition, the maximum retrieval of flints may not depend on the methods employed in excavation. Instead it may depend on the selection by the archaeologists. On sites where there is an abundance of flint, only the 'good pieces' are kept whereas when assemblage numbers are low, everything is retained. Furthermore, a number of very small tertiary flint flakes at Wanlip appeared to be the result of miss-hits when striking a core incorrectly (*ibid.*), we also see a number of small, broad flakes at NB which may be a result of the same process.

In addition, at BUD there are a number of pieces which show evidence for previous knapping. These had begun to recorticate when they were picked up from the surface at a later date and knapped again. This would also reduce the number of primary flakes present in the assemblage if some of the raw material had already been through a previous reduction sequence. This was also evidenced at Buddon Wood, and supported by the presence of a reused core (Humphrey 1998, 70). Furthermore, BUD had a higher than normal number of chunks and core fragments which had been chosen for retouch and utilisation, perhaps again reducing the amount of actual flake removal taking place but certainly affecting the primary reduction stages. It was suggested that the high level of chunks present with cortex at Buddon Wood was the possible result of smashing nodules and taking flakes from pieces with suitable flat platforms (*ibid.*), a similar situation to BUD.

It is clear, however, that there is a consistent pattern throughout these assemblages. Primary flakes generally make up less than 10% of the flakes and secondary flakes dominate the assemblage (NB 53%, BUD 63%, LC 59%, SEG 52% (Buddon Wood 69%, Wanlip 47%)). The requirement and production of secondary flakes is further discussed below when addressing tool types and in Appendix 6 when presenting experimental data. Tertiary flakes do make up a large proportion of each assemblage, but the quantity of these increases per assemblage when either larger parent nodules were chosen for knapping (particularly chalk), or under strict recovery methods (for example sieving), or particularly when knapping techniques appear to have been poor (evidence of many miss hits).

Bulbs of percussion

Bulbs of percussion are an easily detectable source for identifying the type of percussion used in the reduction process of cores and flake production and such analysis has become standard practice over the years. To produce a standard flake the core nodule can be hit directly with a hard hammer, usually another smooth pebble like stone. Once struck the direct force from the hard hammer creates on impact a large bulb at the top of the flake separating it from its core material. The force moves through the material until it reaches its end and a flake is removed. To create a longer flake the force on impact must be softer to allow the force to move slower through the material for a longer length. To do this a softer hammer is chosen, often bone, antler or wood and the gentler impact creates a flatter bulb as the force moves gently through the core material. To create very long blades, indirect percussion is used to soften the impact even further. In this instance a 'punch' is placed on the point where the flake is to be removed and the punch is the directly hit. The latter is a technique characteristic of much earlier industries where flint blades, daggers and sickles were produced. This, however, is only a general guide as the percussion used to produce flakes and hard hammer percussion can at times produce flatter bulbs depending on the material and/or skill of the knapper.

In all four sites examined it is clear that hard hammer percussion was predominately used to produce flakes (fig. 6-5). Overall the percentages are remarkably high, as seen in table 6-3. The figure and table show that a pattern emerges of pronounced bulbs of percussion reaching between 75-90% of their respective assemblages, the only exception to the pattern is Wanlip where only 62.5% of the assemblage was pronounced. Reasons for this are not clear at present as it does not appear that blade production was the main objective (see fig. 6-7 below). Perhaps the raw material used affected how the force moved through the material, or perhaps a 'softer' hard hammer was used. It is clear, however, that the increased presence of flatter bulbs of percussion does not necessarily mean the production of longer flakes.

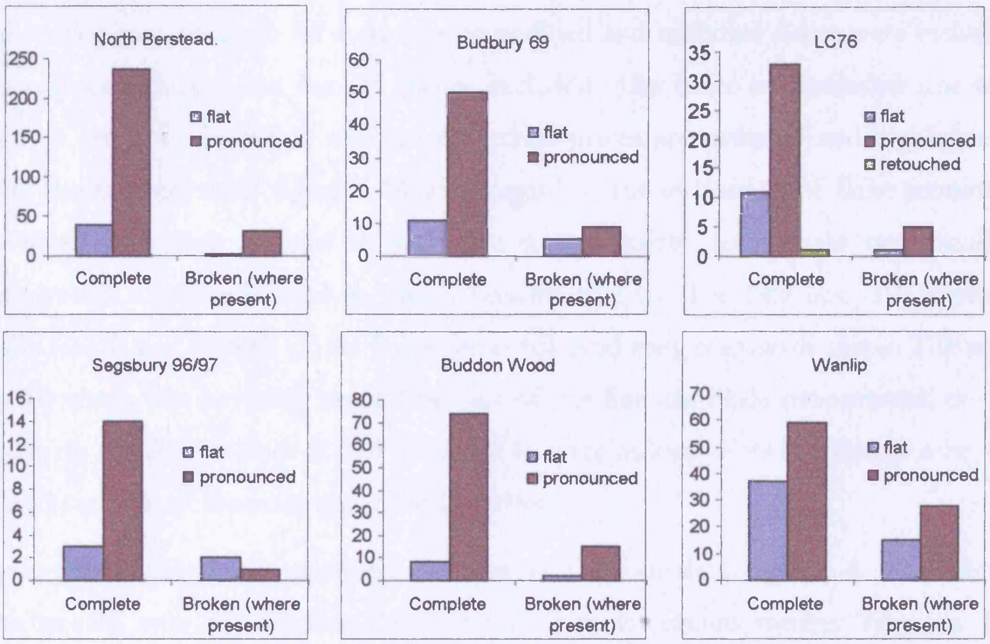

Figure 6-5: Morphology of bulbs of percussion for complete flakes and broken flakes where proximal end intact from all sites including Buddon Wood and Wanlip for comparison.

Table 6-3: Percentage of pronounced bulbs of percussion from sites seen in figure 6-5.

Site	All pieces	Without broken
North Bersted (NB)	86%	85.5%
Budbury (BUD)	79%	82%
Liddington Castle (LC)	75%	82%
Segsbury (SEG)	74.5%	73%
Buddon Wood	90%	90%
Wanlip	62.5%	61.5%

Another notable point about these percentages are that both BUD and LC percentages rose 3% and 7% respectively when the broken pieces were removed from the calculations, whereas BUD remained the same and in all three remaining cases the figure only dropped between 0.5-1.5%. Some may suggest that using broken flakes where the proximal end is present creates too variable a set of conditions for any firm analysis to take place as their presence also depends on post deposition breakage and recovery of the assemblages. The remarkable similarity, however, of percentage variance between using all flakes and removing broken pieces (± 0.5-7%) between sites *does* suggest the possibility of pre-deposition breakage of a similar nature, whether through use or deliberate breaking and, as a result, incorporating broken flakes in analysis seems potentially valuable.

Length & breadth

General measurements

The length/breadth measurements plotted on the graphs seen in figure 6-6 were derived using a basic methodology. All complete unmodified and modified flakes were included in the measurements and any broken pieces excluded. The latter are excluded due to the unknown extent of breakage, whereas retouched pieces are included and highlighted on similar charts in the later figure 6-14 with regard to the discussion of flake termination. Two lines have been crossed through the scatter graphs to indicate two significant measurements commonly used in length/breadth analysis. The first line (1:1) represents that the length and breadth of the flakes are equal producing a squarish shape. The second line (2:1) states that anything beyond the left of this line has blade proportions; the basis for terming any flake a blade is that its length is twice as long as its breadth (Bordes 1961, 6). Small versions of these are classed as bladelets.

Despite the variations in assemblage size between the four sites, figure 6-6 shows that the length:breadth ratio of complete flakes and flake tools remains similar. Very few flakes reach blade proportions, the majority being from NB which can be explained by the presence of nineteen bladelets and eight blades which make up part of the Mesolithic presence on the site. Again very few blade/bladelets are present at either BUD or LC and only a few reach blade-like proportions (those that do are near to the 2:1 line). There are a few more blade-like flakes at NB, but this is to be expected if there is also an earlier flint industry present within in the assemblage.

It was intended to experiment with the NB mixed assemblage and separate any flints directly associated with Beaker material to test the theory that it is possible to view the development of flake morphology over time. If we could separate the flakes using this method we should see a small blade/bladelet collection of flakes relating to the Mesolithic, a second set of shorter but still blade-like flakes representing the Beaker era, and lastly a number of short, squat flakes with a high proportion showing breadth larger than their length. The intention to 'pull away' the pieces associated with the Beaker material was stopped in its tracks when the paper archive (where detailed context and material associations were recorded) could not be found despite intensive searching of its possible locations though would comprise a valuable future exercise.

The most striking factor present in all four sites is not just the number of flakes with a ratio of 1:1, but the high proportion which are broader than their length. This is most apparent at NB and BUD and one would be surprised to see such a large proportion of very broad flakes from a predominately Beaker assemblage, as suggested to be the case at NB (Bedwin and Pitts 1978, 303). The fact that BUD, LC and SEG do not have any evidence for earlier material directly from the site can only support the conclusion that very short and broad flakes seem to be a consistent pattern in Iron Age flake morphology and that a good part of the NB collection is probably Iron Age too.

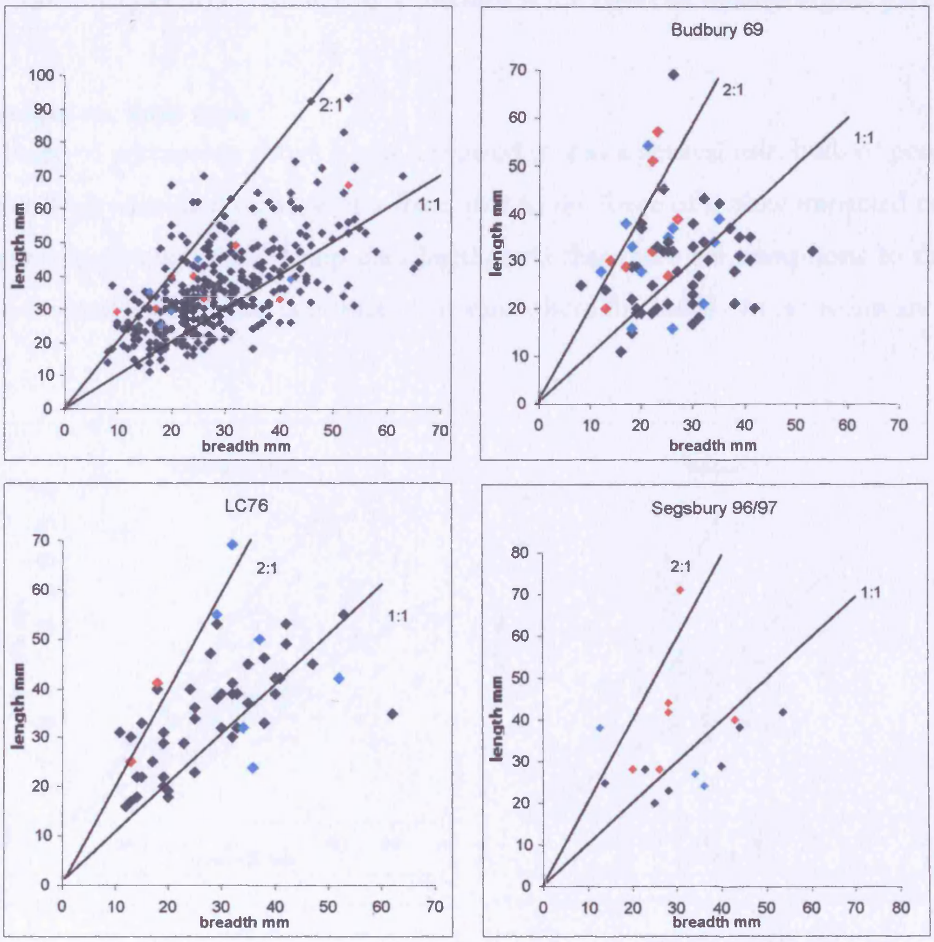

Figure 6-6: Length breadth ratio of complete flakes and flake tools from North Bersted, Budbury, Liddington Castle and Segsbury showing recortication state: dark blue – fresh; light blue – slightly recorticated; red – recorticated.

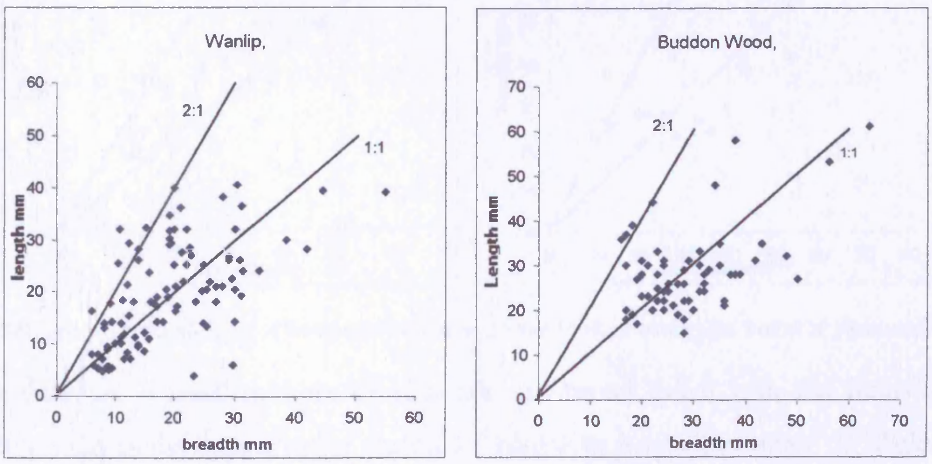

Figure 6-7: Length breadth ratio of complete flakes and flake tools from Wanlip and Buddon Wood, both in Leicestershire.

A further comparison can be made to support this pattern of short, squat and very broad flakes when viewing length breadth ratios of flakes from preliminary studies of Wanlip and Buddon Wood, (fig. 6-7). Again we see very few flakes that reach blade proportions with the majority falling around the 1:1 ratio or below. As noted earlier the number of very small flakes (below 10x10mm) in the Wanlip collection is the result of wet sieving on parts of the site.

Flake shape vs. bulb type

Under bulbs of percussion above it was discussed that as a general rule, bulb of percussion types usually determine the shape of a flake, due to the force of a blow impacted onto the core material, although the Wanlip data highlighted that there are exceptions to this rule. Figure 6-8 visualises how this is normally the case where flat bulbs of percussion are shown in red.

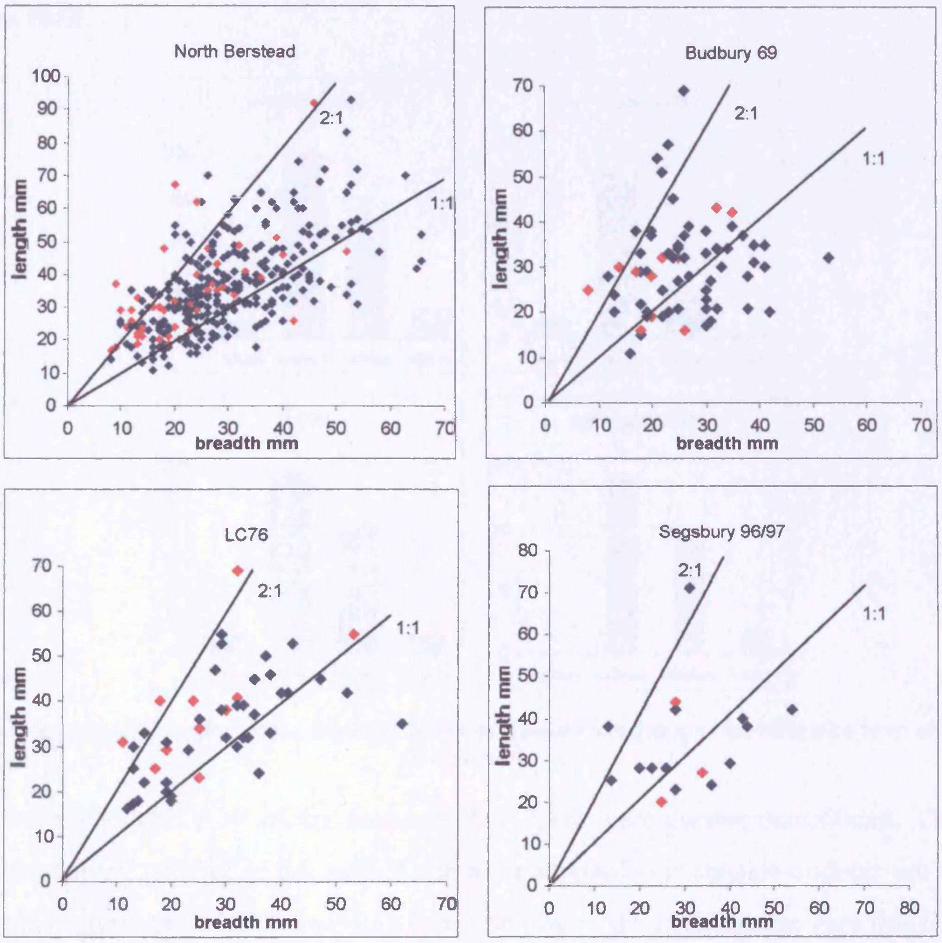

Figure 6-8: Length breadth ratio of complete flakes and flake tools showing flat bulbs of percussion in red.

At NB there are a small number of squarish and broad flakes with flat bulbs, but the majority of flat bulbs appear on a cluster of bladelets, a small number of blades and a number of small blade/bladelet-like flakes. Both BUD and LC produced a dispersed number of flat bulbs but with a lean towards blade-like and blade shaped flakes, particularly at LC. Segsbury is the exception here but the number of flakes is perhaps too small in this case to make any predetermined judgements. However, the fact that only two pieces reach blade proportions with one very close, may suggest that it is similar to Wanlip regarding its percussion techniques and flake shapes produced.

Flake size

The overall size of flakes and grouping of flakes is largely dependent on the raw material used to begin with. As set out in chapter 4 this methodology requires that a flake can sit comfortably into a set diameter of a circle such as <40mm. Measuring the length and breadth of flakes gives us an idea of the type of flakes within the assemblage, such as blades, but does not allow for the peculiar shaping of some flakes that may alter the group size of a flake. For instance a flake which measures 38mm by 35mm may not always fit into a <40mm circle if the flake has an irregular shape and as such would have to classed as a <60mm flake.

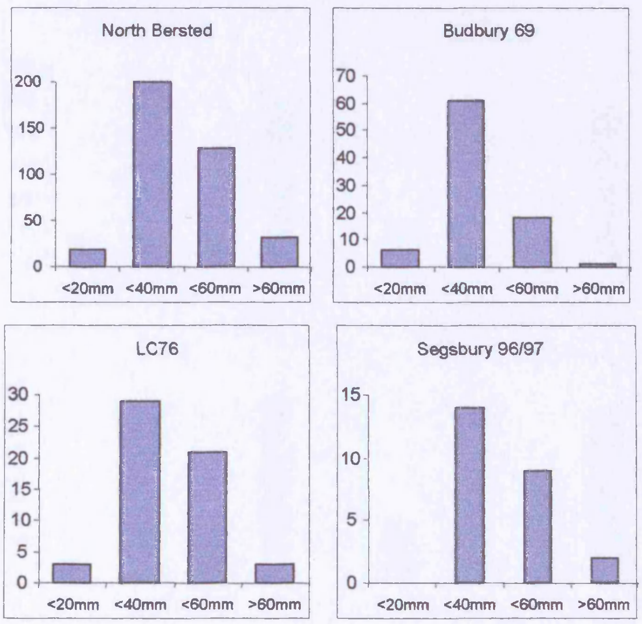

Figure 6-9: All complete (and near complete) flakes and flake tools grouped be flake size from each site presented.

Figure 6-9 shows that at all of the sites very few flakes were greater than 60mm. This may be circumstantial, relating to the size of the material used – if smaller nodules are utilised then it stands to reason that fewer large flakes will be made. Incidentally, very few flakes of less than 20mm were recovered, which may be a result of the recovery methods, but flakes of this size are not practical for many tool types and as such are not a requirement of the knapping process. Flakes of this size may be required for specific uses, such as thumbnail scrapers, but this was not apparent in any of the assemblages analysed. Flakes fell predominately into the less than 40mm group, followed closely by less than 60mm group in all cases except BUD. Although the size of the raw material does have a direct impact on the results of flake size, the predominance of the <40mm group does fit nicely with the short squat flake morphology presented for the length breadth data.

Platform type

There is very little evidence from all of the assemblages for the preparation of striking platforms before removing a flake (fig. 6-10). There are very few complex platforms (4-11%) to suggest core preparation and a sequenced removal of flakes. Furthermore, many of the abraded platforms (9-17%) appear to be the result of crushing the core without successfully removing a flake rather than from rubbing the edge of a platform to crush the edge with the hammerstone. Also, the majority of these do not have complex facets beneath the abrasion as suggested by Andrefsky (1998, 96). As such it is suggested here that the abraded platforms be classed more as 'bashed' platforms and not confused with abrasion that is part of a core preparation process.

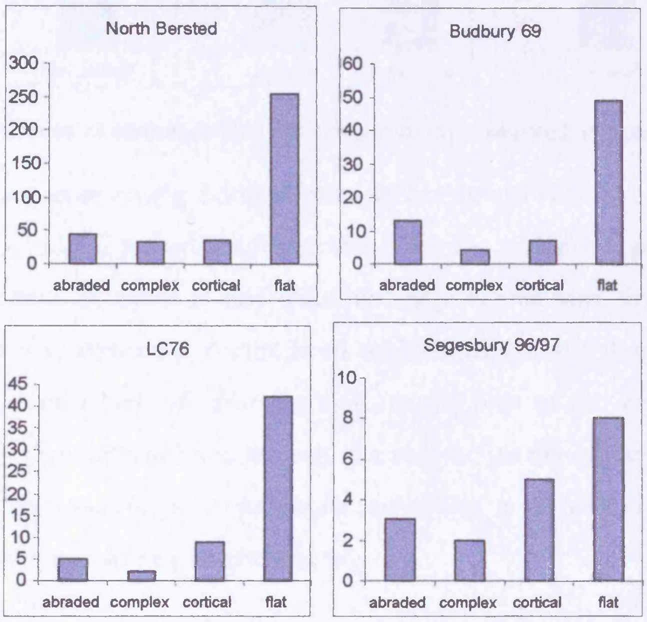

Figure 6-10: Striking platform types of all complete and broken (where present) flakes and tools for each site presented.

Platforms with flat unfaceted surfaces dominate all assemblages and are generally the result of unidirectional core processing from an unfaceted platform, from a single negative flake bed (Andrefsky 1998, 93), or from naturally fractured surfaces (Herne 1991, 35) which follow the core classes (described later) suggesting that platforms appear to have been chosen on any suitable flat surface. Segsbury has the lowest percentage of flat platforms at 44%, the remainder of assemblages fall between 67-72%. Segsbury's lower figure may be a direct result of the very high level of cortical platforms present at 28%. In general, all four of the assemblages have a significant proportion of cortical butts (striking platforms) ranging from 10-16% (fig. 6-10). Compared to our comparison assemblages these figures are not very high but are still noteworthy. At Buddon Wood cortical butts made up 44% of the assemblage whereas Wanlip makes a similar comparison to SEG at 22% (fig. 6-11).

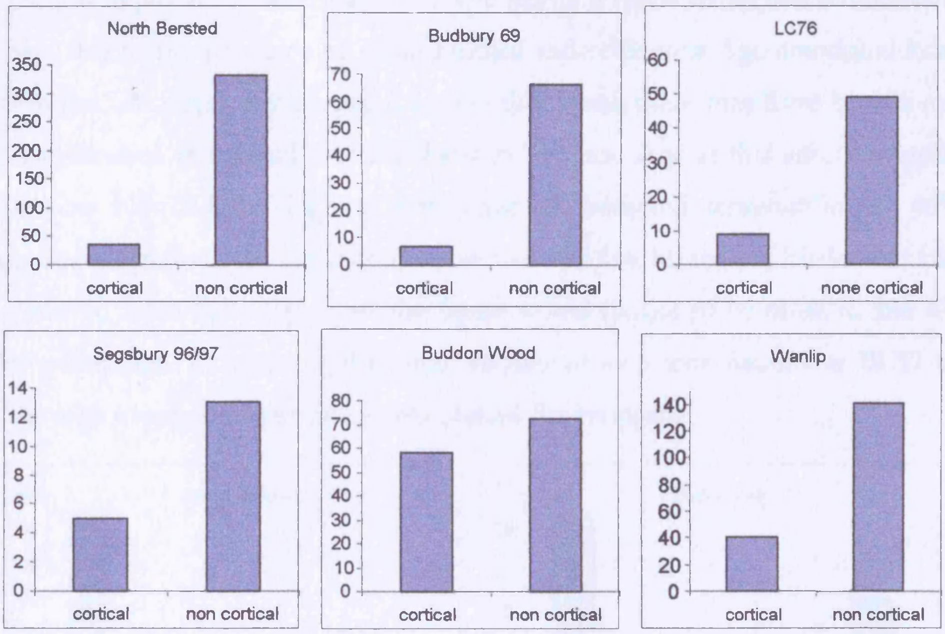

Figure 6-11: Presence of cortical striking platforms from the presented and comparative sites.

The interesting point concerning cortical butts is not to do with the varying amount – although NB, BUD and LC are quite comparable – but the significant presence at each site and why. The presence of these in any quantity suggests that very little preparation and effort was given over to removing cortex from usable flakes; could there be a valid reason behind this rather than a lack of effort or skill on the part of the knapper? To give an example, the amount of cortical butts at each site may be totally influenced by the type of implements and functions used in particular activities; a suggestion which is further discussed under tool types and experimentation.

Termination

The termination of a flake can be a useful indicator in determining whether a flake was removed from a core with control and precision (see methodology chapter 4, 50-51). In all of the four cases presented, less than half of the flakes in each assemblage that could be measured for such analysis had feathered terminations (see fig. 6-12 and table 6-4), LC having the lowest figure of 35%. Consequently, less than half of each assemblage flakes were removed without care, limited control or precision. Between 5-15% of the terminations had received retouch and as such their actual termination type was unobtainable, however, it was noticed on some retouched pieces (mainly of scraper form) that on the basis of the thickness of the flakes and the dorsal scarring some were potentially hinge or step terminations. Therefore, evidence shows that at least half of the flakes from each assemblage were produced under poor flaking technology or skill. The lowest figure of 39% at NB appears to be the direct result of a higher amount of retouched pieces present opposed to more feathered. The higher level of retouched terminations may be, in part, due to the presence of some residual earlier Bronze Age associated knapping, other than the few diagnostic pieces. On the other hand, there may have been a need for more miscellaneous retouched pieces utilised in the Iron Age at this site. Incidentally, of the four sites NB had the highest percentage of feathered terminations at 46% and although this is still less than half, this does include the few Mesolithic blades and bladelets and if removed from the calculations the figure would reduce to be more in line with the Budbury percentage. In addition, the large amount of step terminations at BUD may be due to the high number of core fragments utilised for knapping.

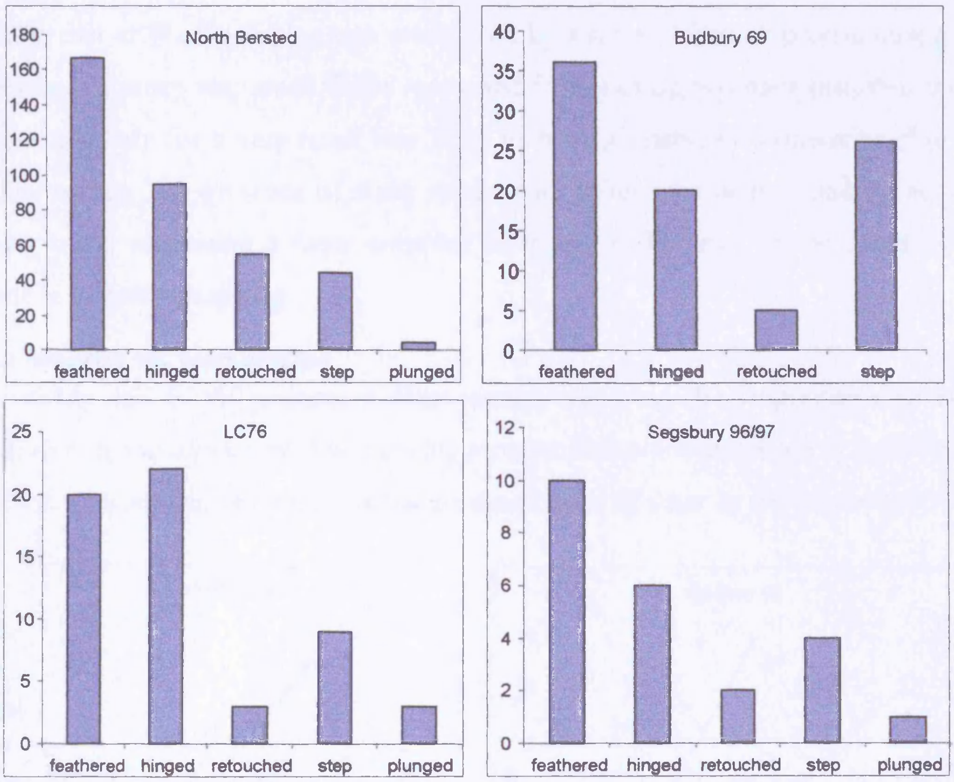

Figure 6-12: Termination of complete and broken flakes (where present) and flake tools from the four sites presented

Table 6-4: Percentage of all feathered and retouched terminations against the amalgamated hinge, step and plunged terminations from the presented and comparison sites.

Site	Feathered %	Retouched %	other %
North Bersted	46	15	39
Budbury	41	6	53
Liddington Castle	35	5	60
Segsbury	44	9	47
Buddon Wood	62	-	38
Wanlip	87	-	13

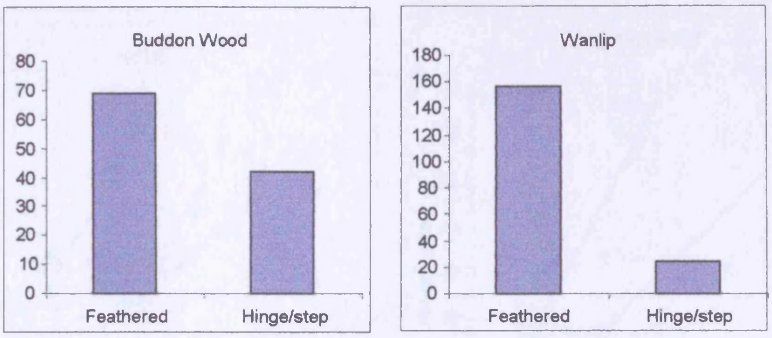

Figure 6-13: Termination of complete and broken flakes (where present) and flake tools from the two comparative sites in Leicestershire.

Preliminary figures from earlier research on Buddon Wood and Wanlip (fig. 6-14) do not include retouched material and poor termination types were not separated, but data is still useful as a comparison. Buddon Wood presents the most similarities with 38% of the assemblage showing less controlled flaking, whereas at Wanlip only 13% is represented. It is possible that at Wanlip flaking was carried out by a more skilled or precise knapper, but the presence of many very small flakes recovered from sieving *may* have distorted the data, as it is more likely for a very small thin flake to have a feathered termination due to it's 'chip' like nature. The presence of many small 'chip' flakes may be the result of secondary knapping waste suggesting a more complex knapping technology or the result of many miss-hits in primary knapping.

Length breadth vs. termination

Figures 6-14a and 6-14b presents a clear picture regarding the length/breadth ratio of flakes against termination type. Poor quality terminations are represented in both flake and a blade forms, however, there is a general predominance of these in shorter, broader flakes.

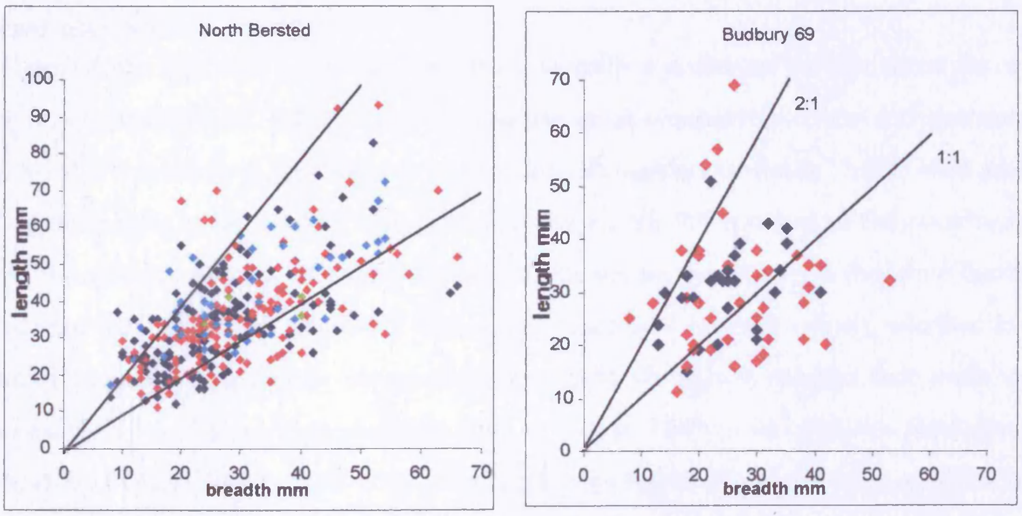

Figure 6-14a: Length breadth against termination type for NB and BUD; dark blue – feathered; red – hinge or step; green – plunged; light blue - retouched.

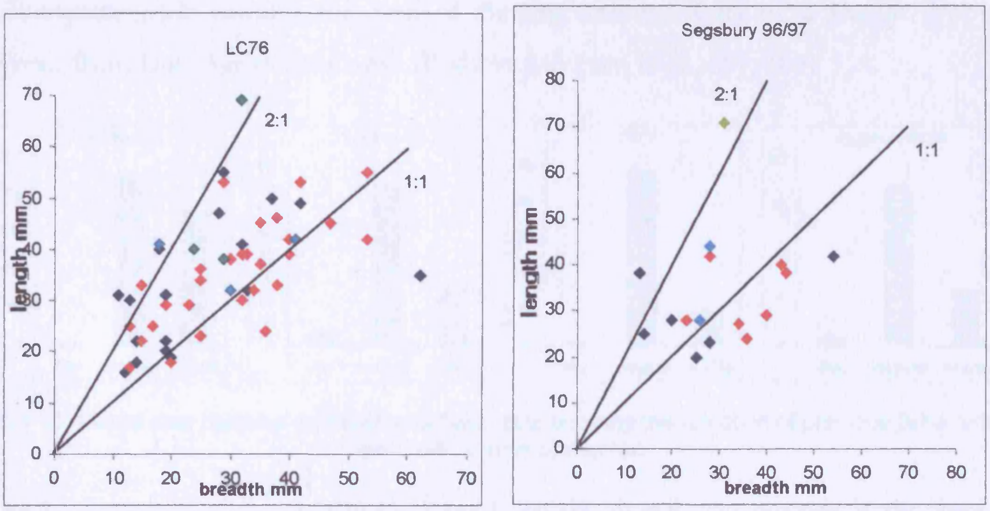

Figure 6-14b: Length breadth against termination type for LC and SEG; dark blue – feathered; red – hinge or step; green – plunged; light blue - retouched.

Dorsal scars

Dorsal flake scar analysis can be a useful tool in identifying core reduction processes when cores are absent or low in assemblages and for identifying any flake types that are not present in the recovered assemblage. Any patterns surfacing in this analysis will aid in the classification of Iron Age assemblages but hopefully also help to identify residual material present in the assemblages. However, two points should be of concern when viewing the data. First, the latter point is subject to the difficulties encounted when earlier material has been deliberately collected for reworking. Second, the type of flake scar present is of course subject to truncation laterally or vertically of another flake scar and as such it is at times difficult to identify whether a blade/bladelet shaped scar is true or truncated. It is hoped that the position of scars can help reduce this problem.

Dorsal scar pattern (DSP)

Analysis of the direction of dorsal scars does identify a recurrent pattern throughout the four sites with BUD, LC and SEG producing the most comparable charts and percentages (fig. 6-15). Over the four sites there is notably a small number of flakes (1-6%) with scars at 90° degree angles to each other. This reflects evidence for 90° rotation of the core showing a well thought-out process of core reduction. Evidence for parallel scars (negative facets on the dorsal face which are parallel to the struck flake and to each other), whether in the same or opposite direction, is represented frequently enough to suggest that some cores were either worked along one platform edge or turned 180° to an opposite platform: NB 43%, BUD 24%, LC 17%, SEG 25%. The larger proportion of parallel scars at NB is most probably due to the production of the bladelets diagnostic of Mesolithic activity and possibly a few Early Bronze Age pieces that are part of the Beaker activity in the area of Trench C. In saying this, it should be noted that although Bedwin and Pitts say about $^{1}/_{3}$ of the flint came from around the area of Beaker activity, flints of a similar type were recovered from Iron Age deposits too (Bedwin and Pitts 1978, 297, 304).

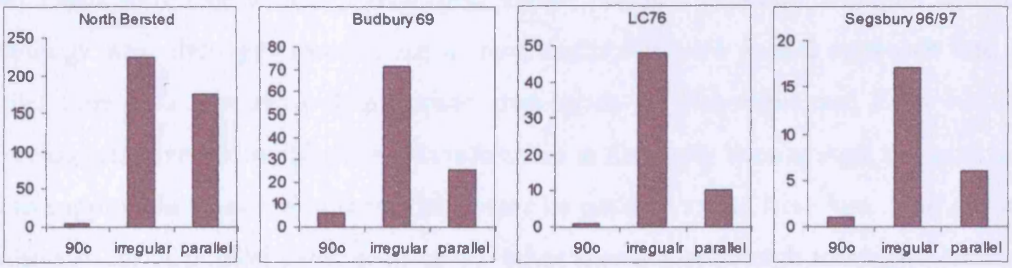

Figure 6-15: Dorsal scar patterns on flakes and flake tools showing the direction of previous flake removals from the four sites presented.

The most distinctive characteristic to come from the dorsal scar analysis is the very high proportion of flakes with irregular dorsal scars (NB 56%, BUD 70%, LC 81%, SEG 71%). This shows distinctly that on the whole cores were rotated randomly, removing flakes from suitable platforms as they appeared. If we excluded NB we can say that roughly 70-80% of an Iron Age assemblage should produce flakes with irregular flake scar patterns. Nevertheless we have not yet successfully identified how much of the NB assemblage is Iron Age. If we could pull the assemblage apart successfully and isolate the Iron Age pieces would a similar percentage arise for dorsal scar patterns at NB?

With the NB paper archive missing we are left in any attempt to pull the assemblages apart with flint analysis alone. So far the amalgamation of length breadth measurements, bulb of percussion analysis and core scars has helped to identify a few very diagnostic earlier pieces, but it is very difficult to assess those pieces which fall into the 'no mans land' of flint assemblages, particularly as the diminution of core reduction technology can be seen as far back as the Early Bronze Age (Edmonds 1995, 176). Dorsal scar patterning may be the answer when used in conjunction with the other forms of analysis. Figure 6-16 shows the same information as figure 6-15 but this time it has been divided further into the morphology of the dorsal scar type (DST) against their direction of removal.

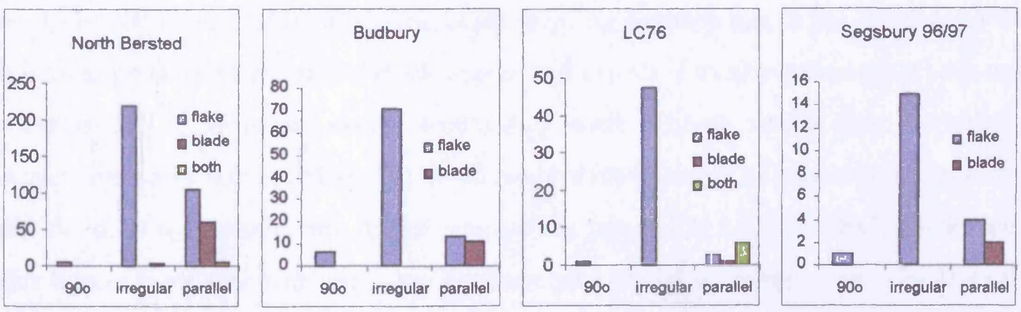

Figure 6-16: Morphology of flake scars (DST) against the direction of their removal (DSP) from the four sites presented.

It is clear that all blade/bladelet flake scars were removed using a parallel technique of core reduction. This goes some way to answering the earlier question of whether the blade styled flakes were true forms or truncated. Given that is it generally accepted that blade technology was often produced using a more controlled and formal approach and that parallel scars on cores are a characteristic particularly of Mesolithic and Early Neolithic technology and even some blade production cores in the Early Bronze Age, this goes some way to support the notion that these flakes may be residual to the Iron Age. The *very* small numbers (<10) of parallel blade scars at the other sites is not enough to suggest there was any significant blade technology present and in these instances, could *possibly* be due to vertical truncation.

Given that NB is the only site with known earlier activity, if we hypothetically assume that the flakes with parallel blade scars are earlier and remove them, how will this affect our irregular flake scar percentage at this site? The irregular flake scar figure increases to 65%, still lower than the other sites (BUD, LC, SEG) but closer to their general 70-80%, and the parallel figure at NB is reduced to 33%. Again this figure is still higher than the 17-25% mark but there are a larger proportion of parallel flake scars at NB than the other sites too. Although removing these pieces under the assumption that they are earlier is only hypothetical, and it is reasonable to assume that any of the other pieces could be from the Early Bronze Age too, it does suggest that with further research, dorsal scar patterning may become a significant factor in separating earlier flint assemblages from Iron Age ones.

Dorsal scar value (DSV)

In addition to dorsal scar patterning and flake type the number of dorsal scars can be valued and analysed. The methodology is detailed in chapter 4 (page 51-52) but to summarise 0 equals a primary flake and 3 equals a flake with three or more dorsal scars. This analysis tells us something of the stage at which the flake was removed from the core. Figure 6-17 shows that from all four sites there are very few flakes with a value of 0 which of course matches the data for primary flakes (fig. 6-4). For the values between one and three, again NB stands out as the irregularity showing a steady rise in the number of flakes with increasing dorsal flake scars which one would expect if working through a core until it was exhausted, or from an earlier technology with a more varied flake morphology. However, the cores recovered from NB do not reflect this type of patterning (fig. 6-3) and would fit more tightly with the dorsal scar values for BUD, LC and SEG, where we see similar figures for flakes with one, two or three plus dorsal scars removed. The later three sites support the core data in arguing that: flakes were removed randomly; that cores were utilised only partially given the amount of core cortex remaining and the number of secondary flakes present; that the size of the raw material was generally small given the latter points.

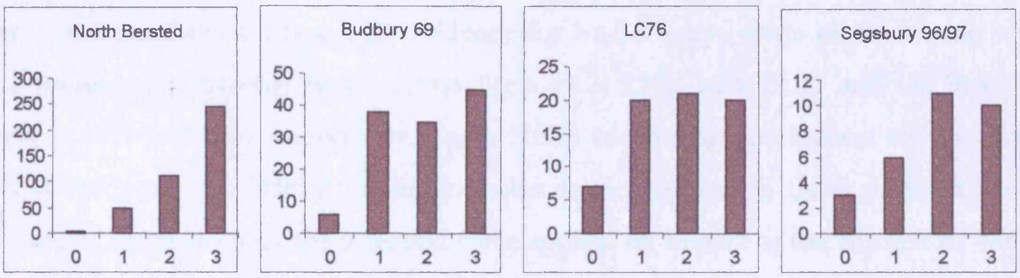

Figure 6-17: Dorsal scar values for flakes and flake tools from the four sites presented.

Putting this data together with that of dorsal scar patterning and flake type, it is suggested that the assumed earlier flakes from NB were not all necessarily knapped at the site but instead much of the earlier assemblage was brought to the site in flake form and that the later Iron Age assemblage is reflected by the rest of the flakes matching core data. Considering this, the dorsal value data for NB would look more like that presented for the other three sites.

Additional factors concerning poor primary knapping

Negative hinges

Little can be said about the data presented with respect to evidence for hinged flakes represented by negative hinges on any flint piece (fig. 6-18), other than the fact that they are generally not present. A notable number of pieces do have one negative hinge present with a few pieces showing multiple negative hinges. This is clear evidence that many pieces were removed with little control supporting the termination data for flakes. Surprisingly, NB has the greatest number present (24%) regardless of its larger assemblage size, followed closely by LC at 20%. Given that NB had the lowest number of hinged flakes from the termination data this is something of an irregularity which at present cannot be explained. None were found on pieces from SEG, but the single piece from BUD with six negative hinges on one piece was a core; evidence for the less controlled knapping taking place at the site and comparable to the picture yielded by the flake hinged terminations.

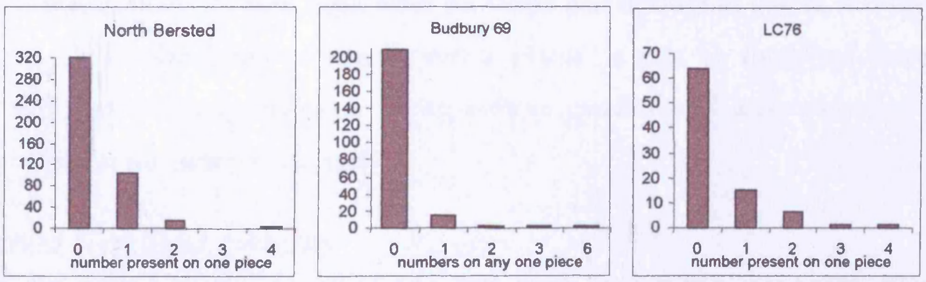

Figure 6-18: The number of negative hinges present on any type of flint piece from three of the presented sites.

Bulbar scars

Bulbar scars are the product of very harsh impact when striking a core for flake removal which results in a very thin piece of flint which tears away from the bulb of percussion. There are a number of flakes with evidence for bulbar scars, some pieces having up to three present. The average figure across the sites is 22%, with BUD and LC being the lowest at 14% and 13% respectively. Again NB is surprisingly the highest with a notable 38%. Bulbar scars are difficult criteria to assess as they appear on flakes from all periods and have as much do with the intended force applied on impact as the amount of control excerted. Therefore, at this stage the amount present is recorded for each site along with a calculated average in a hope that future analysis will provide corresponding data.

Rings of percussion & Incipient cones

The presence of rings of percussion and incipient cones, both of which are evidence for a lack of control in flake removal (for example, too much pressure applied at percussion and sometimes from using a blunt hammer), are not as high as one would expect (table 6-5). In general it has been expected that extreme signs of poor knapping control would be evident in Iron Age flint assemblages, yet although we have evidence for an even greater number of very broad short flakes, higher instances of poor terminations and irregular dorsal scars etc. the most extreme signs of shoddy knapping resulting in an almost 'bashed' flake assemblage are not that evident.

Table 6-5: Amount of pieces from the four sites presented showing evidence uncontrolled knapping techniques resulting in incipient cones and rings of percussion.

Site	incipient cones	Rings of percussion	Both
North Bersted	12 (3%)	35 (8%)	12 (3%)
Budbury	8 (3%)	1 (1%)	-
Liddington Castle	2 (2%)	1 (1%)	-
Segsbury	2 (3%)	1 (2%)	-

Despite my own expectations that the figure would be higher, it is perhaps more surprising to those analysts who have maintained that any form of flint knapping in the Iron Age would be in the form of *ad hoc* and 'bash-and-see' technology (*i.e.* Saville 1981). Yet again, NB has a significantly higher amount of evidence for such knapping techniques, but analysis shows that all of these signs were on flakes and retouched pieces and none were present on blade related and potentially earlier pieces. It may be suggested therefore, at least at NB that the knappers were perhaps more carefree and less controlled in their technique than at the other three sites.

Retouched & utilised material

Despite the limited variety of retouched and used implements recovered from these assemblages there are a notable number present at each site. Table 6-6 presents the data for retouched and unmodified utilised implements in a simplified format. It does not show a breakdown of broken pieces or of implement types such as scraper variety. Information of this kind can be found in the appendix (CD Appendix 1).

Table 6-6: A simplified table of the miscellaneous retouched pieces and implement types (complete and broken) observed from the four sites presented against the comparison sites of Buddon Wood and Wanlip, Leicestershire – main reoccurring implement types highlighted in red.

Flake tool description	NB	BUD	LC	SEG	Buddon Wood	Wanlip
miscellaneous retouched flake	54	8	2	2	4	26
miscellaneous retouched blade	4					3
miscellaneous retouched bladelett	9					
miscellaneous retouched core fragment /chunk		3		1	8	
scraper	38	2	1		4	11
scraper/ point	3	1	2		2	
scraper / cutting flake	5				1	
core / scraper	1					
knife / scraper	1					
point	18	8	8		11	7
point / cutting flake	1		1			
bifacially retouched point	1					
cutting flake	12	5	4		3	6
cutting bladelet	1					
cutting flake/ retouched	3					
knife	1					
knife/ cutting flake	1					
multi function tool	1					
knotched / spurred flake	1				2	1
serrated flake	2					1
serrated blade						1
arrowhead	1					1
microlith	1					1
gun flint	1					
fabricator		1			1	
chopper					2	
grinding tool					4	

Two points which are immediately apparent and not wholly unexpected are, first that diagnostic implements of any relevance are limited to scrapers, points (piercers/awls/borers) and cutting flakes along with a high number of miscellaneous retouched pieces (highlighted in red). Second, particular diagnostic pieces of earlier periods such as arrowheads and microliths were only found at NB, a site known to have earlier flint activity present and Wanlip. These were limited to a single barb and tang arrowhead, a single microlith and possibly two serrated flakes at NB. In addition, of the scrapers at NB only six can be identified with any certainty as Late Neolithic-Early Bronze Age in date. At Wanlip, only one arrowhead and one microlith were recovered from stratified contexts but earlier flint was present at the site in the unstratified ploughed contexts (Cooper and Humphrey 1998).

The proportion of retouched and used implements is significant at each site. The highest percentage was recovered from NB where a remarkable 41% of the assemblage was identified. This is much higher than Bedwin and Pitts figure of 21% (1978, 303) but it is believed that many pieces such as cutting flakes and some undiagnostic points and scrapers were not identified in their analysis. The present identification of such crude pieces has been the result of viewing a number of Iron Age related flint assemblages and observing patterns in the crude and often limited modification on such pieces. The figure increases to 43% with the inclusion of miscellaneous utilised pieces (table 6-7) showing that almost half of the assemblage was utilised. This is a surprisingly large proportion and two points are suggested to make sense of this. First, at NB we are clearly dealing with two, if not three, assemblages; a small Mesolithic presence, a small and as yet unclarified Late Neolithic/Early Bronze Age presence and a larger Iron Age assemblage. There are clearly retouched and used pieces from all three periods as seen in the presence of diagnostic pieces such as retouched and utilised blades/bladelets. Second, the number of scrapers, points, cutting flakes and many of the 54 retouched miscellaneous and the 23 utilised flakes suggests that flint is used to a marked degree in the Iron Age at this site.

The figure for the other sites are reasonably balanced but although not as high as NB are still notable. At LC the figure is as high as 20% (25% with miscellaneous utilisation) primarily consisting of points and cutting flakes. At BUD similar forms make up the 11% (17%) of pieces with a number of miscellaneously retouched flakes and chunks. The lowest figure at SEG with 5% (7%) is due to the absence of diagnostic implements and only two miscellaneous retouched flakes and one chunk. Buddon Wood and Wanlip compare well with the pattern with 13% from each site. All of these figures give an average of 13% (17% including NB mixed assemblage) and 14% (19%) including the miscellaneous utilised pieces. Again at Wanlip and Buddon Wood the main tool types recovered are the same as the four sites presented.

Table 6-7: Additional miscellaneous utilised pieces from the four sites presented.

Miscellaneous utilisation	NB	BUD	LC	SEG	Buddon Wood	Wanlip
utilised flake	23	6	3	1	none recorded	
utilised blade	2					
utilised bladelet	2	1	1			
utilised core fragment	1	1				
utilised thermal flake	1	1				

Miscellaneous pieces

Across the sites there does not appear to be any distinctive patterning to the position of modification on flakes, and retouch was recorded on both ventral and distal surfaces on all edges. Only at NB does there appear to be a slight predominance of retouch on dorsal surfaces but no further observations can be expressed. Overall it seems clear that modification was made wherever necessary to the final utilisation of each individual piece.

The modification in most cases did appear to facilitate the grip of the implement rather than to improve the function required. As a result the modification was minimal and in some cases could easily have been missed if thorough observation was not carried out.

Implements

Discussion is limited here to those which appear to have seen predominant usage in the Iron Age. Furthermore, the implements discussed here follow the same forms identified in later Bronze Age assemblages (Chapter 2) with the addition of multi-functional implements which are suggested to be a tool type rather than miscellaneous retouched.

Scrapers

Scrapers appear overall to be the single most utilised implement still in use in the Iron Age, not a surprising fact given the endurance of the implement type throughout prehistory. Regardless of the large number recovered at NB (47) and the 7 and 11 from Buddon Wood and Wanlip respectively, only 3 were recovered from BUD and 2 from LC. Although the latter produced few scrapers compared to the majority of sites (see table 5-1 chapter 5), they did have increased numbers of points present (see below) and it is suggested that whatever tasks flint was used for at BUD and LC did not require a scraping function.

Scrapers are frequently described by their appearance often using Clark's classification (1960, 217), and although still a very useful system, many crude or late Bronze and Iron Age scrapers cannot be placed comfortably within it. Fasham and Ross' system of classification for scrapers into two groups is based on their type of retouch, simply distinguishing those which have been produced with a pre-conceived flake shape in mind followed by controlled retouch and those which are made on thick pieces with rough retouch (Fasham and Ross 1978, 61). This scheme was chosen here to attempt to identify those scrapers which cannot be classified under the general diagnostic forms due to their crude formation. The main problem with this method is that not all scrapers produced in earlier periods were made with the same control and style as those particularly identifiable pieces. As a result, at sites with mixed assemblages, such as NB, it may prove difficult to separate such pieces. However, this problem is hopefully overcome by comparing the rest of the assemblage with the cruder scrapers.

A further note on scraper appearance; scrapers are the most identifiable of flint implements whether they are neatly produced pieces or crudely made and retouched. As a result, it was felt that illustration of the crudely made scrapers observed during primary analysis would not add anything to the discussion. There did not appear to be any particular 'type' that was recurrent and as a whole their appearance can encompass any flake or chunk that provided a suitable edge for modification. As such, there are no illustrations for scrapers in the current study (except those described under 'multifunctional implements' below) as it is believed that the Fasham and Ross scraper group system provides enough detail for an impression of their general shape and appearance.

Table 6-8: Scrapers recorded from the sites presented and classified using Fasham and Ross' scraper group system

Scraper group	NB	BUD	LC
Group 1 – scrapers with thin, flat profiles and a slight angle of retouch. The retouch is often pressure flaked and delicate.	11		
Group 2 – scrapers with thick, angular profiles and course, steep retouch.	36	3	2

From table 6-8 we can see that the majority of scrapers are of Group 2 type and that Group 1 forms can only be found at NB where known earlier activity is present. As the data presented for flake technology showed that the majority of flakes were produced with a lack of control and/or concern, it seems wise to assume that the modifications were applied under the same conditions. All of the pieces identified to have scraping edges were perfectly functional and the crude nature of the implement made no impact on this. This system therefore, has shown to be fruitful in identifying scrapers for later prehistoric flint industries by analysing their technological and qualitative attributes rather than their morphology and retouch placement. The latter analysis, on the other hand, should not be abandoned as it has a very useful place in identifying well produced scraper types and if possible it should be used in conjunction with the proposed system for identifying Late Bronze/Iron Age flint scrapers.

Concerning the cortical presence on scrapers, approximately $^2/_3$ from all of the sites were secondary and appear to have been left on for two reasons. First, modification is only apparent to form the scraping edge and any cortex beyond this is untouched. Further removal of cortex would only have an affect on the overall appearance of the implement and this appears to have been of no concern. Second, much of the cortex left remaining seems to be present to cushion the scraper in the hand.

Points

Following Saville's (1981, 9) note that 'point' covers the functional feature of the implement without implying too precise a method of usage beyond perforation (not including projectile points and picks), implements with a perforating function such as piercers, awls and borers have all been classified under the category of 'points' for the purpose of this study unless they are of particular types such as 'drill bits' etc. There is a general classification system for such implements enhanced with respect to a few distinctive types identifiable to a particular period such as the 'zinkin' borer in the upper Palaeolithic and some fabricator types. However, Fasham and Ross (1978, 61) devised a similar group system to that of scrapers based on the type of piece used for modification and the nature and placement of retouch to form particular point types; probably a result of difficulties they had with identifying later prehistoric assemblages. Table 6-9 groups the points recovered from the four sites presented and produces a pattern for crudely formed but perfectly functional borers with minimal modification.

Table 6-9: Points recorded from the sites presented and classified using Fasham and Ross' borer group system.

Point group	NB	BUD	LC
Group 1 – core fragments with jagged edges, one of which has been retouched into a point.		2	
Group 2 – flakes with two facets carefully retouched, 80-90°, into a neat triangular point at the distal end.			1
Group 3 – isosceles triangular point			
Group 4 – irregularly shaped flake, one end of which is worked into a long, thin point, protruding from the body of the flake. One side of the point is curved, the other straight.	20	4	4

Fasham and Ross' system has again shown that crude functional points can be classified in order to identify the types of points present in later prehistoric flint assemblages. It is undoubtedly clear that on the whole points were produced on irregular flakes where one edge was modified to emphasise a perforating functional unit. It was observed in analysis that the amount of retouch applied to gain this affect varied, but on the whole it was extremely minimal, often utilising a natural point from either termination or other irregularities. Furthermore, not all of Group 4 points were worked into a 'long thin point protruding from the flake', in many cases the point was short, but the Group 4 classification was generally appropriate for these pieces (fig. 6-19). In light of this it may be practical in future analysis to create an additional category to refine the Group 4 type. In addition to the irregular Group 4 types a further two points of Group 1 class were recovered from BUD emphasising that any usable piece with a suitable natural point was modified. Furthermore, as with scrapers, cortex was left on the majority of pieces for the reasons stated above.

Interestingly, at NB all of the points were Group 4 forms which may suggest that points did not play any part in the earlier assemblages at this site. However, one of the points from LC was a Group 2 form. This could potentially be earlier but given the overall condition of the assemblage it could easily fit into an Iron Age repertoire.

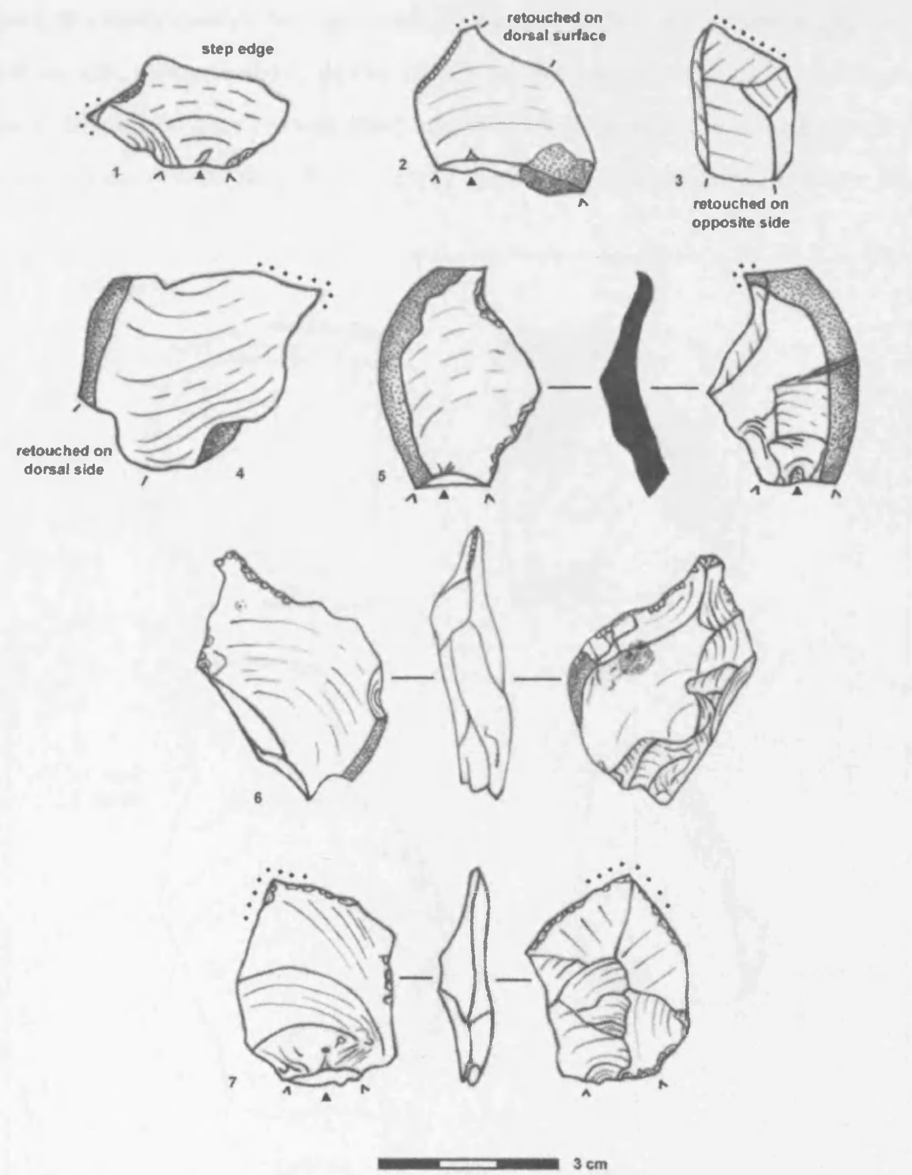

Figure 6-19: A selection of Group 4 Iron Age points observed during analysis of the primary sites and 2 examples from Buddon Wood; utilised areas illustrated by dots. **1)** BUD no.683 **2)** BUD no.552 **3)** BUD no.665 point/chisel? **4)** BUD no.641 **5)** LC no.773 **6 & 7)** Buddon Wood Group 4 examples.

Cutting flakes

The majority of cutting flakes were recovered from NB but comprised a notable implement type at all sites including Buddon Wood and Wanlip, (except for SEG where no implements were recovered). Only one cutting bladelet was recovered from NB and it is suggested that this is a Mesolithic piece. Saville defines cutting flakes as 'sharp-edged flakes which have retouch, prominent utilisation, or an overall shape, suggestive of the use of the sharp edge for cutting' and that 'retouch, whether ancillary or along the cutting edge is usually minimal' defining it from a knife (Saville 1981a, 10). I draw one point of dispute however, with his next point when Saville remarks on the degree of variation in cutting flakes regarding the curvature of the cutting edge. He argues that whether the edge is curved or straight is a reflection of the shape of the flake, which is correct, but that as a result these examples cannot be separated to identify different functional groups. I would argue that we can separate these pieces based on their selection from a number of flakes produced to be utilised as a cutting flake and that by the type of cutting flake produced or selected we may eventually be able to identify the variety of functions they were used for.

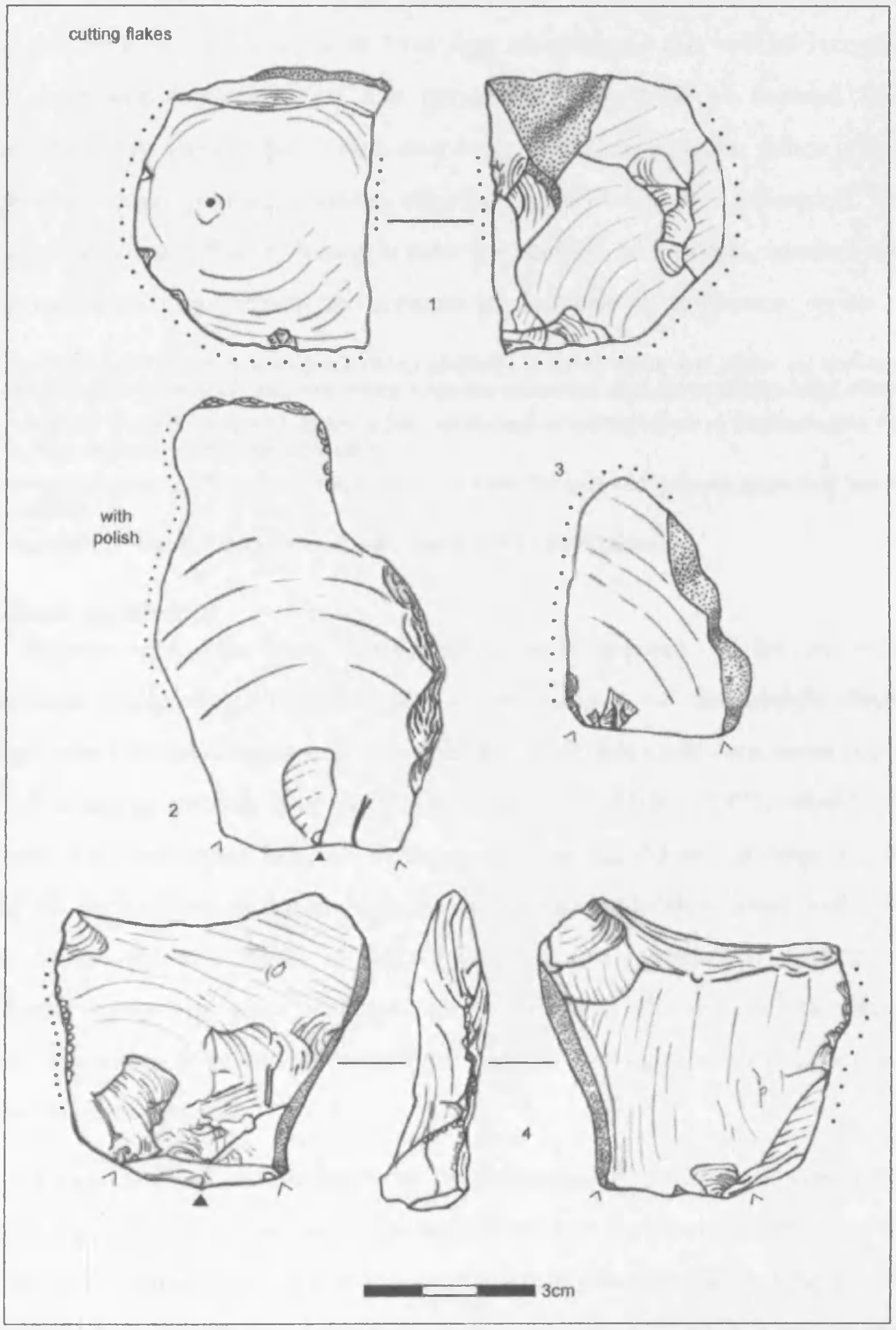

Figure 6-20: A sample of Cutting flakes observed during primary analysis followed by a Buddon Wood example; utilised edges illustrated by dots. **1**) LC no.747 Group 1 **2**) NB no.114 Group 2 **3**) BUD no.557 Group 2 **4**) Buddon Wood example Group 2.

It was observed during analysis that many of these are cortical on the opposite edge with a thick, wide, flat striking platform. Occasionally the distal end was blunted by small, rough retouch if the termination was not already hinged or stepped as evidenced by the three at NB. It is suggested that these flake criteria were part of a pre-conceived idea for the production of cutting flakes for one simple reason, the flat platform and the cortical back and or blunted distal end were to facilitate holding the unmodified edged flake for utilisation.

Some of the flakes with a very straight cutting edge formed a D-shaped flake and it is suspected that with further analysis of Iron Age assemblages this will be recognised as a particular diagnostic implement of this period (see fig. 6-20 of thermal flake from core/core fragment). Other types which may be grouped are irregular flakes utilised along one longer sharp edge, or along a convex edge (see fig. 6-20 Group 2 examples). Therefore, in adopting Fasham and Ross's Group system for scrapers and points, another implement group is presented to complement and separate later prehistoric implement types:

Group 1 - D-shaped flake with a wide flat striking platform, blunted distal end either by non-feathered termination or retouch and one sharp edge for utilisation and the opposite edge often cortical.

Group 2 - irregular shaped flake with either a flat, retouched or cortical area to facilitate grip with either a long or convex edge for utilisation.

Group 3 - irregular chunk with elements of Group 2 criteria for grip and a sharp edge that has been utilised

Group 4 - unmodified blade or bladelets utilised along one or both edges.

Multifunctional implements

In Late Bronze and Iron Age assemblages there appears to be an increase in multifunctional implements. Herne noted in his analysis of the Middle Bronze Age assemblage from Grimes Graves that many implements were multi-functional comprising a mixture of scraping, cutting and perforating functions (Herne 1991, 48-49). Although Herne noted this important fact, he believed that we should not attempt to determine typologies for such pieces as the importance lies in their individual functional units rather than the individual tools. Most analysts have previously subjected such pieces to a 'miscellaneous retouched piece' category given that they do not fit into any existing typologies, and some have simply described them as having a small scraping edge with other miscellaneous retouch.

Having observed several assemblages, a combination of three tool types have been highlighted. Primarily the implements are limited to two functions, mainly a combination of scraping and perforating. This is not surprising given that these comprise the most frequently observed implements (table 6-6). This is closely followed by scraping and cutting flake tools. On occasion a perforating-cutting flake is found and at NB a multi-function tool with scraping, boring/graving and cutting facilities was recovered (fig. 6-21, nos. 3 and 4). I suggest therefore, to date we have three primary multi-functional tools in later prehistoric assemblages: scraper-point; scraper-cutting flake; point-cutting flake.

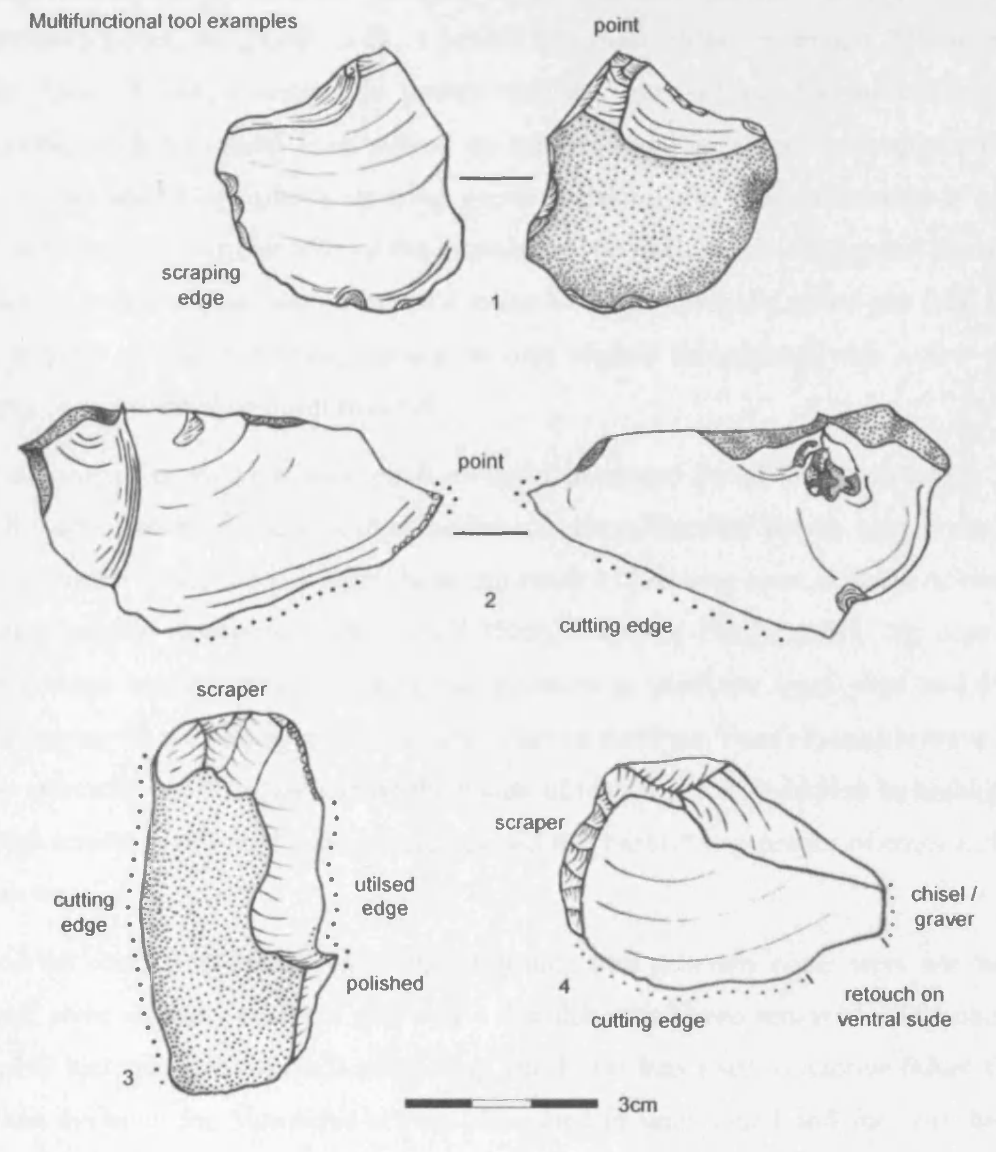

Figure 6-21: A sample of multifunctional implements observed during primary analysis with their functional edges illustrated by either by dots and/or description. **1)** LC no.748 **2)** LC no.808 **3)** NB no. 230 **4)** NB no. 223.

On the whole these pieces are modified on a selection of flakes (in some cases chunks/core fragments) of varying qualities from well formed flakes to thick, angular irregular flakes. There are, however, enough present in assemblages for their occurrence to be expected in other Iron Age assemblages and such tools should be seen as part of a set of observed characteristics.

Summary

The results of this analysis have been interesting and in places unexpected. Some of the data presented were expected given preliminary analysis and as such support the criteria presented earlier and elsewhere. Other information has built on these characteristics and some evidence has not been as strong as was hoped. In summarising I shall draw together the information as set out in this chapter. The use of raw material does rely on local or immediate sources, using both chalk or pebble flint from surface collection. This is mainly in the form of new, complete or broken nodules, yet evidence for the collection of previously worked material from surface or cairn material is evident with approximately 10% of the assemblage pieces showing previous flaking and reuse. Generally it can be expected that an average of 85% of the material will be fresh and it is suggested that this is due to the nature of disposing of material in the Iron Age in rapidly sealed pits (Hill 1995). The majority of the remaining material is only slightly recorticated with a few pieces present of recorticated or burnt material.

The majority of cores were multi-platform and represented broad flake technology. Most had the appearance of being 'bashed' and this is complemented by the high instance of core fragments which seem to have been the result of breaking open nodules or cores to produce suitable platforms. Both Clark's (1960, 216) and Ford's (1987, 70) core class systems were useful; Clark's showing the variation in platform types used and Ford's concentrating on the flaking technology and removal numbers. Ford's system however, was in fact primarily useful for identifying the nature of Iron Age core reduction by highlighting the high incidence of broad flake technology and the 'bashed' appearance of cores and core fragments.

Almost all cores had cortex remaining suggesting that generally cores were not heavily utilised, some showing evidence that only a few flakes had been removed. Only one core from NB had evidence for blade technology which was later used to remove flakes. Given NB had evidence for Mesolithic activity this was not unexpected and the core became reused at a later date. What is more, the size of the raw material is considered to be relatively small or already broken open due to the small number of primary flakes, averaging around 5% of the assemblage. However, cortex seems to play an important role in the production and selection of usable flakes and fabrication of implements, as an average of 57% of pieces were secondary. Indeed the majority of scrapers, points, cutting flakes and multi-functional tools were secondary and it is suggested that this was the result of intentional selection.

Evidence suggests that hard hammer, direct percussion was the primary method for removing flakes given the average of 78% of flakes with a pronounced bulb of percussion. This goes some way to explaining the morphology of flakes, many of which show evidence for a less controlled style of knapping. Whether this is due to lack of knowledge or concern is unclear, but it is felt that given some of the patterning of implement and platform types it is most likely to be the latter. Overall the length:breadth ratio of flakes is short, towards squarish and often very broad flakes. Very few actually reach true blade/bladelet proportions and the number of bladelike flakes is also low. Incidentally, the majority of flat bulbs of percussion relate to the blade or blade-like forms. In addition, and potentially related to raw material size, flakes primarily fall within the flake size category of <40mm followed closely by those in the <60mm bracket. Very few fall into the <20mm category, which may be the result of non-recovery on site – those that did at Wanlip appeared to be the result of sieving, finding chip like flakes removed from miss hits on the core – or >60mm.

Approximately 70% of flake striking platforms are flat with anywhere between 10-45% of platforms being cortical. This supports the evidence that cores were not prepared for flake removal and that any flat or cortical surface was suitable. However, it is suggested that this was a considered choice for the requirement of pieces with flat or cortical areas to facilitate comfortable grip with the least amount of modification. On the opposite end, distal terminations are clear evidence for an inappropriate angle of percussion producing a feathered edge. On average 40-50% of flakes had either hinged, step or plunged distal ends and these were primarily of broader flakes. Complementing this data it is expected that between roughly 10-25% of pieces may show signs of negative hinge scarring. Given the previous suggestion for the considered choice of striking platforms it must be considered that non-feathered terminations may have been required for similar reasons or to produce thicker flakes for more robust flaking tools. This may be the reason why we are observing the high number of bulbar scars on flakes (22% average) as they are the result of increased force on percussion; possibly to aid in the removal of thick flakes.

We cannot assume that because feathered terminations are not predominant that this must reflect a lack of skill or knowledge or even concern as I have suggested myself (1998). Surprisingly only an average of 10% of pieces showed evidence of rings of percussion or incipient cones which was expected to be much higher given these ideas. To reach beyond existing typologies and notions regarding flint knapping we must consider the option that Iron Age knappers required such pieces and were disregarding their appearance, and the 'productivity' of each core.

The latter point is evident in the dorsal scar pattern (DSP) where 70-80% of flakes had irregular flaking scars. A smaller number of pieces did have parallel scarring, some of which were blade-like and 90° scaring was virtually absent with only a very few pieces observed. DSP analysis against dorsal scar type (DST) should aid in the elimination of earlier flint knapping activity present in the assemblage when immediately diagnostic pieces are not present, although further analysis is required to make this clearer, as flakes and blades are not exclusive to particular periods. In Iron Age assemblages dorsal scar values (DSV) of 0 should be present in small numbers complementing the lower figure for primary flakes. In addition, values between 1 and 3 should generally be evenly spread, highlighting the random usage of core material. It is expected that earlier assemblages with high core utilisation will show a predominant figure for the value of 3.

Retouched and utilised pieces make up between 14-20% on average of these assemblages and less than 1% are earlier diagnostic forms if any are present at all. As expected, scrapers, points, cutting flakes and miscellaneous retouched flakes were the only real implements existing in the assemblage. However, there is an addition to be made which is a variant on the three diagnostic types remaining. The multi-functional tool, as far as I am aware, makes its first appearance in Mid-Late Bronze and Iron Age assemblages, possibly the result of once again reducing the number of individual pieces required to be manufactured. Although the individual forms predominate (generally in the order set out above, dependent on each site and the functions flint was required for), the presence of multi-functional implements is significant in the 'tool kit', more often combining scraping and boring functions but frequently combining scraping, boring or cutting functions.

As most flint identification relies on the use of existing tool typologies produced for identifying earlier assemblages, many pieces such as the points and cutting flakes have gone unnoticed and Fasham and Ross' (1978, 61) group system for scrapers and points have proved a step forward in identifying later forms of such pieces. Hence, a group system has been devised here for identifying cutting flakes, the majority of which are unmodified and are often labelled under utilised flake. Although three multifunctional tools have been identified, further analysis is required to refine a system for such pieces, once more assemblages have been analysed.

Overall the analysis has supported preliminary analysis of Iron Age assemblages by producing sturdier evidence and establishing patterns within the data. More importantly it has identified further criteria for a characterisation of flint utilisation in the Iron Age. All four of the sites analysed are strongly suggested to be Iron Age with North Bersted presenting a mixed assemblage due to a small amount of Mesolithic activity and a small Beaker related episode on the site. Furthermore, all four of the sites compared well and supported the data for Buddon Wood and Wanlip.

Chapter 7

Material culture associated with primary flint sources

Having experimented with various methods of flint analysis in the previous chapter to identify characteristics which would aid in the identification of Iron Age flint assemblages, this chapter goes on to investigate the associations the flints from the primary sources have with the datable material culture from each site. As with Potterne, Winnal Down and Meare Village East there are two primary motives behind this type of study. First, to provide relative datable material associations for flint bearing contexts, or, for datable sealed contexts where flints were situated above, below or between. Second, to investigate the role that flint artefacts may have played at each of the four primary sources in order to highlight any reoccurring activities for its continued utilization. The associated material culture and context information is obtained from published sources due to the absence of the paper archive records at stored locations resulting in a secondary rather than primary study of the said material.

A study of the material culture associated directly or indirectly with the flint material on each site is a logical methodology for the relative dating of the flint assemblages, thus supporting the analysis of their assemblage technology and morphology. The second objective, to identify the flints potential functional roles, may seem less clear. There are perhaps more scientific methods to analyse the function of individual flint implements, the most obvious being use wear analysis. The latter was not chosen as an option here, however, for the following reasons. First, I have no expertise in the methodology of use wear analysis, both in the microscopic analysis of edge wear and the deposits which may have been left on the flint pieces. Second, during the period of examination of the four primary assemblages, the department did not have a resident expert in micro-use wear analysis to aid such a study. Furthermore, three of the four assemblages could not be examined outside of their archive locations. Third, micro-use wear analysis is a time consuming procedure and as such this methodology was beyond the time limitations of this study. This is not to suggest, however, that such a study would not be beneficial to the understanding of the functional analysis of Iron Age flint assemblages. On the contrary, it would provide an invaluable source of data, which may form many individual research projects or site specific studies in the future.

As a result, the method chosen here of material culture association using the stragraphic sequence of each site was deemed to present the best option for this study for the following reasons. First, each site could be analysed within the time constraints allowed for each case study by using the published or archive data. Second, it was within my expertise to carry out such a contextual study. Third, this study's objective was to establish a foundation on which to build future studies in Iron Age flint research, including its role in Iron Age social practices. As such, the analysis of associated material culture and the suggestions presented here for the functional use of flints, is to propose a range of *probable* activities, some of which may be apparent and others less obvious, in order to further our understanding of both Iron Age flint assemblages and activities. It is therefore hoped that any associated activities suggested through this form of analysis will form future studies in this area and perhaps some reconsiderations concerning production and manufacturing of certain artefacts.

Although this methodology is a useful starting point and does indeed present some very interesting results, it does have its limitations. In many cases the results are restricted to layer association rather than individual contexts. Although this supports the relative date for the flint material, the functional associations are at best loosely connected. In addition, excavations based on sampling may not present a complete picture if different materials are deposited in different areas according to where their associated activities took place. We are rarely provided with large scale excavation reports, such as Potterne and Meare Village, where such large direct context associations can be made. Yet the results presented here for the primary sources do highlight many of the same associations, which appear stronger in the case studies in Chapter 5, supporting the methodology as a useful tool for reviewing published data for indications of associated activities and a practical tool for using in new post excavation techniques.

North Bersted

There were two main problems when attempting to analyse the associated material culture from NB. The first has in part been discussed in Chapter 6, where it was noted that the paper archive for the excavations could not be located, despite the NMR records and telephone assurances of its location. Further attempts to source it were not successful. As a result, only the artefacts themselves are available for study. Time constraints within this study did not allow an intensive search through all other associated artefacts in order to build a context list. As a result, it has been difficult to associate the flints directly with other material culture from the site. For instance, an attempt to isolate a number of flints that had been dated to the Early Bronze Age using other dateable Early Bronze Age artefacts failed, resulting in other methods of analysis being needed to separate the multi-period nature of the flint assemblage (such as dorsal scar analysis, Chapter 6, 156-159). The absent paper archive also prevented an intensive study of material culture association, such as was carried out for Potterne and Winnal Down. This argues strongly that even when we have access to artefacts, we can not always unravel the complexity of a site, proving the worth of a well written excavation report.

Having analysed the flints yet been unable to locate the paper archive, the next option was to use the published report in order to highlight any interesting associations. The second problem was discovered here. Many of the context descriptions in the published report do not match those written and used on the flint assemblage bags with a few minor exceptions. The report discusses all artefacts by feature with the exception of trench A, C, D. The flints were generally labelled by trench and section number, although in a few cases some of these numbers appear to be feature numbers matching those listed in the report. Without a consistent system it is difficult to carry out a systematic analysis. This was exacerbated by the fact that the sections given in the report were labeled with letters and artefacts in the archive were labeled with section numbers. Without the paper archive, which one must assume must have details linking these together, it is virtually impossible to piece together any useful picture associating the flints with other contemporary artefacts. All is not lost, however, as there are some very interesting points made throughout the report which support a contemporary date for the majority of the flint assemblage. These are discussed in detail below.

Sequencing and dating

A few isolated context descriptions given for the flints listed in the NB primary study (**CD** Appendix 1) do match those in the report and thus support the contemporary nature of the flint assemblage in these areas. In Trench A, five flints (two utilised flakes, a crude scraper, a core/scraper and a poor retouched blade), are directly associated with feature 1 which is described as a rubbish deposit. The report states that this feature was partially and deliberately backfilled in the area in which it was excavated (Bedwin and Pitts 1978, 297) which suggests that at least part of this feature was sealed. This is supported by the presence of Saucepan pottery from phases 3 and 4 (date 3rd -1st century BC), recovered in quantity, some of which were large unabraded sherds (Bedwin and Pitts 1978, 297, 310). There is no doubt in the minds of the excavators that the site was occupied during the 3rd and 2nd centuries BC and abandoned sometime in the late 1st century BC (Bediwin and Pitts

1978, 310-11) giving a positive Late Iron Age date for the site. This was based on the Saucepan pottery widespread across the site and the ditch system which traced across five hectares. I see no reason therefore, to suggest an earlier date (pre-Late Iron Age) for the majority of the flint assemblage based on the evidence set out in Chapter 6 and the dating of the site given in the 1978 report. However, we know that the assemblage does have a small residual element of Mesolithic pieces and there is also the question of a possible Beaker assemblage.

The area of Trench C in the report is suggested to represent the site of a Beaker settlement, based on a single flint arrowhead recovered from feature 195 just south-east of Trench C (thought to be a continuation of feature 10) and six Beaker sherds, three from Feature 19, two from feature 10 and one north of the latter (Bedwin and Pitts 1978, 297, 309). This led the excavators to suggest that all the flints recovered from features 10 and 19 were in fact contemporary with the Beaker sherds (*ibid.* 304). However, feature 10 is clearly described in the report as an Iron Age ditch with which 46 flints are associated in the primary analysis. Feature 10 is also described as a rubbish deposit with evidence of partial backfilling (like feature 1) with evidence of unabraded saucepan pottery and four articulated *Canis* bones (*ibid.*). Therefore, the interpretation that all of the flints in Trench C are residual from a Beaker settlement is at the very least tenuous.

Feature 10 does in fact overlie/cut feature 19 (Bedwin and Pitts 1978 fig. 5), with which 39 flints are associated from the primary analysis, but the report does not give any description regarding the nature of feature 19. There are some indications however, that feature 19 may be earlier than the Iron Age although the flints cannot argue conclusively for a contemporary Beaker date. Length:breadth analysis between these two features does not generally distinguish them apart, yet between them there are 10 true bladelet measurements, six which came from feature 19. The bladelets from feature 19 do appear to support an earlier date as the dorsal scaring of these pieces is parallel and of blade form. There are also two fresh retouched bladelets that have very neat, small retouch, one recorticated unmodified bladelet and one small round end scraper of Ford's Group 1 category. Of the four remaining length:breadth measurements representing bladelet form in feature 10, only one is a true bladelet. Of the remaining, one is a primary flake, and the other two are misshape flakes creating a true bladelet measurement but not in form: the latter represents how length breadth measurements should not be relied upon alone and other cross referencing analysis must be applied. The bladelets in feature 19 however, cannot alone establish a positive earlier date for feature 19 let alone Trench C, particularly as many of the other pieces can be identified with Late Bronze and Iron Age flint technology. It is likely that these few pieces along with the Beaker sherds are residual artefacts (highlighted later in the report as a possibility (Bedwin and Pitts 1978, 303)). Furthermore one very nasty looking flake with evidence of earlier recortication was present in feature 19 showing reuse of material in the area, and some mixing of phases is suggested by Bedwin and Pitts to be the result of levelling of the site after abandonment (1978, 310).

Associated material culture

There is a virtual absence of any other material culture apart from pottery and flints on the site. Four metal objects were recovered all of which were heavily corroded. The date of the site might suggest a heavier reliance upon this material, but with a low survival rate, however, none of these are implements. They comprise a bronze fibula dated to the 1st century BC/AD, a fluted bronze fragment from feature 195 (the same as the barb-and-tanged arrowhead), an iron ring and a short iron rod (Bedwin and Pitts 1978, 339). In addition, an unstratified blue and yellow glass bead dating to the 1st century BC/AD was also found (*ibid.*)

In addition to the artefacts, a large quantity of animal bone was recovered none of which appears to have been worked. The preservation of the animal bone was very poor and worked bone pieces may not have survived (King and Bedwin 1978, 340).

Budbury

As at North Bersted, the paper archive for Budbury could not be located despite visiting its reported location. However, the situation was not as difficult as NB in that the context numbers recorded with the flints matched those listed in the published site report. This allowed a similar study to be undertaken to that attempted for Potterne and Winnal Down (Chapter 5). There were, however, eleven contexts that were labelled in the archive but not mentioned in Wainwright's report (1970). These did not create a major problem as they were not new areas, merely layers within known contexts, which were easily identified from the descriptions given to the various earthworks in the report. For a breakdown of material culture by layers within contexts see Appendix 5 which highlights those labelled differently to the Wainwright report in blue.

Sequencing

Plotting the flints using the primary analysis contexts in conjunction with Wainwright's 1970 report indicates that nearly all of the flints were recovered from on or around the rampart, with some recovered from collapsed stone and weathering from the rampart top onto the berm. One piece was recovered from a house posthole in area 20, one from the inner ditch in area 15 and another from the outer ditch in area 18 (fig. 7-1). It is impossible to plot the flints spatially against other material culture to a greater level of resolution than area and layer, as seen in the MVE analysis (Chapter 5). This poses a slight problem for those areas which cross over various features, such as area 3 as seen in figure 7-1. This is mostly overcome by using the layer descriptions which indicate whether it is from the rampart or berm.

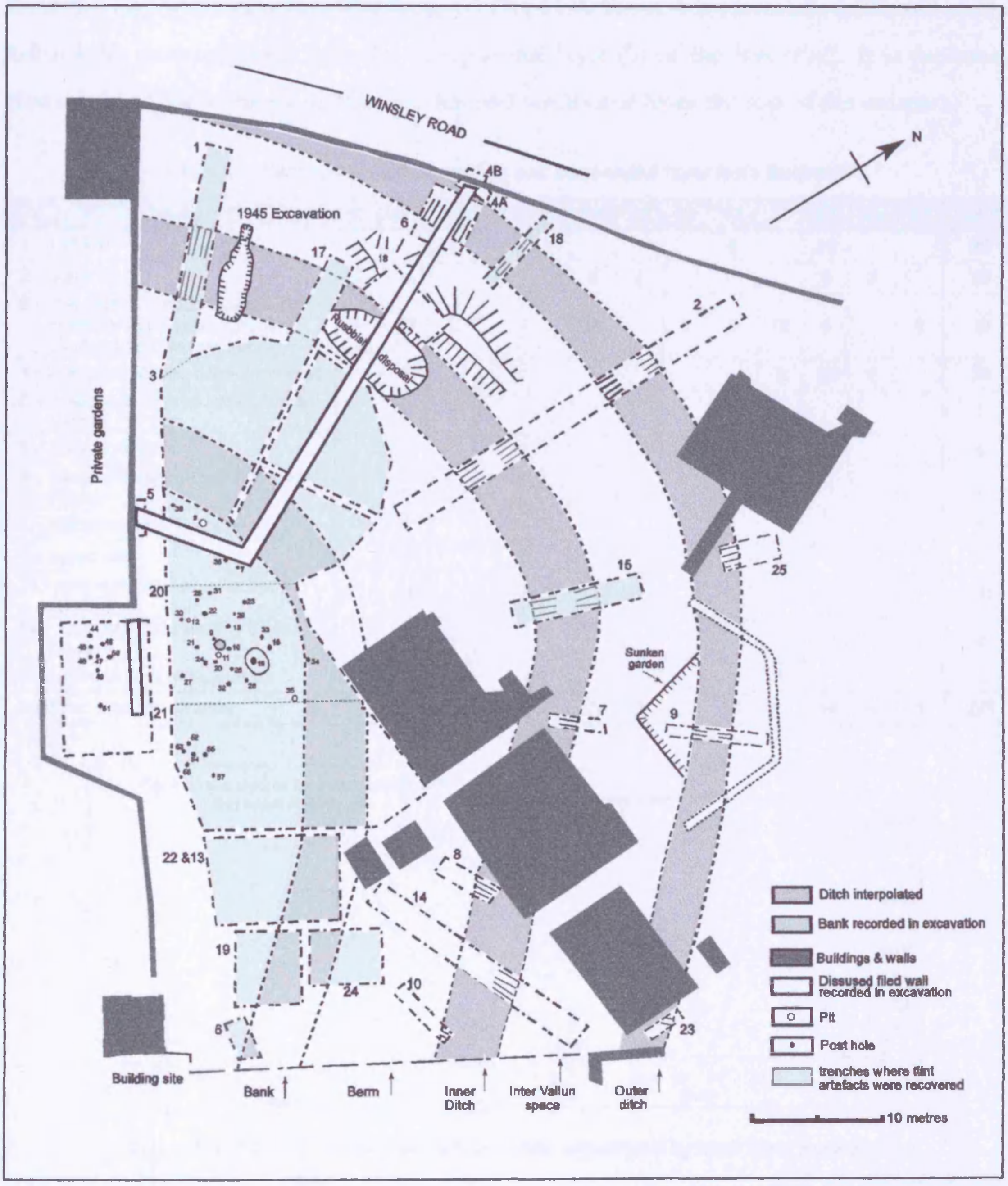

Figure 7-1: Plan of the Budbury excavation showing trenches, the main earthworks, modern standing features and features excavated. The pale green highlighted areas indicate trenches where flint was recovered from (redrawn from Wainwrights plan (1970, Fig. 4).

The areas highlighted in figure 7-1 give an overall view of the previous statement that the majority of the flint and other material culture were recovered from the rampart areas. It is suggested that this is clear evidence for the depositing of material during the occupation of the promontory fort. Can further evidence be presented to support this notion? Table 7-1 lists the number of flints by area provenance against their sequenced layers. It is clear that most of the flints come from either layer 3 and 4 both sealed by the black loam of layer 2. Layer 3 is described by Wainwright as clearly sealing the old land surface of layer 7 and probably represents the base of the ploughsoil as well as material which has weathered from the top of the rampart (Wainwright 1970, 115). Layer 4 is essentially collapsed stone behind the rampart which seals the occupational layer (5) of the fort (*ibid.*). It is probable that this layer also consists of material that had weathered from the top of the rampart.

Table 7-1: Flints by area provenance and sequenced layer from Budbury.

layer	1	3	6	13	15	16	17	18	19	20	21	22	24	total
1 – turf line			1		1				6		12			20
2 – black loam	5	4		2		5	2		11		5	2		36
3 – thin layer of small stones & soil probably base of ploughsoil & weathering from rampart top	1	13	3			18		1	3	12	6		2	60
4 – collapsed stones behind rampart		8								8	36	6		58
8 – collapse in front of rampart (into berm)		1												1
5 – living horizon		7							1	1				9
6 – rampart body and soil between stones		5												5
7 – old/buried land surface		7												7
9 – buried soil		11												11
11 – unknown (presumably berm related)		15												15
14 – unknown (presumably berm related)		2												2
F14 – house post hole area 20										1				1
Total per area provenance	6	73	4	2	1	23	2	1	21	21	59	8	2	225

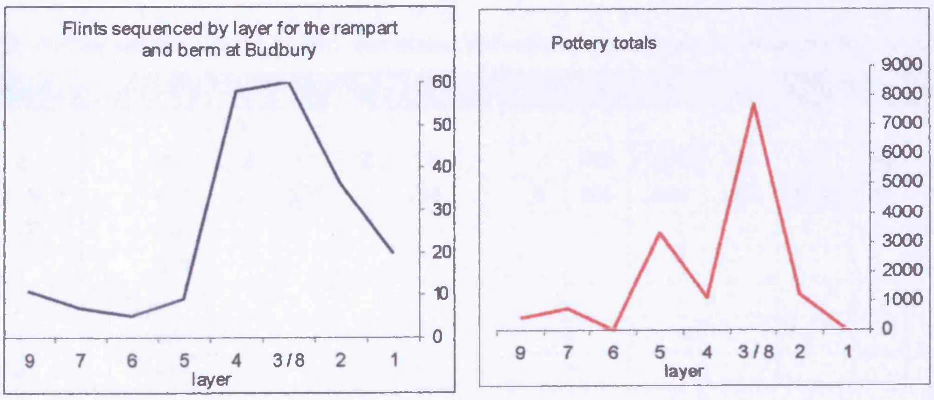

Figure 7-2: Flint and associated pottery totals sequenced by layer from Budbury.

This evidence is further supported by the plotting of the associated pottery in the same manner. Figure 7-2 shows graphs for flint and associated pottery totals for each sequential layer. There is an increased number of pottery sherds from the occupational layer 5, which is to be expected, however, the rest of the pottery matches the pattern for the flint in that it peaks in layer 3. However, layer four does not appear to reach the same levels as layer 3 for its pottery despite 1083 sherds recovered, yet the quantities are high enough to suggest a significant presence within these layers to support the assumption that the flint is contemporary.

Associated material culture (Table 7-3a & b)

Artefacts other than flint recovered from Budbury comprised mainly pottery and animal bone, along with small numbers of iron, bronze, worked bone and antler, stone and shale. For the purposes of discussion only materials associated with flints are presented in the tables and figures. This does not distort the overall view of the material culture across the site as generally all artefacts of other materials are associated with flint bearing contexts. Where this is not the case actual figures recovered are given in the text.

Pottery

Across the excavated site at Budbury 16,876 sherds were collected. Of these, 14,424 came from areas associated with flint artefacts (fig. 7-2 and table 7-2), and of these 12,762 (unshaded cells in table 7-2) are directly associated with flint by area and layer. To support the association of contemporary flint use Wainwright points out that 41.9% (6,188) of the pottery sherds came from area 3, which was located behind and upon the rampart (Wainwright 1970, 125). This ties in neatly with the evidence seen in table 7-1 where 32% of the flints also came from this area. Half of pottery in area 3 was recovered from the occupational layer 5, which explains the high level in figure 7-2. Of the rest, 52 came from the black loam layer, 1720 sherds were from layers 3, 4 and 8, and 1138 came from the old land surface and buried soils of layers 7and 9.

Table 7-2: Pottery sherds viewed by flint associated provenances and layer (shaded no flints associated).

layer	1	3	6	13	15	16	17	18	19	20	21	22	24	total
1			3											3
2		52	22	10	2	73			764	54	181	51	10	1219
3 / 8		637	327	225		789		5	569	2329	1476	1262	68	7687
4		1083												1083
5		3278												3278
6	16													16
7		726												726
9		412												412

Wainwright suggests that the pottery closely parallels the All Cannings Cross assemblage dated to the 7th and 6th centuries BC, located only 14 miles to the east of Budbury. Indeed the Budbury assemblage represents all but one of the All Cannings Cross classes (Wainwright 1970, 150; Cunliffe 1975, 31). There are also comparisons to the Eldon's Seat II group suggested to be dated to the 5th century BC (Wainwright 1970, 150). Based on the pottery evidence and discussion that Wainwright presents for hillfort structure type, Budbury has been placed firmly in the Early Iron Age and although no specific dates are given, a period within the 7-5th centuries BC is suggested (*ibid.* 150-51).

Copper alloy

Only four copper alloy pieces were recovered from Budbury, all of which are associated with flint by area and layer. Two of these were finger rings, a curved bronze rod thought to be a clip, and a slag fragment (Wainwright 1970, 140). It is clear from figure 7-3 and table 7-3b that these artefacts are recovered from the same areas and layers as the flint.

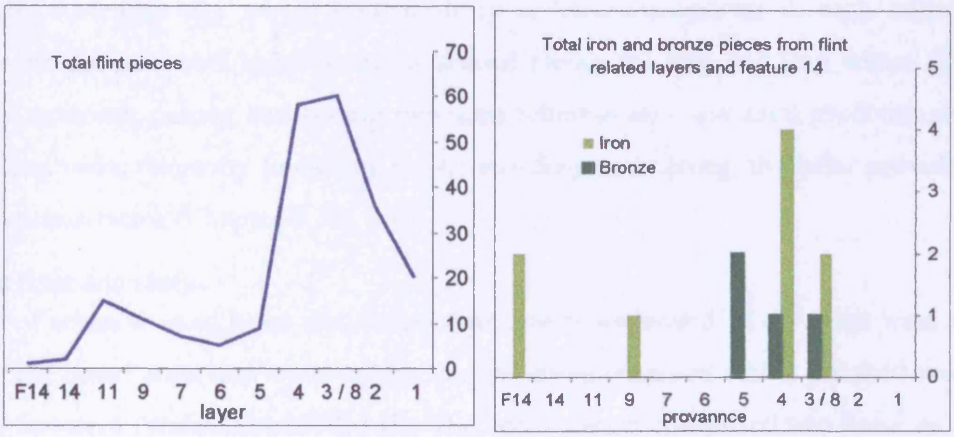

Figure 7-3: Total flint artefacts against copper alloy and iron artefacts presented by layer and feature 14 (area 20); layers 14 and 11 are unknown descriptions but are presumed to relate to the berm in area 3.

Iron

A total 13 iron artefacts were recovered, 11 associated directly with flint layers and areas (fig. 7-3). The unassociated artefacts not shown in figure 7-3 were a small slightly curved knife recovered from feature 11 (a pit) in area 20 and a pointed object, possibly a plough-share fragment, from another pit in area 20, feature 19 (Wainwright 1970, 140). Of the pieces that are associated, three are knives/blades all from area 3 layer 4. The other pieces predominately make up a selection of tools; a chisel from area 21 layer 3, an angle clamp with a preserved rivet hole in area 3 layer 9, an awl from a post hole (feature 14) in area 20, a pointed rod possibly a nail from area 3 layer 8 and three miscellaneous fragments from area 3 layer 4 (*ibid.*). It appears that iron was used as a raw material for domestic implements rather than decorative objects and as such was utilised alongside flint as a raw material for tools.

Given that the site at Budbury was an Early Iron Age fort, the number of iron artefacts recovered matched some Middle to Late Iron Age sites. Given that iron was presumably an expensive raw material in the Early Iron Age, I would have expected to see it utilised more for decorative items instead of domestic implements. Bronze, however, appears to have been utilised purely for decorative items and it is possible that smaller iron artefacts such as brooches probably did not survive. However, given the size of the fort and the intensity of occupation (Wainwright 1970, 150) it may be considered that the occupants at Budbury found the use of iron for such purposes economically viable: no evidence was found to suggest iron working took place at the site, although it should be acknowledged that only a small percentage of the whole site was excavated. The iron artefacts are mainly in the form of knives/blades/chisels, possible carpentry tools and a plough-share relating to arable farming. The flint implements appear to predominately relate to cutting and perforating functions too, but it is suggested that the iron tools were utilised for different tasks and materials, otherwise why would both tools types be contemporary to each other? This reflects the different tool types found at Winnal Down for flint and iron where flint was used for scraping, cutting and boring functions whereas iron was used predominately for agricultural tasks, carpentry (including nails), iron dogs and cutting, the latter providing the only common factor (Chapter 5, 99, 103).

Worked bone and shale

A total of seven worked bone and antler objects were excavated all of which were related to flint associated areas and layers except for one antler fragment with a polished tine from area 20 feature 8 (Wainwight 1970, 143). The bone objects comprised two bone awls (area 3 layer 3 and area 20 layer 3), a needle (area 20 feature 14), a bone comb fragment with the teeth missing (area 20 layer 3) and a rib fragment with worn edges and incisions on one face (*ibid.*). The worked antler knife handle was a polished tine which still held the tang of the iron blade in the socket (area 21 layer 3) (*ibid.*). In addition, very little shale was found at the site and none to suggest that working took place. The three pieces associated with the flints contexts (area 21 layer 3) were simply fragments of a shale bracelet, the other two remaining fragments also forming part of a bracelet recovered from area 20 feature 9 (Wainwright 1970, 147).

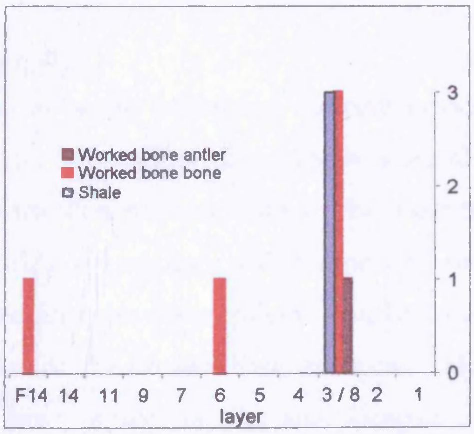

Figure 7-4: Total shale and worked bone and antler artefacts presented by layer and feature 14 (area 20); layers 14 and 11 are unknown descriptions but are presumed to relate to the berm in area 3.

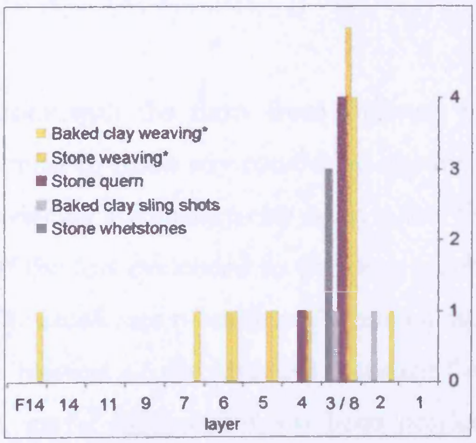

Figure 7-5: Total baked clay and stone artefacts presented by layer and feature 14 (area 20); layers 14 and 11 are unknown descriptions but are presumed to relate to the berm in area 3.

It cannot be suggested that flint played a primary role in working bone and antler due to the small number of bone artefacts present. However, figure 7-4 clearly shows once again that most of the pieces were deposited in the same layers as the majority of flint, pottery, iron and copper alloy. This further supports the contemporary utilisation and deposition of flint on the Budbury fort site.

At this point it is worth noting the large quantity of animal bone excavated from the site. A total of 2,449 bone fragments were recovered, 44% of which were sheep/goat and 40% cattle; the remainder being primarily pig and horse (Westley 1970, 152). It was suggested that the bones had been prepared for cooking, possibly boiling, as they had been chopped into pieces 3-4 inches long and if large split longitudinally (*ibid.*). There were no flints in the assemblage that appeared functional for this purpose and it may be, given the evidence for iron blades on the site, that bones were chopped using the latter. This is despite the fact that flint was clearly up to the task as demonstrated by the experimental results presented in Appendix 6.

Other materials

The remaining artefacts were made of baked clay and stone (flint associated fig. 7-5 and tables 7-3a and b) and these were primarily related to weaving; ten spindle whorls (eight from flint associated contexts) made of stone, four of baked clay and three baked clay loomweights. As with the worked animal bone we cannot assume flint tools were directly used with weaving, although cutting flakes may have been used for cutting woollen yarn; again their presence is noted as with Meare Village East and Potterne.

The presence of the five fragments of quernstones in flint related contexts merely supports the notion that along with all other material culture from Budbury flint was utilised and deposited in the Early Iron Age particularly in the formation of layer 3.

Summary

There are some interesting material associations with the flints from Budbury but the numbers for many of these artefacts are too small to make any conclusive arguments for direct use alongside each other. The most convincing argument to be made is that the flint is clearly contemporary with the occupation of the fort evidenced by the large numbers of all material types found primarily in layer 3. The small area of earthworks remaining, given the size of the original fort, produced only a fraction of the potential evidence that may have been present on the site. Despite this, useful information has been produced to suggest a positive contemporary date for the flint assemblage and some interesting links with other material culture to pursue in the site assemblages

Table 7-3a: Material culture associated by provenance and layer only except for pottery (see table 7-2), presented by layer.

layer	flint	Pottery	Baked clay		Shale	Stone			Worked bone		Iron	Bronze
			weaving*	sling shots		weaving*	quern	whetstones	antler	bone		
1	20	3										
2	36	1219	1	1								
3 / 8	60	7687	4	1	3	5	4	3	1	3	2	1
4	58	1083				1	1				4	1
5	9	3278	1			1						2
6	5	16	1			1				1		
7	7	726	1									
9	11	412									1	
11	15	0										
14	2	0										
F14	1	16	1							1	2	

* spindle whorl or loom weights

Table 7-3b: Material culture associated by provenance and layer only except for pottery (see table 7-2), presented by area.

Area	Flint	Pottery	Baked clay		Shale	Stone			Worked bone		Iron	Bronze
			weaving*	sling shots		weaving*	quern	whetstones	antler	bone		
1	6	16										
3	73	6188	3			4	1			2	6	3
6	4	352										
13	3	235										
15	1	2										
16	23	862	1									
17	2											
18	1	5										
19	21	1333	1									
20	22	2383	3	1		1				3	2	
21	59	1657	1	1	3	3	4	3	1		1	1
22	8	1313										
24	2	78										
total	225	14424	9	2	3	8	5	3	1	5	9	4

Liddington Castle

The published report for Liddington Castle was thorough with regard to detail of the complex stratigraphic sequences. This was fortunate as although access to the paper archive was promised this was not ultimately made available. Luckily the flint report was detailed and informative, including an explicit discussion as to the possibility of a contemporary date for the flints; however, there did appear to be some contention over the dating between Gardiner and Rahtz (1996, 49). Gardiner appreciated the difficulties of writing a report on such a small assemblage, yet had also highlighted the probability of Iron Age flint technology in a number of publications (Gardiner 1996, 49; 1993). She noted how in previous excavations on and around Liddington Castle many Neolithic finds had been found and that the surrounding area had produced an abundance of such material. Despite this she observed that the assemblage from the 1976 excavations resembled most closely that of the Late Bronze Age rather than the Neolithic, and went on to provide examples of Micheldever Wood R4 (Fasham and Ross 1978) and Fengate (Pryor 1980) as comparisons, suggesting the Liddington Castle assemblage was Late Bronze Age and therefore not uncommon (Gardiner 1996, 49). I think that we have enough evidence to suggest, however, that the assemblage is not Late Bronze /Earliest Iron Age and is in fact Iron Age proper. The flint analysis set out in Chapter 6 has already stated the case for an Iron Age date for the assemblage based on concurrent patterns for technology and morphology. I feel that the associated artefacts and their location support this whole heartedly.

Sequencing

The majority (78) of the 86 flints were found in trench A and as such will be used to discuss sequencing and dating. Despite Gardiner's Late Bronze Age date for the assemblage, Rahtz states in an addendum after Gardiner's report that all but five of the flints were excavated from definite Iron Age contexts. Despite this claim he seems to go on to contradict himself stating that the flints represent earlier activity (Rahtz 1996, 49, 53). Can we therefore, support a contemporary date for the flint assemblage?

Table 7-4: Basic description of contexts and phasing of rampart and interior of Trench A

Area	Contexts	Type	Phase
Trench A	A41	Buried soil	
Sector 1	A 40/34/35	Timber slots	Phase 1 / primary occupation
	A39	Same A41 but trampled and mixed	
	A36	Same as A39 but also used to build primary defensive bank which spilled over A40 when timbering collapsed or removed.	
	A31/32	Deliberate fill of A34/35.	Phase 2a
	A30-27/23-21	Chalk and clay bank built.	
	A 20	Ditch deepened, widened, and used chalk to build bank higher.	Phase 2b
	A19/4	Heightening of Phase 2b rampart.	Phase 3
	A2	Occupation of fort after rampart complete.	
Trench A	A15	Natural chalk and turf	
Sector 2	A5	Primary layer. Disturbed buried soil or weathering of chalk base after turf stripped and used.	Phase 1 / primary occupation
	A2a/2b/3	Slightly lighter and stony mixture that merged with A5	Phase 3
	A2	Turf and topsoil	

Figure 7-6 shows three section drawings from Trench A sector 1. Table 7-4 provides a basic sequencing for Trench A based on the information provided in the report. The green highlighted areas in figure 7-6 are those which contained flints. Only five flints were found in contexts 20-40 leaving 73 from contexts above these. This tells us that during the building of the rampart a very small number of flints found their way into the structure. As there are three phases to the construction of the rampart we can assume that the fort was occupied during and in between these phases and as such one might expect to find more than five pieces. However, once the final stages of the rampart are complete, flint appears to be deposited at a more frequent rate: although there are only 86 flints found, the excavated area of the site is probably only 1-2% and given the obvious increase in flint numbers in phase 3 one can postulate that there would have been many more. So far so good, but defining where the flints were recovered from is not enough in itself to support their contemporaneity. We clearly need to associate the flints with datable material culture. Pottery was the only datable artefact type found in appreciable numbers upon which to base any supportive association.

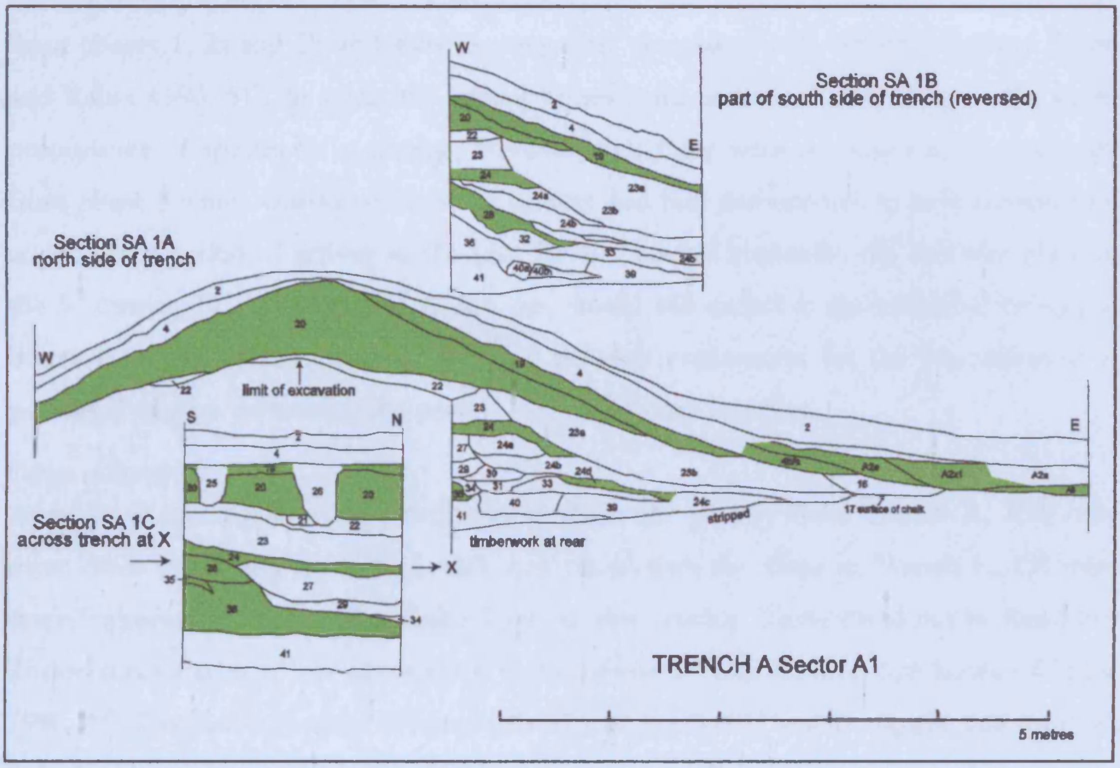

Figure 7-6: Simplified section drawing of the three sections within Trench A, sector 1 (redrawn from Rahtz 1993, fig. 9). Green contexts indicate the areas where flints were recovered.

Associated material culture

Pottery

A total of 757 sherds were excavated and split into three groups. Group 1 consists of 233 sherds and is confined to the phases 1, 2a and 2b – the primary building of the rampart (Ashton, Bradley and Stevens 1996, 42). This group resembles earlier pottery recovered from Liddington Castle and assigned to the earlier All Cannings Cross type by Cunliffe dating to the Late Bronze/Earliest Iron Age (*ibid.*). This date has been refined by the presence of a copper alloy pin dated to the Early Iron Age between the 7-6th centuries BC (*ibid.*).

The majority of pottery (524 sherds) came from contexts relating to phase 3 and made up Groups 2 and 3. Although Group 2 was difficult to date it was most similar to Group 3 which included a rounded jar closely paralleled by the Danebury 4 and 5 ceramic phase vessels dating to the 5th century BC (Ashton, Bradley and Stevens 1996, 42). Given that the majority of the pottery was firmly dated to the 5th century BC (Middle Iron Age) and that it was deposited in phase 3 during the occupation of the fort after the final build phase of the rampart, this evidence must present a strong case in support of a contemporary date of utilisation and deposition for the flints.

Animal bone

Animal bones in general were not associated with flints as all but two vole bones came from phases 1, 2a and 2b and were consequently associated with Group 1 pottery (Hirst and Rahtz 1996, 51). In total 987 animal bones were recovered consisting of the usual proportions of species. It is strange, however, that there were no bones at all recovered from phase 3 which contained the most pottery and flint and appears to have represented an increased period of activity in the fort. Even if animal husbandry did not take place in the 5th century BC at Liddington Castle, one would still expect to see a number of animal bones from the consumption of meat. A possible explanation for the phenomenon is presented when summarising the pottery, flint and bones together.

Other materials

Apart from the copper alloy pin discussed under the pottery from Trench A, A39 only three other metal artefact were found. Associated with the flints in Trench C, C2 were three fragments of copper alloy sheet classed as one artefact. These could not be dated but Taylor states that it is not uncommon to find these in Late Bronze Age hoards (Taylor 1996, 44). Given the absence of many other metal artefacts I would suggest that they are linked to the general occupation of the site. The copper alloy stud was also undiagnostic as was the iron knife (*ibid.*), and neither were associated with flint artefacts. However, slag was recovered from five contexts three of which were associated with flint (A2b, A2c and A2e) from the phase 3 occupation (Hirst and Rahtz 1996, 47).

Looking to other artefact types, there is no evidence in the form of quernstones, spindle whorls, or loomweights to support the notion that arable farming or weaving took place. There were 111 pebbles found, thought to be slingstones, all associated with phase 3 and Groups 2 and 3 pottery (Hirst and Rahtz 1996, 48).

Summary

The pottery evidence alone suggests that in the 5th century BC there was an increase in population at the Liddington Castle fort, if not activity. The deposition of increased numbers of flints would support this notion. However, all of the bone data relates to the primary building of the rampart in the 7-6th centuries BC along with 233 sherds of Group 1 pottery. Can we suggest that there was a vastly different economy between the Late Bronze/Early Iron Age phase (the primary rampart building) and the Early/Middle Iron Age? If this was the case what did these people eat in the latter?

It is suggested that as only 1-2 % of the hillfort was excavated we are viewing only a tiny sample of the fort's history. It is possible that different waste types were deposited in various areas according to the spatial location of linked activities within the fort, or that the areas used for disposing waste moved over time, perhaps linked with changes in the use of the site. This might go some way to accounting for the lack of animal bone in the upper layers of Trench A (phase 3) and the small number of pottery against the animal bones in the primary building and use of the rampart.

Given the levels of pottery and animal bone which suggest a reasonably high level of occupation at the site, one would expect other domestic activities to be represented such as weaving, grinding of grain and the processing animal by-products. There is however, an absence of domestic artefacts that represent such activities such as loomweights, spindle whorls, worked bone and quernstones. It would be difficult to contemplate that on a domestic settlement such activities did not take place, unless of course, Liddington Castle was a hillfort where, as some have suggested previously (Hill 1995, 54) used for 'gatherings' and 'feasting' in which pottery was used and animal meat was butchered and eaten. The latter can some what be disregarded, however, as the bulk of the pottery is not stratigraphically located with the animal bone, supporting the previous notion that we are seeing only a tiny portion of the depositional activities of the Liddington Castle occupants. What is evident, however, is that flint clearly relates to contexts linked to the vertical extension of the rampart, and continued use and dumping of material after this event.

Segsbury

At the time of writing, post-excavation work for Segsbury was still taking place. As such only preliminary data such as site records were available for study. Despite the small flint assemblage the discussion of the flints undertaken in Chapter 6 has shown that information *can* be drawn from the assemblage. In addition, given the numerous features excavated over the two seasons at Segsbury, primarily pits but also gullies and ditches, the small flint assemblage was not out of place. There are very few finds at all including common categories such as pottery and animal bone, although a very small number of pits produced richer artefactual assemblages (Gosden and Lock 1996, 4). The question posed here is whether the few artefacts from the site support a contemporary date for the flint assemblage?

Sequencing and associated material culture

Pottery

Little more can be said regarding the sequencing of the flints across the site than was discussed in Chapter 6, table 6-2. However, pottery evidence suggests that the many pits across the site *are* contemporary with the circular structures, although there are several phases to the occupation of the site as evidenced by the cutting of the structures and pits by other pits (Gosden and Lock 1996, 4-5). Table 7-5 shows that the majority of the flint bearing contexts also have pottery and although pottery sherd numbers are unavailable at present, I was provided with preliminary data regarding the rough date of pottery from these contexts. On this basis, we can provisionally sequence and date a number of these contexts.

Table 7-5: Number of flints associated with datable pottery viewed by context type and number.

Context			Number of flints	Datable pottery
No.	type	layer		
1412	Pitt fill	Lowest	2	EIA
1006	Pitt fill		2	EIA
1545	Pitt fill	2nd	3	EIA
1176	Pitt fill	Top	7	EIA
1697	Pitt fill	Top	3	EIA
3008	Ditch fill	Top	2	EIA
1517	Pitt fill	Upper	1	MIA
1266	Ditch fill	Top	5	MIA
1004	Ring ditch fill	Top	10	MIA
1539	Pitt fill	~	1	IA
1490	Posthole fill	~	3	IA
1475	Pitt fill	Upper	1	IA
6003	Hornwork ditch fill	~	1	IA/R
1724	Pitt fill	Lowest	1	~
1724	Pitt fill	Lower	1	~
1536	Gully fill	~	5	~
1427	Posthole fill	~	5	~
1704	Posthole fill	~	1	~
	Chalk in rampart wall	~	1	~
	Spoil over rampart	~	2	~
	Natural feature	~	2	~
	Topsoil	~	1	~

Iron

There were only 13 iron artefacts excavated over the two seasons, 11 which appeared to be 'modern' intrusions. The two that are not modern appear to be iron smelt from 3008 (top fill of ditch 3007) and context 2042. Context 3008 is a flint related context but only two pieces were recovered, a flake and a piece of debitage. However, at the time of writing the date of ditch 3007 is under debate due to the pottery evidence which is suggesting a Late Bronze/Earliest Iron Age date, pre-dating evidence for the interior of the fort. The only other flint related context was 2042 but the iron artefact in this case was a piece of barbed wire. There was also one piece of metal slag from context 1253.

Other materials

Only two other pieces of material culture were associated with flint contexts. The first was a piece of worked bone from ditch fill of context 3008. The second was a chalk spindle whorl from the lowest level context 1412, which was also associated with Early Iron Age pottery.

Summary

Of the two questions driving the associated material culture analysis, data which supports the relative contemporary dating of the flint assemblages appears to have been answered more successfully. Investigations into the possible activities that flint may have been involved in were only successful where other material artefacts have survived in sufficient numbers to allow associations to be made.

Relating to the dating question, at North Bersted, Budbury, Liddington Castle and Segsbury associated pottery evidence supported an Iron Age date for the flint bearing contexts. Very few other artefacts were present at the sites apart from Budbury, but the occasional iron or copper alloy piece did provide additional supportive evidence.

Budbury was the only site where enough artefacts had been recovered to explore any potential associations with the flint. However, only a few worked bone and antler pieces were present, not enough to suggest that flint played a primary role in bone and antler working but the association was still apparent through the sequencing of the layers to suggest it a probability. Interestingly, spindle whorls and loomweights were also found deposited with flints although they can not be as closely related as those from Meare Village East due to the differences in recording methods. This does seem to be a recurring activity with flint assemblages as seen at Meare Village East, Potterne and Budbury,.

The sequencing of Liddington Castle was very clear and given that there are distinct layers where pottery and animal bone were recovered it is unfortunate that further materials were not found. The absence of many other domestic related materials and the animal bone sealed in lower layers suggests that the limited excavations at LC do not represent a true picture of the activities across the site over time. Further excavation of other areas of the fort may reveal some of the missing data, which may have been deposited in alternative locations.

In summary, this analysis has not been as successful as one would have hoped. This is mainly down to the lack of evidence of other material artefacts, yet where they have been present in sufficient numbers, such as Budbury, the analysis has been worthwhile. However, the use of relative datable materials, mainly pottery, has been very successful in presenting supportive contemporary dates for the associated flint bearing contexts.

Lastly, it is an interesting question as to why this material culture association has not been as successful as one had hoped. The fact that flint in the primary sources has been found predominantly without associated material forces the question as to why. Is this a true reflection of the data? The three main published case studies presented good cases for material association analysis, so is it the result of a poor choice with regard to primary examples to study? The choice of cases studies, were not chosen for their ease of data collection and analysis as I wished to present a study where all manner of problems may occur in the analysis, reflecting the natural occurrence of such data. Despite this, it remains an interesting question for future analysis to build upon. Is the fact that flint is often found without associated material in Iron Age contexts an archaeological, preservation-related or Iron Age behavioural quandary?

Regarding archaeological methodology and preservation, the secondary case studies used in Chapter 5 were predominately large excavations with both full or detailed excavation and good preservation conditions. In the instance of the primary case studies, North Bersted appeared to almost certainly have had preservation difficulties due to the virtual absence of metals and animal bone, and Segsbury also appears to have suffered a similar situation. In contrast, Liddington Castle witnessed only a small section of the entire hillfort being excavated. In the case of understanding Iron Age behaviour, it is possible that flint knapping activities were carried out away from domestic living space reducing the number of flint artefacts found in such contexts to a few implements. However, there is no reason to assume that the knapping waste or spent implements should be deposited along with the other rubbish from the site, as was the case at Potterne and, where visible with associated pottery, at Liddington Castle. At this stage of the study therefore, I would suggest that the recovering of associated materials with flint is linked predominately to both the nature and extent of excavation and preservation of a site.

Chapter 8

Comparisons between published and primary analyses

To gain useful comparative information from data such as that explored in this thesis it is often assumed that a large number of similar assemblages is essential so that patterns can be retrieved. In this study I have catalogued in total 82 sites (78 through published study and 4 primary), however it must be acknowledged that in doing so they have been studied using three different methods. These are: a basic overview of the majority; a detailed study of three published reports (including the paper archive in Potterne's case); and four primary studies of flint material in conjunction with their published reports.

It would of course have been ideal in each case to have studied the material itself in conjunction with the paper archives, but as has been discussed, in the majority of cases this was not possible. The assemblages themselves and/or the associated archive could not be located for all site assemblages and generally only a sample of the material was detailed in the final reports due to time and budgetary restrictions. Furthermore, each site is unique with respect to the recording methodologies employed, even though some standard procedures have been followed. As a result it has proven difficult to apply a uniform, new methodology to the overall group as they have simply not been recorded in the same manner. As a result of these issues, one of the additional objectives of this study has been to compare the various levels of examination and assess whether a) we could gain useful information from each type of study and b) are the results from each study type useful enough to compare against each other?

Chapters 5, 6 and 7 have shown that each analytical methodology has yielded useful information regarding the presence and identification of Iron Age flint assemblages. The purpose of this chapter is to first compare the flint data from the primary sites to that from the published. Second, a comparison is made between the material cultures discussed in Chapter 7 with those from the published sources studied in Chapter 5. During the two stages of investigation, observations are highlighted regarding any similarities between the main sites. If patterns can be observed between the sites, this will support the idea that in order to gain 'new' observations and data from flint assemblages, we do not necessarily have to conform to a *rigid* methodology involving numerous, superficially similar assemblages. This has enormous implications for future research into newly recovered assemblages and particularly the re-analysing of archived material.

Comparison of published and primary flint assemblages

The overview of 78 assemblages (Chapter, table 5-1) have been grouped together in order to represent a general picture of the data available for analysis. Of the 78, only 59 of the sites with useful breakdowns could be utilised in constructing this summary and the following tables (8-1 - 8-4) are based on the same 59 sites. In addition it is also noted that a number of methods used in Chapter 6 to identify patterns of technological attributes (*i.e.* dorsal scar patterns) from primary sourced flint assemblages, cannot be used here as there is insufficient data from the published sources to facilitate such comparisons. It has been suggested that these additional methods are used in any future analysis of such assemblages.

Assemblage breakdown

Across the three formats of analysis employed in this study the general description of the flint assemblages has remained constant. This is perhaps not surprising given that the selection of the 82 assemblages was based partly on the level of discussion of the flint assemblages in the published reports and for showing evidence of crude technology with a predominant, flake industry and very few diagnostic implements.

Table 8-1: Basic breakdown of assemblages between published (top) and primary analysed (bottom) material.

Site	Flakes	Blades	Cores & related	Chip / chunk	Re-touched	Utilised	Other
Overview sites without Micheldever Wood (*cf.* 5-1)	64.9%	1.9%	4.4%	6.6%	13.9%	1.2%	7.1%
Overview sites with Micheldever Wood (*cf.* 5-1)	63.2%	0.7%	2.5%	24.7%	5.7%	0.5%	2.7%
Potterne (trowelled columns of cutting 12 (*cf.* 5-3))	74.6%	0.4%	8.7%	10.3%	6.1%	~	~
Winnal Down (*cf.* 5-6)	77.3%	0.7%	4.3%	9.2%	6.7%	2.2%	0.1%
Meare Village East (*cf.* 5-11)	15.5%	~	0.9%	0.6%	9.9%	~	73.1%
North Bersted	48.5%	5.5%	2.8%	1.8%	31.5%	9.4%	0.2%
Budbury	36.8%	3.5%	21.9%	16.3%	11%	6.6%	3.9%
Liddington Castle	53.5%	~	13.9%	7%	16.3%	9.3%	~
Segsbury Hillfort	35%	3.3%	1.7%	35%	5%	1.7%	18.3%

Table 8-1 provides the most basic breakdown of the sites possible to assess the fundamental descriptive elements of the assemblages. There are some clear distinctions between published and primary sources mainly through the identification of crude miscellaneous retouch, crude points, cutting flakes and general utilisation, which appears to have gone unnoticed in previous analyses. It is suggested that the latter is a direct result of a lack of comparative data against which to identify such crude implements and retouch and as such many potentially classifiable pieces appear to have been lumped under the general category of waste or flakes. Consequently, the increased proportion of such implements and miscellaneous retouch/utilisation in the primary analysed assemblages has reduced the percentage of unmodified flakes from a rough average of 70% down to approximately 44%. Blades however, remain consistently minimal in any assemblage across the published and primary sources.

Core and core related material at North Bersted is consistent with the published data, whereas the higher instance of core related material at BUD and LC is a direct result of a large amount of core fragments – rather than cores – which previously seem to have been categorised under debitage. As such it is suggested that the level of cores between published and primary sources remains constant, yet the levels of core related material may increase if identified and separated from general debitage material.

The amount of debitage recorded within any assemblage is totally dependent on the type of excavation methodology employed, as is evident in both published and primary sources. Again, comparative figures between published and primary data show that levels of debitage vary considerably, which may have as much to do with what is considered debitage in published sources as with the excavation methodologies employed to recover smaller artefacts.

Flake morphology

Although the observed levels of flakes, core related material and retouched pieces vary between published and primary sources due to the identification of cruder forms and technology, the level of technological consistency between sources beyond this general description is remarkable. The majority of the 78 assemblages used in the overview – those used to generate the general descriptions (Chapter 5, table 5-1), Potterne, Winnal Down (and to a degree Meare Village East), and all of the primary analysed sites highlighted considerable technological and morphological similarities. Overall the morphology of flakes were described generally as short, squat, broad, thick, angular, crude and undistinguished, with more detailed analysis identifying extremely similar characteristics.

Length breadth of flakes

Many of the assemblages did not record the presence of blades or bladelets, and in those that did the figures were not high. In published sources, flakes were on the whole described as having a length breadth ratio close to 1:1 with many displaying a breadth that exceeded their length (*e.g.* Fasham for Winnal Down 1985, 84 and Coles for Meare Village east 1987, 78). Further details regarding the length/breadth measurements are not repeated here but can be found under each site heading in chapters 5 and 6. As this chapter is concerned with identifiable patterns of data between the sites, a comparison of flake to blade ratio has been identified in order to set future parameters for an Iron Age typology. Table 8-2 sets out the percentage proportion of flakes to blades for each site using only complete, unmodified flakes and blades as a stable factor in identifying the type of flaking technology taking place.

Table 8-2: Flake to blade assemblage proportions viewed in percentages

Site	Flakes	Blades
Overview sites without Micheldever Wood (58 sites)	97.3%	2.7%
Overview sites with Micheldever Wood (59 sites)	98.8%	1.02%
Potterne	99.5%	0.5%
Winnal Down	99.01%	0.09%
Meare Village East	Data unreliable	
North Bersted	93.3%	6.7%
Budbury	95.6%	4.4%
Liddington Castle	100%	~
Segsbury Hillfort	Mainly chunks	

It is clear from table 8-2 that across the sites a flaking technology dominates these assemblages (avg. 97.6%) with true blades and bladelets almost nonexistent. Where their presence is higher, such as the marginal increase in the North Bersted figure, a mixed assemblage may be present, as was the case with this site.

Other factors

In all published sources flakes were said to have been predominately produced using hard hammer percussion, as is evidenced by the majority of flakes with pronounced bulbs of percussion and their short squarish shape. This was also true of the four primary cases. In addition, the published sources which highlighted the high instance of hinged terminations (*e.g.* at Chidham Lane (Boismier 1998); Monkton Court Farm (Healy 1994); London Rd. Thetford (Gardiner 1993)) and/or thick, plain or cortical striking platforms (*e.g.* at Chidham Lane (Boismier 1998); Rainbow Wood (Payne 1974); Monkton Court Farm (Healy 1994); Carne's Seat (Holgate 1986)) were supported clearly by the four primary assemblages with an average of 40-50% of flakes having hinged, step or plunged terminations, and an average of 70% of flakes having flat striking platforms and between 10-45% having cortical platforms.

Core flake ratios

Ratios have been produced between the number of cores collected against unmodified flakes and blades. The reason for this analysis is to see whether – a) there is any correlation between sites for the number of flakes removed from cores and b) are the assemblages a reasonable representation of the true assemblage (*i.e.* the complete flint assemblage that was used on the site) given variations in retrieval methodologies. Although the size of raw material does have an impact on how much a core can be reduced, it has been highlighted in Chapters 5 and 6 (*e.g.* cores from Potterne, Winnal Down and Budbury) that cores were often not utilised to their full potential, with only a few removals evidenced. For this reason the ratios are based upon an average of flakes collected against each core and not actual removals. Table 8-3 shows that across the assemblages analysed the ratios are reasonably balanced, with clear reasons evident for those which fall either side of the general 20-30 flakes per core ratio.

For example, the ratio of 13:1 at Potterne is based upon the sample used for analysis from the trowelled columns of cutting 12, and therefore relies upon cores actually being discovered within these excavated columns. In contrast, at Winnal Down the sample was based on the recovered flints from enclosure ditch 3, which does not represent such a restricted area for flint to be recovered. Winnal Down's ratio also remains constant at 22:1 if the total 2178 flakes against 98 cores/core fragments is used. Beyond the trowelled columns, the Potterne assemblage has never been broken down for further description, yet given the actual number of flints from the site it is likely that more cores exist, potentially raising the number of flake to cores to resemble the Winnal Down ratios.

Table 8-3: Ratio of flakes to cores between sites.

Site	Flakes	Cores	Ratio
Overview sites without Micheldever Wood (58 sites)	18950	623	30:1
Overview sites with Micheldever Wood (59 sites)	6752	339	22:1
Potterne (trowelled columns only)	395	31	13:1
Winnal Down (enclosure ditch 3)	298	14	21:1
Meare Village East	Data unreliable		
North Bersted	134	4	34:1
Budbury	92	10	9:1
Liddington Castle	46	1	46:1
Segsbury Hillfort	Mainly chunks		

The ratio of 34:1 at NB can be explained by the presence of Mesolithic activity within the assemblage, where generally cores were utilised until they were exhausted, producing many small removals. The presence, albeit small, has had an undoubted impact upon the number of flakes to cores recorded.

The ratio of 46:1 at LC can be explained by the exact opposite situation to that seen at NB. Here there is no evidence of earlier activity or flint technology yet it has the highest ratio of flakes to cores. As suggested in Chapter 6 (page 143) the one core identified may be representative of an assemblage size of 86 *particularly* when a higher number of core fragments are present, and potentially forming an integral part of the reduction process.

Core fragments, however, may have had the opposite effect at Budbury. Not one but ten cores were recovered, which would naturally reduce the ratio of flakes to cores. Yet in this instance only 92 flakes were actually recovered; a low number given the number of implements and utilised pieces. This can be explained by two factors. First the unusually high number of 37 core fragments (explained by the smashed nature of many of the cores) at BUD and second, seven of the latter have been utilised or retouched and many implements, particularly points, were produced on core fragments or chunks. Taken together these two factors imply that core fragments played an important role in the utilisation of flint, thus reducing the number of flakes removed from the ten cores.

In addition, the general average of 20-30:1 flakes to core represents a neat pattern for how core reduction strategies change through later prehistory. Table 8-4 shows how fewer flakes were removed on average from cores through time, supported by the Neolithic and Bronze Age ratios examined by Saville for the 1971-2 excavations at Grimes Graves (1981a, 69). These ratios indicate and support the notion that cores were not utilised to their full extent or potential, the latter also suggesting less preparation took place to enable full use.

Table 8-4: Average ratio of flakes to cores over sites examined (Iron Age) against those examined by Saville (1981a, 69) for the 1971-2 Grimes Graves excavations (Late Neolithic – Bronze Age).

Assemblage	F / C ratio
Overview sites without Micheldever Wood (58 sites), Pott., WD, NB, BUD, LC	23:1
Overview sites with Micheldever Wood (59 sites), Pott., WD, NB, BUD, LC	29:1
Trench 8B – Grimes Graves – Bronze Age	96:1
Trench 2A – Grimes Graves – Bronze Age	99:1
Trench 3 – Grimes Graves – Late Neolithic	174:1
Trench 4 – Grimes Graves – Late Neolithic	646:1

Retouched pieces and implements

The comparison of implements and retouched pieces between sites is based on the whole assemblage where possible, excepting Potterne, where again only the trowelled columns of cutting 12 were available for a useful breakdown. Furthermore, only the main implement types have been tabulated for comparison and stray finds such as arrowheads and microliths have been excluded on the basis that their numbers are not representative of the overall assemblages.

Table 8-5: Comparison of the main implement types across the sites analysed.

<table>
<tr><th></th><th>Overview No MW</th><th>Overview With MW</th><th>Pott.</th><th>Winnal Down</th><th>MVE</th><th>NB</th><th>BUD</th><th>LC</th><th>SEG</th></tr>
<tr><td>Scrapers</td><td>595</td><td>604</td><td>6</td><td>18</td><td>15</td><td>48</td><td>3</td><td>3</td><td></td></tr>
<tr><td>Cutting implements</td><td colspan="2">73</td><td></td><td></td><td></td><td>16</td><td>5</td><td>4</td><td></td></tr>
<tr><td>Knives</td><td colspan="2">72</td><td></td><td></td><td>3</td><td>2</td><td></td><td></td><td></td></tr>
<tr><td>Points</td><td colspan="2">41</td><td>3</td><td>8</td><td>2</td><td>20</td><td>8</td><td>9</td><td></td></tr>
<tr><td>Implements</td><td>30</td><td>97</td><td>3</td><td></td><td></td><td>4</td><td></td><td></td><td></td></tr>
<tr><td>Retouched flakes</td><td>632</td><td>681</td><td>14</td><td>163</td><td>26</td><td>54</td><td>8</td><td>2</td><td>2</td></tr>
<tr><td>Retouched frags</td><td colspan="2">12</td><td></td><td></td><td></td><td></td><td>3</td><td></td><td>1</td></tr>
<tr><td>Utilised flakes / frags</td><td colspan="2">134</td><td></td><td>63</td><td></td><td>24</td><td>8</td><td>3</td><td>1</td></tr>
</table>

Table 8-5 clearly shows that scrapers, miscellaneous retouched flakes and utilised flakes are the most commonly found implements across the sites, followed closely by points. Where cutting implements are recovered they are comparable in number to the other implements. It is probable that at some sites cutting flakes were not recognized due to a lack of comparative data and may even be included amongst utilised and simply retouched pieces, if picked up and recorded at all.

Summary

These few comparisons illustrate that despite variations in the accessible data utilised for analysis, and the three different methodologies used in this study, we can still gain useful comparative data for identifying Iron Age flint assemblages, whether from a small or large assemblage size, and those lacking detailed data. The basic averages and figures set out in the above tables will form the core of the suggested patterns laid out in Chapter 9, when a fluid typology is presented for identifying Iron Age flint assemblages.

Material associations between primary and published sources

Having presented the data for material associated with flints for the published sites analysed in Chapter 5, and for the primary sites in Chapter 7, we can now address any similarities or contrasts between the two. At the beginning of this chapter I outlined the reasons why a variety of methods for analysis were chosen in order to identify whether we could gain useful information with the aim of identifying Iron Age flint assemblages from sites which have different levels of recorded data or very little material at all.

Studying the material associated with flints from both the published and the primary sources has shed important light upon the different levels of data that can, or cannot, be retrieved. The primary reason behind studying the associated material culture was to identify any potential activities in which flint implements played a role; a crucial element in understanding how and why flint assemblages continued to be utilised in the Iron Age. The second was to identify other material culture with which flint was frequently deposited, even if a direct association of use cannot be established. Activity association between two materials is an extremely difficult judgment to make without direct evidence, therefore most linked associations can only be suggested. At best the recurring proximity of artefacts helps to identify the type of settlement and economy where flint continued to be exploited.

Table 8-6 presents a picture of the associations that flint may have had with other material culture from the sites analysed over chapters 5, 6 and 7. First and foremost, all of the sites provided datable Iron Age pottery from contexts where flints were recovered, allowing a firm date to be placed on the stratigraphy. The non-residual element of the flint assemblage was often supported by the presence of other datable objects and the pattern of flint characteristics displayed across the assemblages.

Table 8-6: Linked associations between flints and the listed artefacts or activities for the analysed sites (3 published and 4 primary) listed by date provided by pottery and metal artefacts. Key below describes the format of the table.

Site	Date	Pottery	Bronze	Iron	Worked bone	Shale	Weaving	Quern stones	Butchery
Potterne	LBA – EIA	√	Adornment & vessels, implements	Domestic & toiletry	√	√	√	√	√?
Liddington Castle	LBA – EIA	√	Adornment	A knife	N. E.	N. E.	N. E.	N. E.	~
Budbury	EIA	√	Adornment	Domestic & agriculture	√	~	√	√	?
Segsbury	EIA – MIA – LIA	√	N. E.	Fibula	√ (1)	N. E.	√ (1)	N. E.	N. E.
Winnal Down	EIA – MIA – RB	√	Adornment	Agriculture	√	~	√	√	√?
Meare Village East	LIA	√	Adornment	Tree-felling, carpentry, anvils, adornment	√	~	√	√	√?
North Bersted	LIA	√	Adornment	Miscellaneous	N. E.	N. E.	N. E.	N. E.	√?

√ suggesting flint potentially utilised in producing these items or as a tool in the activity.

√ frequent proximity to artefacts or related activity or not enough evidence to suggest a role in production but possible.

√? √? possible use of flints in the activity of butchery to a greater or lesser extent based on the pattern and proximity of both flints and animal bone through the layers; this may also include evidence for the *absence* of metal artefacts (*i.e.* knives) expected to be present for butchery use.

~ no main association between flint and artefact type due to such a small number of artefacts recovered or very different contexts.

N. E no evidence of this artefact recovered from the site.

Second, the flint assemblages all appear to coincide with the use of metal artefacts rather than in place of them. This challenges the notion that flint utilisation continued to exist only where societies could not afford or acquire bronze or iron implements. The co-existence of flint and metal tools is supported by the different types of implements excavated. In all cases the bronze artefacts *generally* represent items of decoration or personal adornment. In a few cases bronze was used for implements such as at Potterne (primarily in the latest Bronze Age), where four blades and seven awls were found. However, this use later switched to ornaments and vessels suggesting a change in the functional use of bronze, a common feature.

Iron appears to have a more varied use life and often reflects site specific activities. Overall iron was utilised for domestic tools, often relating to agriculture and heavy tasks such as carpentry (including nails) and tree-felling. The presence of iron knives at some sites also reflects the nature of different cutting tools required and may, with future functional analysis along the line of Herne's 1991 study (see Chapter 2), be comparable to their flint counterparts. It was also utilised for personal adornment particularly in the case of Meare Village East where numerous fibulae were excavated.

It has been suggested throughout this research that the working of bone may have been a prime activity in which flint played a role. Where worked bone has survived this appears to be the case. The available evidence suggests strongly that flint was linked with this activity at Potterne, Budbury and Meare Village East, whereas at Winnal Down the associations are not as strong. These associations have been based mainly on the presence of these materials between stratigraphic levels and their close horizontal proximity at Potterne and Meare Village East.

If flints were being used to work bone and antler, then the assumption may follow that they may have been part of a more general tool kit (probably iron and flint based) used for butchery. This does not necessarily seem to be the case. The difficulties with interpreting this data are that very few butchery marks are found given the size of many assemblages and when they are it is difficult to establish whether an iron or flint tool made the marks. It may also depend on the information accessible regarding the animal bone from published reports or archives. For instance, at Meare Village East it is reported that animal bone was recovered in large quantities, yet very little information was provided regarding where from. Therefore, it is difficult to make any associations with the flint assemblage. Due to these difficulties only two sites, Potterne and in particular Winnal Down, could suggest any potential butchery links to flint largely based on the enormous quantities and location within certain stratigraphic levels. It is clear many more Iron Age assemblages (particularly those from the presented catalogue) need to be examined further before the question of butchery using flint is clarified. The butchery experiment presented in Appendix 6 does however, present some interesting possibilities for the flint-butchery argument and Herne also believed from his examination of function units in the Shaft X assemblage that animal butchery was a probable related flint activity (Chapter 2, 12).

A further reoccurring pattern seems to be emerging for flint objects that are associated with weaving related artefacts. This is an interesting link and not one that would have originally been considered, and probably missed if a fully integrated study of the material culture had not taken place (as Alison (1997, 78) has pressed for; see Chapter 3, 26). It is not entirely clear whether the flints are merely being deposited in the vicinity or as a direct result of use in the activity of weaving. It was discussed in Chapter 2 that flint was increasingly marginalized to the domestic sphere during the Bronze Age and the activities discussed here lend support to this notion. The association of flints with loomweights and spindle whorls may simply refer to the existence of these items together in a more general domestic assemblage. Indeed the presence of these items within the same levels/contexts is clear in five of the seven sites analysed and where weaving related artefacts do not exist there is very little evidence of other materials either. However, in three of the sites the proximity of these items is very close suggesting a specific, rather than general, association. The latter evidence is further supported by the similarity in concentration for flints and bone/antler weaving tools at Meare Village West 1979 (Orme *et al.* 1981, 62).

This was clearest at Meare Village East where the abstract horizontal stratigraphies highlighted a number of such instances (Chapter 5, figs. 5-38 & 5-39). At Budbury only the levels within areas excavated could be determined and as such close proximity could not be established, however, flints and weaving artefacts appear to have been used and deposited within the same time frame. Potterne shows a similar pattern to Budbury where the increase and decrease of flints and baked clay spindle whorls more or less follow suit, but particularly when applied to retouched pieces. This was apparent in zones 9 and 8 after which there was a drop off in both types until they increased again in zone 5, peaked in zone 4, and then decreased through 3 and 2. If flints were used in the activity of weaving then their role is not entirely clear. It appears that those pieces which are in close proximity to weaving related artefacts are mainly unmodified flakes and miscellaneous retouched pieces, and occasionally awls, and scrapers.

In support of the domestic nature of the sites in which flints are utilised, in every case quernstones or quernstone fragments were excavated. It is not suggested that flints and quernstones have any direct role together, but the presence of both in a site assemblage is now considered a key criteria. As most quernstones can be dated by their shape, quernstones may be used alongside pottery as an aid to securely dating flint bearing contexts with or without other datable artefacts. It has not been part of the methodology here to do so, yet it can be stated that all of the quernstones from these sites are contemporary Iron Age types.

Summary

It is clear from the evidence built over Chapters 5, 6 and 7 that flint was utilised in the domestic sphere, evidenced by the implement types, technological nature of the assemblages and associations with artefacts that represent domestic activities. In particular, flint utilisation appeared to have had a role in bone and antler working and weaving although in the latter case it is not clear whether flint had a direct role but the two related artefacts do appear frequently together. It is also possible that flint was utilised in butchery given that the number of animal bones on site and the lack of small knives present in the assemblages, particularly in the case of E-MIA sites such as Potterne and Winnal Down. This activity is explored further in Appendix 6 where an experiment was carried out with flint and iron knives to establish the possibilities. The regular presence of diagnostic quernstones with flint enables considerations of the former as a usable relative dating resource alongside pottery to support the identification of an Iron Age typology. This would be particularly useful on domestic sites where it appears that the presence of datable metal artefacts is either infrequent or poorly preserved.

Although bone and antler working and weaving appear to have reasonably strong associations, it is noted that some of the activities which appear to be linked with flint utilisation are tenuous, in particular butchery. This is partly due to the nature of butchered bone generally leaving few marks which is exacerbated by the difficulties of identifying whether they were made by flint or metal utensils. In the case of other material culture, some of the problems lie with the preservation of certain materials, the variety of recording methods used over the years, and the objectives of each excavation regarding the importance of certain materials. With these issues in mind it is hoped that these material associations, some of which are tentative, are explored further through the re-examination of other archived assemblages and through further detailed excavation in order to challenge or confirm them.

Chapter 9

Results, the wider picture and the way forward

The format of this concluding chapter is set out as follows. First a discussion of the results is presented following the format of the research questions set out in Chapter 1. I have chosen this method to best evaluate and present the conclusions relating to each question and to assess how successful or difficult it was in achieving an overall result. The latter questions, 5 (where was it used?) and 6 (When was it used?), take into account 'the wider picture' where a discussion is presented on site types and locations where flint utilisation appears to have occurred and from which period in the Iron Age. After a summary of the final and main results, suggestions regarding future areas of research that can profitably be built upon are presented. Lastly, some considerations are put forward for the archaeological community to consider regarding our predominant notions and methodologies with regard to Iron Age flint utilisation if we are to further enhance our understanding of post Bronze Age flint.

Discussion of Results

The research questions presented in Chapter 1 were set out primarily to clarify whether flint continued to be utilised in the Iron Age, to assess its role in Iron Age activities and to lay a foundation for further research to build on. In order to tackle these questions, it was necessary to summarise the research into Late Bronze Age flint technology and its role by the end of the Bronze Age. In Chapter 2 I presented a number of studies which showed that there was a change in technology and a reduction of flint use in the Bronze Age, traditionally viewed as a result of metal introduction based on assumptions of functional replacement. Some researchers, myself included, see this as too simplistic and suggest instead that flint was replaced when replacement became economically viable and wider social changes of identity and self awareness that affected choice prompted much of the change. For instance, flint was still functionally important but not as a status commodity, placing flint solely in a functional commodity within the domestic sphere. As a result, technology was less varied and simplistic with few of the traditionally diagnostic tools remaining but with many miscellaneous, so called 'undiagnostic' tools in existence. Flint studies however, have stagnated beyond the end of the Bronze Age as we have no methods, theories or reference material to understand flint technology beyond this period, despite the ground work into the interesting changes taking place in the Bronze Age carried out by analysts such as Ford, Bradley, Hawkes and Fisher (1984) and Herne (1991).

In Chapter 3 I discussed several theoretical considerations relevant to understanding the continued use of flint beyond the Bronze Age and looked critically at how we use current methodologies. Our analytical methods are based upon four primary areas; typologies, technology, style and function. In Chapter 3 I discussed at length each of these areas paying particular attention to technological innovation to explore why we have no methodologies in place for identifying post Bronze Age flint assemblages. Three main issues were identified. First, we use typologies *too* rigidly, not allowing for expansion to incorporate new types that are identified, consequently stagnating analytical research and a better understanding of past behaviour. Second, we have a tendency to treat technological innovations in the late prehistoric period as a linear process where new advances are automatically taken on, disregarding the question of choice by those it affected. Third, the way in which we use current typologies links certain styles to certain functions. Despite Herne's analysis of the Middle Bronze Age flint assemblage from Grime's Graves where he removed any element of style from his methodology, concentrating instead on the functional elements of each piece, we do not appear to have taken this on board. Again we use style and function too rigidly by linking particular styles to particular functions and, where I believe Herne was wrong in claiming that we should not attempt to classify these new forms of implement, I believe we can if we use typologies in a more fluid manner. In addition to how we analyse flint assemblages consideration was given over to how flint is treated in isolation to other materials. To gain a fuller understanding of why and how flint was utilised we must integrate our material studies in order to fully contextualise them. This element of the study was crucial to the identification of associated activities and functional analysis.

In addressing each of these points I have attempted to form a basic typology through which we can identify new diagnostic tool types and characteristics of post Bronze Age flint assemblages. In doing so care has been taken to ensure that this typology should not establish too specific a set of boundaries and diagnostic forms so as to do little more than bring the argument round full circle. With the ground theories set in Chapter 3 and the criteria based on Late Bronze Age assemblages and preliminary studies, the methodology for identifying potential Iron Age flint assemblages from existing published sources was established in Chapter 4, including a breakdown of the analytical techniques to be used in the primary analysis of four of the identified sites. Throughout the study of the general, published and primary assemblages the need to formalise our data package into fewer degrees of variability between samples, creating superficially similar assemblages in order to identify reoccurring patterns was resisted. Given the degree of variability in recovered artefacts and features, due to preservation, retrieval and recording methods, any rigidly formalised research methodology would be nonsensical and counter productive. As a result, it was felt important to test the three levels of information collated independently in order to support the data presented and the usefulness of the more fluid typology presented.

Overall, the theoretical and analytical methodology adopted does appear to have been successful, as despite the variable levels of information that could be gained from each of the samples (basic overview of the majority of published sources; detailed study of three published reports; primary study of four flint assemblages and a study of their published reports), comparable data was gained from each. In the first instance, this supports the notion that we can gain information from highly variable data without having to conform to a rigid and restrictive methodology based upon data reduction. Second, by returning to our basic analytical techniques and using a more fluid notion of typology, style, function and technology, we can identify new 'styles' of technology and implements that can be formed into a more fluid typology for future use. Third, these results are highly important in terms of their potential for re-analysing archived material where flint assemblages of Iron Age date have never been properly studied due to either low assemblage numbers, or an inconclusive date (due to a lack of comparable data or if it is suspected that a wrong date has been assigned). The potential for re-analysing archived material is additionally valuable in that new information regarding material associations for the individual sites and the wider context may emerge. Fourth, the resulting typology can be used for the current and future analysis of flint assemblages that may be suspected to be Iron Age, or for unstratified assemblages.

Given that the methodology and theories used in this thesis have provided a set of results which appear to have satisfactorily provided comparable data across the three sample types, do the results successfully answer the six primary research questions and their sub questions? The following text sets out these questions and their relevant results, discussing the successful conclusions drawn along with any weaknesses in the data which need addressing further.

1. Did Iron Age flint utilisation exist?

This question did not start at the beginning of this thesis as a complete unknown, as a large amount of preliminary work had been undertaken to evaluate the need for the current investigation to take place (Humphrey 1996; Humphrey 1998; Young & Humphrey 1999). Isolated cases throughout the last century have suggested that flint assemblages found in Iron Age contexts are contemporary, yet due to their isolated nature and a lack of comparable data a definitive answer was lacking as the millennium drew near. With the aid of such published cases, my own preliminary research into said question, the background of later Bronze Age studies and the methodological and theoretical issues raised in this thesis, I am able to strongly argue that flint utilisation continued into and throughout the Iron Age. Much of the evidence to support this conclusion is of course based solidly on the nature of the flints deposition in reliable Iron Age contexts and the results from the cases studies regarding the dateable Iron Age material associations with which the flint pieces were found. Given the lack of definitive answers to questions 3, 4 and 5 ambiguities still remain, highlighting the imperative need for integrated studies within material and contextual studies.

1 a) Why then has it not been identified?

The main reason why Iron Age flint assemblages have not been regularly identified is that we simply have not been looking for them. The vicious circle (fig. 1-1) created by our own archaeological methodologies and theories has become impossible to break into. Primarily, it has been traditional notions of technological innovation as a continually progressive process in conjunction with the recovery of smaller flint assemblages and declining flint technology that together have created the circle we find ourselves locked within. Based on the notion that flint had been abandoned by the Iron Age we did not expect to find it and thus did not question its absence in the archaeological record. In order to break this cycle and investigate further I made a hypothetical assumption that Iron Age flint technology did exist and asked myself the remaining four primary research questions as a guide for investigation. It was quickly apparent that identifying the flint assemblage characteristics alone was not enough, but the issues behind why we believe flint was no longer utilised and thought of as a functional option must be explored and the material associations present investigated to provide convincing conclusions regarding its nature and role.

1 b) What are the main theories behind its abandonment?

One of prime reasons put forward to account for the fact that Iron Age flint assemblages have not been regularly identified or even considered are tied up with our current theories concerning later prehistoric material culture and understandings of contemporary choices. Chapter 2 brought together a selection of notions which in part discussed how analysts have conformed to the idea of the abandonment of flint by the end of the Bronze Age. It could be argued that in some respects we have never really broken away from Thomsen's simplistic Three Age system, which although originally useful, copes poorly with our growing appreciation of the complexity and variability of the past. We still have an underlying fascination with bronze artefacts evidence by the detailed information given over to very few pieces in reports. This is also evidenced by the 'bronze phenomenon' theories that have been generally accepted over the years that argue that once bronze was available, then it was the obvious choice of material to use functionally and with regard to status, if one could afford it. This inevitably led archaeologists to theorise that Bronze Age flint technology and utilisation only remained in existence where bronze was either not available through trade, was not affordable or that flint implements were only made when there was no metal counterpart for its function (*e.g.* Ford *et al.* 1984). Leading on from these notions it has also been traditionally assumed that once bronze was widely available and affordable, coupled with the introduction of iron, then flint became totally redundant as a raw material for domestic tools and status items.

1 c) Have these abandonment theories affected our identification of these assemblages?

In short, yes they have. In brief, if we do not think that post Bronze Age flint assemblages exist in the archaeological record then we will not readily look for them or build the search for them into research plans for future excavations. Chapter 2 took this point further when discussing past research into the changing nature of flint technology through the Bronze Age. The 1984 Ford, Bradley, Hawkes and Fisher paper on '*Flint working in the Metal Age*' offered ground breaking research on Late Bronze Age flint assemblages at a time when very little was known about them. As a result, it was of considerable value in the preliminary stages of this thesis. Yet this discussion as to which implement types continued to be used was based on the same traditional notion of such types only existing where there was no metal counterpart to replace it. As a result, despite the valuable observations made concerning the changing nature of flint technology overall, Ford and others' research was based predominantly upon the view that, with the increased use of metals, flint technology declined until it ceased to be used altogether. Herne's 1991 analysis of the Shaft X assemblage at Grimes Graves was the first to take a completely fresh look at material from the Middle Bronze Age and he suggested that we were not looking at a decline in the number flint implements, but rather at a less formalised tool kit with still a large number of tools having a variety of functions.

1 d) Are our existing analytical methodologies appropriate for identifying the assemblages, if not, why?

The basic analytical methods we have for identifying flint pieces are still suitable for identifying Iron Age flint assemblages. The problem we have is how we apply them within our current ideas of typologies derived from the definite flint using periods throughout prehistory. As analysts, we tend to have preconceived ideas about the assemblages put before us, based on the knowledge of an excavation. If we have an assemblage from a Neolithic site we expect the majority of the assemblage to be Neolithic with the possibility of a smaller residual element of earlier material. If an assemblage from an Iron Age site arrives, with the exception of isolated cases, the general assumption has been that it is residual before any analysis is undertaken. As a result, often only a very basic analysis has been undertaken, giving a general description, highlighting the length:breadth of flakes and noting the diagnostic implements if any. Therefore a thorough examination of the assemblage is rarely given and habitually post excavation managers value flint assemblages far below the frequently fewer pieces of metalwork found.

1 e) Can we adapt or create methodologies that will aid in their identification?

The analytical methodologies used in this thesis seek to build upon and expand those already available to us. I have attempted to use these techniques to their full advantage in the hope that they will reveal hidden and unsuspected data. The important process here was to concentrate on *qualitative* data rather that *quantitative* and highlight patterns that informed about the techniques and thought processes employed by the knapper/s in producing such pieces.

I found that simply comparing the length and breadth of complete flakes did not reveal anything new and that an Iron Age flake looked very similar in shape to many Late Neolithic and Bronze Age flakes. Yet by cross-referencing other forms of analysis, such as termination and bulb of percussion types, patterns are revealed concerning flake shape, termination and bulb type that aid the understanding of the technology involved. It may be argued that if a decline in technology has taken place we should expect to see some of these patterns without the need for cross-referencing data, but the point here is that if we are to determine the character of a 'new' flint industry then we must find as many patterns as possible to compare with our known data in order to pull apart those assemblages that have similar characteristics in flake morphology.

One methodology which did not work at all was flake curvature analysis. This technique is not commonly used, but when it is, it can provide additional hard and soft hammer percussion analysis. It was considered that this may aid the identification of percussion type in those flakes where bulbs of percussion are borderline between pronounced and flat. This technique was however, abandoned when I was unable to retrieve trustworthy data given that a majority of flakes were either too thick, flat or twisted, with the bulb of percussion often obstructing measurement, preventing a reliable figure from being calculated. However, the latter was noted as a possible characteristic of such assemblages.

The analysis of dorsal scars is a technique frequently used on earlier prehistoric flint assemblages but it is not applied to later prehistoric assemblages to the same degree. It is rarely mentioned in many later prehistoric flint reports unless an unusually detailed study is presented. Dorsal scar analysis can provide a great deal of qualitative data regarding the technology and thought processes taking place in core reduction strategies and as such was considered to be integral to the primary analysis in the current study. Again this data was cross-referenced with flake morphology in an attempt to separate earlier nondescript flakes and blades from later pieces and also to compare the data with core analysis which should present a reflection of the dorsal scar data.

A certain interest was also paid to criteria which are considered to be signs of a lack of skill/knowledge in flint knapping technology, such as hinge and step termination, bulbar scars, rings of percussion and obtuse bulbar angles. Although these are generally noted in reports as signs of poor workmanship and crude technology we have no clear guidelines as to how to decide whether an assemblage was knapped by an individual practicing in a widespread diminished technology or by an isolated, poorly skilled knapper. Furthermore it was interesting to question whether, we would see overall, a discernibly higher level of poor workmanship just because the shape of flakes were shorter, broader and thicker. The virtual absence of blades in later prehistoric assemblages has led to a consensus that the ability to produce them had disappeared, rather than the *need* for them. Again, the analysis of these 'poor knapping techniques' is nothing new with regards to methodology, but I have approached the analysis of the data produced from a different angle and considered whether these criteria, if present, actually affected the selection and functionality of the flakes and implements produced, rather than merely noting their presence and taking the data no further. The data produced (presented below) was both interesting and surprising.

Beyond the analytical techniques of the flint itself we *can* do more to identify these assemblages. It has long been suggested that we must more fully integrate our material culture analyses in order to gain a better understanding of each material's role within society. However, specialists have become isolated within their own fields and this I believe can only have adverse affects on our own individual analyses. Not only has the integrated approach in this thesis provided support for a contemporary date for contextually associated material culture in many cases, but the reason behind the flints existence has also been suggested in a number of instances. Some have not been surprising, whereas others such as weaving may never have been considered. The lack of a fully integrated approach has generally encouraged archaeologists to think that with evidence of metal tools what possible reason could there be for a flint assemblage to exist in the Iron Age? As a result, we treat any flint assemblages from Iron Age contexts as a separate entity from the other forms of contemporary material culture with which it was found. It is strongly suggested that this should not be the case in future analyses.

2. In what capacity did Iron Age flint utilisation continue?

Chapter 2 noted that in the Late Bronze Age flint utilisation was solely within the realm of the domestic sphere. This situation was brought about by a number of factors relating to broader social change and was not solely due to the introduction of metals and the metal replacement theory.

2 a) What do we know about the place of flint in Bronze Age society?

Edmonds (1995, 139, 187, 188) and Herne (1991, 72) were both quoted in Chapter 2 (page 21-21) regarding their alternative views on the changing social role of flint rather than simplistic functional replacement of flint by metals. For millennia, flint held the role as the prime material for functional implements and was also used as a valued status commodity, both as a raw material and through the forms into which it was fashioned. The shifting of its significance into the domestic sphere during the later Bronze Age has been regarded as a form of obsolescence (Edmonds 1995, 188). In taking this view we have learned very little about flint from later Bronze Age contexts (let alone the post Bronze Age) in the last twenty years after what looked originally like promising breakthroughs by Ford and others (1984) and Herne (1991). Edmonds, although supporting the view of a gradual decline and abandonment of flint technology, has presented some interesting notions regarding the changing role of flint. Along with Herne's (1991, 67-68) thoughts on less formalised toolkits Edmond's (1995) ideas have guided my own thoughts on the role of flint in the Iron Age.

The largest social change which took place in the Late Neolithic and Early Bronze Age was the move towards the outward expression of individual social identity and status. Rather than large monumental structures or communal burial reflecting identity and status, land boundaries, individual burials mounds and new varieties of material objects and raw materials were utilised to make statements about self and society (Bradley 1998, 145-6; Edmonds 1995, 139). It is in this widespread and multi faceted change that the role of flint began its shift from a 'valued commodity' to a purely functional one. Although this argument is the most well rounded of the theories for the decline in use of flint I also find it unsatisfactory. Once flint has been noted to fall within the realm of domestic status it appears that it no longer seems appealing to study. Given that the domestic element forms the major sphere of material life it should instead offer an exciting prospect for research. A purely functional flint assemblage does not mean that it lost its 'value' in the community where it was used, just that its perceived role changed. This notion does not appear to have been considered in published discussions on the subject and is an issue I feel has deeply hindered our need to research the domestic nature of later prehistoric flint assemblages.

2 b) How had flint technology changed through the Bronze Age and how could assemblages and technology be characterised by the end of this period?

As flint utilisation shifted solely to the domestic sphere during the Bronze Age and by the end of the period its products had become a purely functional implement type, the technology used to produce such pieces became simplified and less varied. The general consensus has been to suggest that knowledge of lithic technology and techniques used were in general decline, resulting in progressively poorer workmanship. I would suggest that this was not fully the case. We do see a less varied and simplified form of flint technology being utilised at the end of the Bronze Age, yet we can still see certain characteristic similarities between assemblages.

From analysis carried out in the sources discussed in Chapter 2 we can see that flake morphology increasingly became less varied, preferring shorter, broader flakes, which were perhaps a result of an increase in direct hard hammer percussion evidenced by the presence of pronounced bulbs of percussion. There also appears to be an increase in obtuse flaking angles and the production of thicker flakes. Retouch was increasingly kept to a minimum and flint assemblages also became less varied, evidenced by the reduced number of diagnostic implements to a simple list of scrapers, points, knives, rods, simple cutting tools and miscellaneous retouched pieces. With the change in flake shape and the composition of the assemblages themselves, coupled with an increase in what are considered poor quality knapping results, flint utilisation and technology has been viewed as 'on its way out' by the end of the Bronze Age period and as such it became something not warranting detailed analysis or consideration of the part it continued to play within contemporary material culture.

Column A in table 9-1 presents an amalgamation of the characteristics observed by a number of analysts researching later Bronze Age flint technology in Britain. This has been compiled to summarise what was known about these assemblages prior to the current research into Iron Age flint technology.

Table 9-1: A – known characteristics for middle - Late Bronze Age flint assemblages based on sources presented in Chapter 2. B – suggested criteria and characteristics that should be used to establish a typology for Iron Age flint assemblages.

A. Current knowledge on the observations made by analysts on later Bronze Age assemblages	B. Characteristic and criteria suggested for latest Bronze Age and Iron Age flint assemblages based on observations in this current study
• Utilisation of highly localised raw materials – some of which may be of very low quality • Possible evidence for re-cycling of lithic material	• Local or immediate sources of chalk/pebble flint from surface collection, primarily complete or broken nodules, but evidence for re-use of old knapping material • Evidence for re-cycled material – avg. 10% • 85% avg. of knapped pieces are fresh suggested by nature of sealed deposition in IA deposits, majority of remaining are only very slightly recorticated
• Generally small assemblage numbers	• Generally small assemblage numbers but vary according to excavation type and methodology (<100 – c. 5000)
• Simple core / flake technology, employing hard hammer, direct percussion	• Multi platform core and broad flake technology • Flake core ratio - avg. of 20-30 flakes to a core per assemblage • Hard hammer percussion predominant evidenced by 78% avg. pronounced bulbs of percussion • Using broken flakes where the proximal end is present does not affect the % variation much (± 0.5-7%)
• partial use of cores evidenced by the low number of removals from a core platform and per core with no evidence of platform trimming or rejuvenation	• Cores not heavily utilised, evidenced by cortex remaining, often very few flakes removed and the breaking open of nodules to create suitable platforms. • Majority of cores are multi-platform types with irregular turning of the core to find a suitable platform • No evidence of platform preparation and virtual absence of core rejuvenation – where it is present it is evidenced by a dorsal ridge core rejuvenation flake often to remove a unsuitable ridge or projection rather than tablet form • Cores have a bashed appearance sometimes through unsuccessful removals, or from perhaps attempts to smash a core to produce a flat platform • Core fragments are higher in number (may have been classed as debitage in many older reports)
• Obtuse striking angles, yet remained constant despite the thickness of the flake removed and the bulbar angle increases marginally between the Late Neolithic and the Late Bronze Age	• Data appears to reflect similar patterns as those observed in Late Bronze Age assemblages
• Thick, wide striking platforms, usually single faceted (flat) primarily due to the natural fracture of material used as a platform • cortical butts were more common on larger flakes • evidence for prepared platforms on butts were totally absent	• Thick, wide striking platforms where 70% avg, are single faceted suggesting little or no core preparation • 10-45% of striking platforms are cortical • A majority of scrapers and cutting flakes appear to have been chosen from flakes with cortical butts
• The thickness of unmodified flakes remained stable, but those chosen for scrapers increased over time from the Later Neolithic to the Late Bronze Age	• Thicker flakes did appear to be have been chosen for scrapers, whereas irregular and chunks appear to have been used for points and sharp edged flakes for

	cutting flakes
• Flake morphology became less varied with predominance for short, broad flakes – L/B ratio 1:1	• Short, broad flakes with majority fitting into 40mm flake class system • Breadth often exceeding length • 98% avg. flakes in an assemblage • Virtual absence of true blade/bladelets, where they are higher in number this is with other factors included relating to a mixed period assemblage • Majority of flat bulbs of percussion relate to blade-like flakes
• Irregular dorsal flake scar patterns suggesting the multi rotation of a core and a different platform used to the previous	Dorsal scar pattern/type (DSP/T) • 70-80% of flakes have irregular dorsal scars patterns • <8% have 90° dorsal scars which reflects core rotation scars • Very few parallel scarring, but those observed are often blade or bladelet reflecting mixed or residual element of assemblage Dorsal scar value (DSV) • DSV of '0' is very low reflecting the number of primary flakes present • DSV between 1 and 3 are evenly spread highlighting the random use of core material, whereas earlier assemblages with high core utilisation have a higher number of DSV of 3
• A high instance of step or hinge terminations (the sharp termination of flakes decreased over time with c.44% on average terminating with a feathered edge)	• 40-50% of flakes had hinge, step or plunged terminations (primarily the former two) mainly on broader flakes • 10-25% of flakes evidenced negative hinge scarring
• A predominance of secondary and inner flakes - an increase in cortex left remaining on pieces	• <10% are primary flakes • 57% avg. are secondary flakes
• Ring cracks were common on flake butts (29%) and core platforms • The presence of incipient cones of percussion on core striking platforms • Stress scars were common on dorsal surfaces and negative facets on cores	• <10% of pieces evidenced rings of percussion • <5% of pieces evidenced incipient cones • 22% avg. evidenced bulbar scars • observed stress scars on some dorsal surfaces
• A high instance of chips and chunks	• Debitage figures are variable according to collection methods
• diagnostic tools – scrapers, awls/points, knives, rods, simple cutting tools, miscellaneous retouched pieces	• <1% of assemblage are traditional diagnostic tool forms • 14-20% of assemblage retouched or utilised • functional tool types un/diagnostic – scrapers, points, cutting flakes, multifunctional (scraper-point and scraper-cutting flake) and miscellaneous retouched • No apparent patterning in relation to where retouch applied, but it is minimal and often appears to facilitate grip rather than related to function. • 70% unmodified flakes in secondary sources is reduced to 44% avg. in primary sources. This is due to the identification of utilised and undiagnostic tools

2 c) Can we characterise the morphology and technology of an Iron Age flint industry?

Column B in table 9-1 presents the results from the current research regarding a number of criteria and characteristics which were considered relevant to later Bronze Age flint assemblages. These are considered valuable points for consideration in building a typology for Iron Age flint assemblages. There are, however, a number of points that require further discussion.

Through a detailed analysis that not only looked beyond observed diagnostic elements of an assemblage, but also observed new patterns and forms, I have been able to build on the observations made on Bronze Age assemblages and highlight new and interesting forms of tool type. In addition, it is suggested that what was once considered a declining technology, because of a reduction in production and use of flint, resulting in quality technological methods not being passed on, should now be viewed as a much simpler form of technology which has had the need for stylistic value and core preservation removed.

This expedient form of technology that exists solely within the domestic sphere is wholly appropriate to the role played by flint implements in contemporary Iron Age society. By using a simple but effective technology where it is not important to regularly produce particular shaped flakes or to have to consider the productive use of the core, the time and effort applied in producing practical functional tools is well reflected to the rationale for its production. Rather than viewing this as a diminished technology we should be approaching this as a *different* technology embedded within the domestic sphere. In doing so I have been able to observe regular patterns which highlight the expedient nature of a technology that still managed to regularly produce very rudimentary, robust, functional implements of a certain type. Given that these patterns and tool forms do appear to regularly occur I do not think that we can suggest that the knowledge of producing quality flint tools has been lost, but instead that knappers were using their knowledge in a different way, so that time was not spent where it was not needed. As this practice continued from the Bronze Age into the Iron Age it perhaps became the norm and over time, certain previous techniques may well have been lost. However, this is not restricted to the Late Bronze and Iron Age as throughout prehistory we see old techniques replaced by new methods; why else do we see such a variation in flint industry types from different prehistoric periods?

2 d) Will we be able to identify easily contemporary Iron Age flint assemblages from earlier industries?

At the beginning of this research it was imperative to use flint assemblages that had come from sealed Iron Age contexts in order to combat some of the residuality arguments that had dominated previous discussions. However, if we are to move forward and study Iron

Age assemblages as a common occurrence we need to be able to apply a methodology that can identify Iron Age flint assemblages and allow us to separate them from earlier industries when contextual data is ambiguous or where we have a mixed assemblage present. The additional elements of material culture associations presented below provide valuable data regarding the identification of Iron Age flint utilisation, but as we have seen in Chapter 7, this is not always possible because of factors relating to preservation of material or partial excavation. In such cases we also need further clarification of the assemblage typology.

The data presented in column B in table 9-1 does offer a number of characteristics and attributes that will aid such identification. However, there are a number of elements which if missing from the data make distinction from later Bronze Age and in some cases late Neolithic assemblages difficult (for example, if the data was primarily based upon the length breadth data of flakes and bulbs of percussion, which has been common place in the past). In such cases what else can we use to support an Iron Age date?

The most obvious factor is the presence or absence of all traditionally diagnostic implements such as arrowheads, microliths, and known period-type scrapers, points and knives. Unless we are dealing with a primary knapping site where no secondary working has taken place (usually an earlier form of practice), the absence of such pieces should ring some alarm bells. Yet if an occupation site does have a long history of multiple phases or a small element of residuality present we may see these pieces in very small numbers as evidenced by the overall site data discussed in Chapter 5 and the mixed assemblage from North Bersted discussed in Chapter 6. Therefore, we need to either pull apart the mixed elements of the assemblage to identify each discrete assemblage deposited on the site, or tackle the argument of residuality in other cases.

A number of other factors presented themselves in the research that will prove to be useful in the varied circumstances that make analysis and identification difficult. In the case of core reduction and flake technology, dorsal scar patterning was particularly useful, especially when cross-referenced with flake/blade morphology. In particular dorsal scar pattern (DSP) where the direction of scars were plotted against the dorsal scar type (DST) showed that virtually all blade/bladelet scars were found on pieces with parallel flaking rotation usually associated with earlier Mesolithic and early Neolithic industries, or those that are predominately blade technologies. At North Bersted we knew that there was a small element of a residual Mesolithic assemblage from the few diagnostic bladelets present which accounted for a number of the parallel DSP, but we also wanted to attempt to extract the known Beaker element from the assemblage. I believe that this technique may have been appropriate in the case of North Bersted, yet I cannot conclusively prove it without further examples to cross reference the data with.

The data on cores from both the published and primary source analysis have suggested that cores are primarily multi-platform and have a crude bashed appearance. Healy (2000, 206) went so far as to suggest that a number of cores from Potterne were perhaps test nodules, based on the few removals from each one. Yet the analysis overall suggests that fewer removals per core are a common occurrence in Iron Age assemblages, with a number of cores exhibiting less than five removals per piece.

The most common form of core classification used is that created by Clark (1960) based upon the number of platforms and the direction from which flakes were removed. This method was applied to the cores analysed in Chapter 6 and despite the crudity of a number of pieces, they could still be assigned according to Clark's core class system. However, with the exception of separating particular core forms (such as Mesolithic types) the cores were representative across a number of the chronological classes. How then could we distinguish Iron Age cores from Neolithic or Bronze Age material?

As a comparison, cores were also recorded using Ford's core class system (1987) which was created with later prehistoric assemblages in mind. This system was based on the number and type of flake or blade shapes removed from each core, and explicitly included core fragments and 'bashed' cores. The core data presented in Chapter 6 illustrated how in using the two methods along side one another, we gained important directional and platform information from Clark's system, whilst Ford's better highlighted the simplistic, broad, flaking technology of Iron Age core reduction strategies, including the high incidence of core fragments and 'bashed' core material. It is therefore suggested that we do not abandon Clark's system in identifying Iron Age cores as the information gained can be cross referenced with flake striking platforms and dorsal scar patterns, but that the Ford system is crucial and should be used where ever possible to identify the simplistic technology used and whether or not cores were used to their full potential.

The absence of traditionally diagnostic implements from known earlier industries such as those mentioned above, is one method of dealing with the retouched element of an assemblage and as table 9-1 indicates less than 1% of an Iron Age assemblage has traditionally diagnostic tools present. In contrast, 14-20% of an Iron Age assemblage can be expected to have a retouched or utilised element. A large proportion of these pieces are undiagnostic scrapers and points and utilised flakes which do not fall into any of our current typologies. How then can we categorise and identify them as Iron Age forms in the future?

Fasham and Ross (1978, 61) devised a system for later Bronze Age forms of scrapers and 'borers' (points) which was applied to the primary analysis of the four assemblages in Chapter 6. Scrapers have traditionally been identified by their appearance and position of retouch, such as short end scraper. Fasham and Ross's two group system based on the profile of flakes used and the type of retouch, enables scrapers to be distinguished between those with fine workmanship (potentially implying a deliberate or conscious style) and those where a robust flake and rough but functional retouch is applied. Where all scrapers fall into Group 2 it may be inferred (alongside other factors) that the scrapers belong to a Late Bronze Age or Early Iron Age date.

The same applies to Fasham and Ross's (1978, 61) four group borer system where the groups are based upon the type of piece used for modification and the nature and placement of the retouch. The majority of pieces analysed fell into the Group 4 class but it was noted that not all of these pieces were formed on a long thin point that protruded from the flake. Many were made on suitable chunks such as those from Budbury. It is suggested that this system does aid in the identification of undiagnostic points, particularly those with minimal retouch and including those which possess almost natural points. However, I would suggest that a fifth group is added to the system that would separate those from group 4, from the retouched chunks that have usable points.

Having found these methods to have been very useful in identifying tool types from undiagnostic forms, I have suggested a four group class system for cutting flakes based on the descriptions made during primary analysis. As with the Fasham and Ross (1978, 61) system it is based on the qualitative description of the technology used and the shape and type of piece chosen for use. Cutting flakes have long been relegated to the class of 'miscellaneous retouched pieces' or 'utilised flakes' yet their common occurrence in later prehistoric assemblages has lead me to study them in detail to establish whether these previous descriptions are sufficient or whether they are better treated as distinct tool forms. As these descriptions have been derived from primary research, quantities for each type have not been generated to present in this thesis. However, it is strongly suggested that these groups be applied to future research to begin to identify variation in later prehistoric cutting flake types.

In addition to identifying variation in cutting flakes, variations in multi-functional implements have also been observed. Herne (1991) highlighted an increase in these undiagnostic pieces in his analysis of the Middle Bronze Age assemblage at Grimes Graves, yet felt that they should not be classified into types. I disagree with his conclusion: by identifying the common functional forms found together we may begin to identify certain activities for which they were used. The research identified that the most common forms found together were scraper-points and scraper-cutting flakes. Thus, by integrating Fasham and Ross's two systems, the cutting flake system and the identification of multi-functional types, we may begin to identify wholly new diagnostic tool forms for late Bronze and Iron Age assemblages.

3 What was it used for?

3 a) Which activities does it appear to have been associated with? And 3 b) Are there any activities which regularly occur?

From the evidence available it has been observed that the primary association of flint appears to have been with worked bone and antler. This association was present strongly at Potterne, Budbury and Meare Village East and less emphatically at Segsbury and Winnal Down. The remaining sites of Liddington Castle and North Bersted did not produce any evidence for worked bone and as a result potential associations are unobservable. The weak links at Segsbury and Winnal Down are also the result of the relatively rare occurrences of worked bone recorded.

Associations with weaving objects such as loomweights and spindlewhorls were also common. It is additionally interesting to note that the patterns of strongest, weakest and absent association with respect to weaving matched those for worked bone. In both cases however the strongest links are due to a number of favourable factors affecting the overall retrieval of artefacts. These were principally good preservation, and large scale excavation, coupled with detailed spatial recording. In the case of weaving associations it is at present unclear whether the association reflects little more than a variety of domestic artefacts found together in a domestic area, or whether there may be direct link between flint tools and the weaving process. This question certainly merits further study and although little more can be suggested until more associations are investigated, observations in support of bone and antler weaving artefact associations at Meare Village West are promising (Orme *et al.* 1981, 62).

Surprisingly, shale working was only found to be strongly linked at Potterne, despite the known flint/shale associations from the Purbeck industries that implied that this may have been a common associated activity on a number of sites (Calkin 1948; Davis 1936; Woodward 1987). This may yet prove to be the case as a number of sites await re-analysis, though it may in fact reflect a much more regional or site specific activity: Purbeck, may be the exception rather than the rule. Three of the sites presented here had no evidence for shale artefacts at all and the remaining three had so few in number that no direct contextual links to flint could be made.

It was considered that if there was a strong indication that flint may have been utilised in bone working activities, then it may also have been involved in butchery processes. Potterne and Winnal Down have the strongest associations based upon the quantities of bone in each phase as compared to the ratio of possible flint implements to iron implements. Weaker links were also observed at Meare Village East and North Bersted, yet in *all* of these cases the suggestion remains tentative as it is extremely difficult to establish from butchery marks whether they were made with flint or metal implements. It would be unwise to rule out the possibility of flint utilisation in such an activity just because metal blades are available, but the association of flint use with butchery requires much further analysis than is presented here. However, in support of the association a butchery experiment was carried out using both flint tools and iron knives (Appendix 6), where the butchery process was equally successful using both implement types. As a result, it is suggested that neither material type dominated butchery activities (although each material may have been exclusively used on independent sites), but perhaps complemented each other.

In addition to the activities highlighted from the published and primary sources one last activity is brought to attention that deserves further detailed research. Based on the overall site distributions (fig. 9-1) there does appear to be two dense clusters of sites using flint tools on the West Sussex coast and the Isle of Purbeck, Dorset. These clusters may indeed prove to relate to an increased level of archaeological activity, yet I would suggest that these clusters may relate to Iron Age salt production, where flint implements may have been used to scrape the salt from containers where iron knives would rapidly corrode. The known salt working areas in the Iron Age correspond exactly to these two areas and the suggestion appears to have some relevance when we acknowledge that the Thames and Severn estuaries and the Wash were also salt working areas, and they also show clusters within the observed distribution. However, before we take this point further it is important to acknowledge that the Cornwall peninsula and the East Anglian Fens were also areas of salt production where we have little in the way of any notable site distribution (Taylor *pers. comm.*). It is also the case that no strong evidence to support this correlation was provided by the sites analysed in detail (a few briquetage sherds were recovered from phases 4 and 6 at Winnal Down (Chapter 5, 102)). However, the correlation is intriguing and may warrant further research.

A clear conclusion can be drawn regarding the subject of activity association. Whether a link is strong, weak or not evident relies heavily on the preservation of materials, the extent of excavation, the spatial recording methods employed and lastly the detail of reporting the evidence. A strong association may appear even with the smallest number of artefacts if the preservation and recording methods are good enough, yet in the majority of cases, associations cannot be recognised if we are lacking in either evidence or detailed records.

4 Why was flint chosen to produce implements when metals were available?

4 a) Was it used against metal counterparts or in conjunction with? 4 b) Do the flint implements have the same functions as metal tools at the sites case studies or are they different to each other?

In all cases flint implements coincide with the use of metals whether the metal artefacts take the form of personal ornaments, decorative pieces or implements/tools. In order to tackle the traditional view that flint *only* continued to be utilised where metal counterparts were either unaffordable or inaccessible we needed to identify the main functions of implements made from the two material types. In general bronze appears to have been used primarily for adornment items or vessels during the Iron Age, whereas iron was utilised mainly for heavy duty artefacts such as agricultural and tree felling tools and anvils, alongside domestic implements, such as nails and personal adornment.

Regarding bronze, the exception to this observation came from the earliest phases at Potterne where bronze was utilised for implements. This was evidenced by four blades and seven awls, whereas by the Early Iron Age we only have evidence that it was used for decorative pieces, suggesting that the functional use of bronze changed during the transition into the Iron Age. Furthermore, all of the bronze awls from Potterne came from pre-6 zones whereas the three flint points came from zones 9, 6 and 4, possibly indicating a shift from bronze to flint points over time. This evidence from Potterne is remarkable in that it turns the traditional assumption (that metals replaced flint on a functional basis) on its head, thus supporting the whole emphasis and ethos of the current study.

The existence of scrapers is apparent at all sites and there appears to have been no functional metal counterpart for this object. This tends to support traditional views regarding the longevity of its existence, however, other tool types either saw a change in material type or could be found in both flint and metal form. For example, flint points appear to increase at Potterne when their bronze counterparts appear to decline indicating a change in preference or a forced change with regard to material availability. Alternatively, at Winnal Down where both iron and flint were used for a variety implements, the only domestic iron implements were blades. These appear to coexist with utilised flakes (potentially cutting flakes) therefore suggesting that the two types of cutting tool were utilised for different tasks and/or different materials. Also from Winnal Down, flint points were found to increase in number at a time when scrapers decrease. Again, there was no evidence for iron points at Winnal Down from other phases, suggesting further that different raw materials, irrelevant of accessibility or cost, were chosen for specific tasks depending on the activity and the density of the material they were to be used on.

In summary, flint was used for primarily for scraping, cutting and boring functions, whereas iron implements were used primarily for cutting and heavier agricultural and carpentry based activities. Bronze appears to be predominantly utilised for decorative items probably due to the softer nature of the alloy. This conclusion supports the argument for the continued use of flint until iron was so widespread and versatile with regard to form that it completely over took the place of flint.

5 Where was it used?

5 a) Can we define any regional patterns of flint use or was it widespread across the research area?

Figure 9-1 shows the research area for this study and the overall distribution of the 81 sites chosen for examination. The distribution does not include sites with obviously earlier flint industries, nor any sites where flint was not represented. Given the large number of sites and the largely pragmatic choice of overall study area, an analysis of potential zones of utilisation and non-utilisation is beyond the remit of the current study. One could easily pick out a number of published sites which do not record any flint assemblages, both in the obvious gaps presented in figure 9-1, or in areas where potential flint use appears more widespread; Gold Park, Dartmoor (Gibson 1992), Berry Down, Newton Abbot (Gallant & Silvester 1985) and Wappenbury Camp, Warwickshire (Stanley 1958) to name but a few.

The decision not to delve into a flint use and non-use investigation was based upon several factors. First, to investigate and plot the large number of Iron Age sites with or without flint assemblages for the area chosen here, demands an intensive and systematic study of its own to do it any justice. Second, such an investigation would require several archaeological biases to be taken into account for individual sites *and* regions, which requires further study into current and past archaeological practices. Such areas would include the recovery of artefacts where diagnostic pieces dominate; the excavation notes written by Bullied and Gray for the payment of recovering certain artefacts is a prime example where recovery biases have taken place (see MVE chapter 5). Also, the identification and collection of non-diagnostic flints and variance in the density of archaeological excavation. Third, the current study must come first in order to establish a foundation in which to both generate a working practice in the future collection of such assemblages and to re-analyse the wealth of material in current archives in order to identify which Iron Age sites really do have use and non-use of flint.

In view of these points, the following provides a brief discussion based on the distribution presented in figure 9-1 for the Iron Age sites with potential flint utilisation taken place. In addition, Appendix 7 makes an attempt to consider the utilisation of flint from these sites through Iron Age period, but in both cases the notions presented at this stage are largely reflective of archaeological practice. It is also important to note that three of the 81 sites could not be located precisely on the map as their exact location (grid reference) could not be found. These are Barton Court Farm (settlement), Oxon close to Abingdon Trading estate (see figure A7-1), Erw-wen (enclosure), Harlech, which is very close to Moel-y-gerddi (see figure A7-2), and Sheepleights (settlement), Isle of Purbeck, Dorset near Kimmeridge and Acton (see figs. A7-2/A7-4).

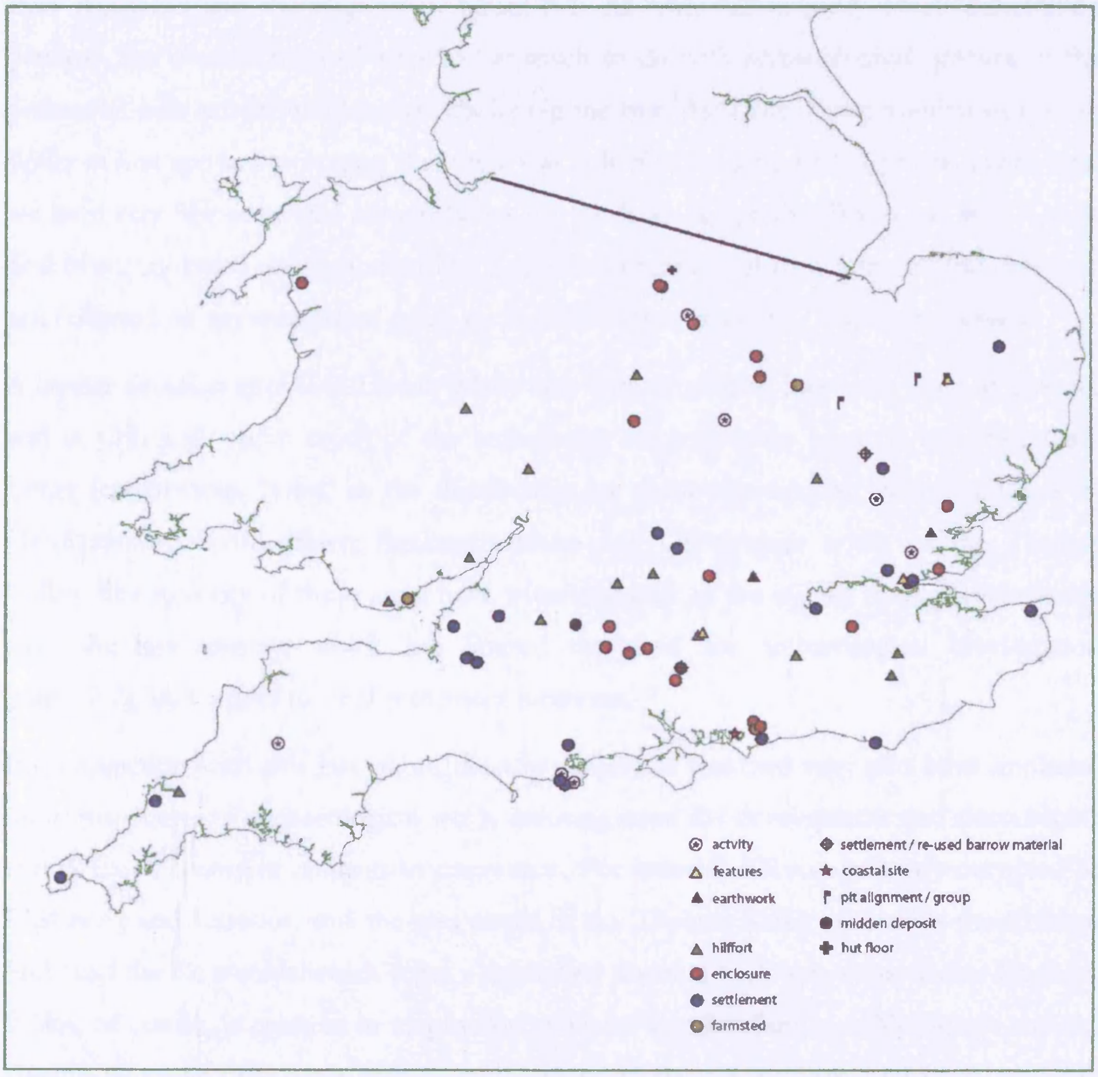

Figure 9-1: Distribution of the 78 sites with known grid references, plotted by their site description. The line depicts the extent of the research area – everything below the line.

The first impression one gains of the overall distribution is that there appears to be a very general spread of flint utilisation with few obvious areas offering little representation, for instance, Wales and Devon. The first question to ask of this data is how true a picture is it? Put simply, to what degree have research agendas (including my own original decision as to where to focus my study) and developer led excavations served to shape the picture presented in figure 9-1?

The first observation is that despite the distribution only including Iron Age sites that have potentially contemporary flint assemblages, the spread of sites does reflect the same pattern shown by a general distribution map of Iron Age sites for the region. This is interesting inasmuch as it suggests that flint utilisation was not restricted to an isolated zone or area within the Iron Age. However, bearing in mind the earlier caveat, there are a couple of important points to consider regarding the general relationship between any distribution of Iron Age sites and those given in figure 9-1. As with the majority of all distribution patterns, the identification of sites has as much to do with archaeological practice in the present as with activity and location choices in the Iron Age. The sparse number of sites in Wales at first appears to suggest that there was little flint utilisation taking place, but in total we have very few excavated sites in Wales for the Iron Age period. Wales has seen a great deal of survey-based research recording a significant number of Iron Age sites but these are not reflected on any map based solely upon published excavations (Taylor *pers. comm.*).

A similar situation applies in Devon where very little excavation has taken place in general, and in Cornwall where much of the archaeology excavated has been of an earlier date. Other less obvious 'holes' in the distribution are those represented by the counties of Hertfordshire, Bedfordshire, Buckinghamshire and Oxfordshire north of the Thames Valley. The majority of these areas have witnessed little in the way of major development over the last century, which has limited the need for archaeological investigation particularly with regard to rural settlement locations.

In conjunction with this last point, the topography of the land may also have impacted upon the degree of archaeological work, reducing need for development and encouraging survey based strategies rather than excavation. For instance, Devon is largely occupied by Dartmoor and Exmoor, and the area north of the Thames Valley comprises the Chiltern Hills and the Cotswolds which form a watershed across a large area of southern England. Wales, of course, is extreme in its physical make-up due the Cambrian Mountains and the Brecon Beacons. One other area could be added to this list as there appears to be a gap between the Dorset coastal sites and the Avon valley where the North Dorset Downs may be a factor. In areas such as the Fens the fact that large areas were either under water or marsh land until recent centuries has also had an impact upon observed distributions. The last area which appears to be poorly represented is Kent and East Sussex and here the fact that large areas of the Weald were largely forested until the Middle Ages, may have been an important factor limiting Iron Age settlement (Taylor *pers. comm.*)

The 'holes' then may be accounted for in part by archaeological research bias and topography. But what of the observed distribution? Can we account for the areas that appear to have a good representation of not only Iron Age sites, but those depicted in figure 9-1, with potential Iron Age flint use? Again archaeological practice does account for most of the patterns seen. Essex for example has witnessed considerable development over the last century combined with a very high standard of recording and publishing excavations. Similarly, the Thames Valley has received a large amount of archaeological attention through the gravel extraction industry where often considerably large areas are opened for excavation. A good example is the development of Eton College Rowing Lake at Dorney, Bucks, where the extraction and sale of the gravel provided payment and development of the lake.

Wessex, on the other hand, has always attracted a great deal of archaeological interest despite being predominantly downland. As a result, the amount of archaeological excavation carried out in Wessex is higher than similar topographic areas where much of the archaeological work is survey based.

Therefore, given that the 'holes' in the distribution appear to reflect archaeological practice rather than the utilisation/non-utilisation of flint (in general the distribution reflects an overall spread of use), is the obvious conclusion that flint utilisation in the Iron Age forms part of everyday practice rather than a specialised or restricted use? The associated contextual materials and reflected activities presented in this study strongly support the former which is in turn reflected in the general distribution pattern in figure 9-1.

5 b) what type of site is it primarily recovered from?

In Chapter 3 a number of theoretical issues were highlighted that it was deemed important to consider during the analysis of the flint assemblages. One of these concerned the nature of sites where flint assemblages appear to occur most frequently. It was noted in the preliminary research carried out by the author prior to this thesis that flint utilisation appeared to be contained solely within the domestic sphere. The recording of site type during the current research may serve to clarify this relationship. As many researchers have noted, identifying the domestic and non-domestic nature of a site is not as easy as was once thought. Our archaeological understanding of Iron Age sites has moved beyond simple equations between 'domestic' lowland settlements and enclosures and upland hillforts with military/ritual functions. We now know that domestic activity took place at all settlements and frequently coincided with military, ritual or industrial activity (see Chapter 1, 5).

Therefore flint utilisation can potentially be found at *any* type of site where domestic activities have taken place, whether this be a small farmstead, enclosed settlement or hillfort. Any observed difference in flint use may therefore ultimately lie in the amount and type of domestic activity taking place in a given site types.

The 81 Iron Age sites used in the research had their overall descriptions transcribed directly from the published sources. In total 13 descriptions were generated, but before considering their distributions some clarification is needed regarding some of these categories. Although the primary function of hillforts is still under debate, we generally understand them to be settlements of a certain size located on top of a hill and surrounded by a network of earthworks. The definition is debatable as often many enclosed hilltop settlements are termed hillfort but in fact correspond to enclosures on high ground, for example, in many parts of Wales. 'Settlements' in this study are understood to correspond to areas occupied by a group/s of people without any identified enclosure or defensive boundaries, whereas 'enclosures' are settlements with some form of boundary feature. A 'farmstead' is separated from the latter two on the basis of the presence of a single (or small) domestic style dwelling, yet is considered a subclass of 'settlement'.

'Activity' suggests that no evidence for structures was recovered and that material finds were the only signs of an Iron Age presence. 'Features' correspond to limited structural evidence apart from a few features which may suggest possible occupation. 'Earthworks' are a similar category to features, where artefacts have been found in, or on, a partially surviving earthwork or linear feature enabling a relative date to be produced. The categories of 'midden', 'hut floor', 'coastal site', 're-used barrow material' and 'pit alignment/group' are self explanatory.

It should be noted that all of these categories are based on the descriptions given of the sites by their original analysts. As a result there may be some blurring of certain categories when labelling sites of a similar nature such as settlements and enclosures, and the question must be asked whether 'hillfort' is the correct term for some sites. Furthermore, although the remaining categories of midden, activity, features etc. are generally few in number, I feel that this is more to do with their chance location and identification in archaeological practice, particularly since the rise of developer led archaeology. Lastly, those falling under the last three categories of figure 9-2 may be due to the poor preservation of their surroundings, and it is probable that a number of these sites could be allocated to one of the three more dominant categories if they had not been truncated or had been excavated on a larger scale.

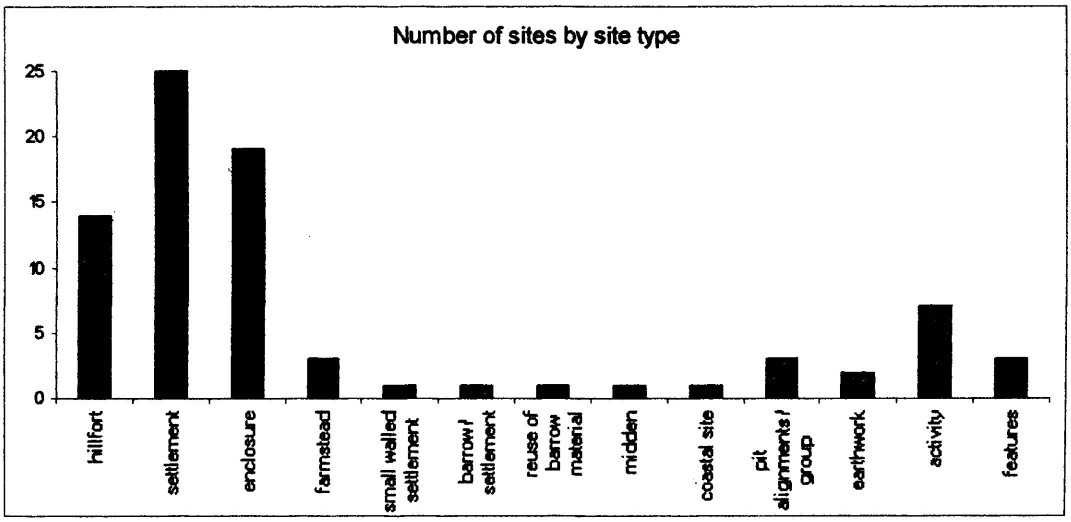

Figure 9-2: The 81 sites grouped by their site type descriptions.

Despite the above considerations figures 9-1 and 9-2 clearly shows that three main site types stand out; hillfort, settlement and enclosure. Settlement sites are the most common (25), followed closely by enclosures (19). The single small walled settlement could potentially be added to the latter category as could farmsteads to the more general settlement class, bringing the totals to 28 and 20 respectively. With a total of 14 sites, hillforts were the next main group to be noted. The fact that hillforts are fewer in number than the former appears to suggest that flint was not utilised to the same degree at such sites, yet it might be expected that there should be fewer hillforts represented against settlements due to the nature of such a large site. There are a few factors to consider however, before drawing such conclusions.

The distribution of the site types again reflects of the amount of work carried out in each area, the terrain and the preservation of each site. The few sites investigated in Wales are dominated by hillforts, probably due to the research interest in excavating such structures and their visibility in the mountainous terrain. It is likely that the latter is the reason for the excavation of the two enclosures Moel-y-gerddi and Erw-wen, near Harlech in north west Wales (Kelly 1988).

Hillforts appear to define three bands which can be discerned from the distribution of site type in figure 9-1 (seen more clearly in figure 9-3 (page 229) with the addition of the major rivers). A line of six hillforts are visible which sit on a network of Downs from the Marlborough Downs in the west, through the Berkshire and Hampshire Downs to the North Downs to the east. The Downs form a band of highland terrain that may have been chosen for the increased visibility in the landscape of hillforts with respect to surrounding communities. Two of these, Liddington Castle and Segsbury, both in Wiltshire, form part of a larger network of Hillforts on the Ridgeway which runs across the Marlborough and

Berkshire Downs. The latter sites are interesting as flint from Iron Age contexts has only been recovered from these two hillforts on the Ridgeway and not from the other hillfort sites. Was flint not used at the other Ridgeway hillforts or were the activities carried out at these sites different to those at Liddington Castle and Segsbury? Were there some other social or economic factors at work promoting the use of flints or metals at the other sites? It is probably more likely that flint was either not recovered or kept during the excavation of other Ridgeway hillforts, or if it was it may have been assigned to an earlier industry. The fact that the excavation of these two hillforts took place in 1976 and 1996/7 respectively may have had an impact of the retrieval and recording of flint implements from these two sites. Many flints recovered from hillforts in this area are derived from chalk and deposited in chalk and my observations of flints have suggested that flint recorticates at a faster rate in such deposits (supported by Young *pers. com.*). Although this should not indicate the age of flint artefacts, it has been used in the past as a factor to determine the contemporaneity of flint artefacts. As a result, Iron Age flint may have been deemed earlier as a result. This is a factor that may have wider implications for chalkland assemblages.

Furthermore, hillforts have generally never been excavated in full. Sections through ramparts and a couple of trenches in the interior are a common methodology. As highlighted with the Liddington Castle analysis (Chapter 7), we are probably missing large amounts of data due to the different locations used for different activities and depositional practices, which have only been partially sampled.

On either side of this hillfort band are groups of enclosures and settlements which appear to follow the Thames valley (which includes one earthwork) and to the south a group consisting mainly of enclosures following the Avon valley to the east and continuing across Salisbury Plain and along the lowland line of the Hampshire Downs. Both of these areas have witnessed a large amount of archaeological work over the years and the mixture of recognised site types reflects this, as does the pattern for the Essex and West Sussex clusters.

In the Midlands there appears to be a marked absence of open 'settlement' sites suggesting that flint was predominately utilised at enclosure sites. However, this pattern can again be explained by a bias in the archaeological record. Enclosures are much easier to spot in the landscape from either the visible remains of banks or, more commonly, cropmarks or geophysical surveys. Settlements, which leave much smaller signs of evidence, are much less visible. The Midlands is generally made up of a boulder clay formation and it is very difficult to observe smaller feature evidence such as post holes in this type of geology. As a result, enclosures may appear to be the only form of settlement type in this area due to the lack of discovered evidence to suggest otherwise. This factor has been further hindered by past assumptions that boulder clay would not have been suitable terrain to settle in for arable purposes and, until recent years, the limited nature of research into Iron Age settlement in the area (Clay 1996).

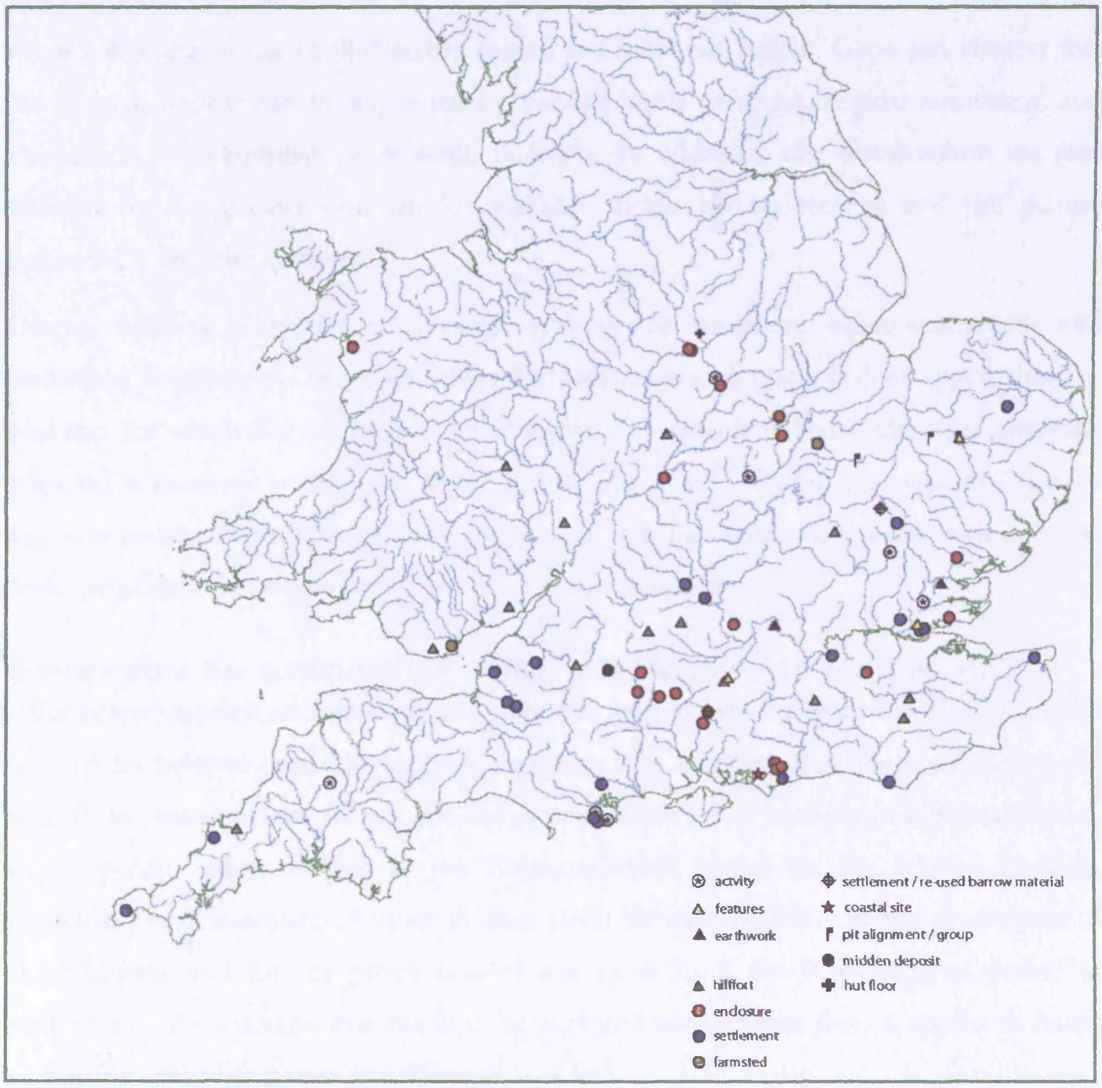

Figure 9-3: Distribution of the 78 sites with known grid references, plotted by their site description and the major UK rivers.

The observed differences and similarities between site types are interesting. Again archaeological practice can be argued to have shaped the settlement type pattern seen in figures 9-1 and 9-2. The overall dominance however, of flint use at 'settlements' and 'enclosures' does support an everyday role with flint use predominantly taking place at such sites, with commensurately less flint occurring on 'hillforts'. It is suggested however, that flint is not restricted to hillforts and open/enclosed settlements alone, despite the higher frequency of recorded occurrences, and that flint use is related to the type of activities carried out on individual sites. For example, until we understand the relationships and interactions between occupied/activity site types in more detail little more can be said, but it is hoped that what has been suggested constitutes to our future understanding on the topic.

5 c) Can the spatial patterning of use and non use allow for a debate on its continued existence?

The distributions presented for the general overview of sites and the site type distributions show a widespread use of flint across central and southern Britain. Gaps and clusters that do seem to appear can be explained by varying levels of archaeological excavation and publication, development or research interests. In addition, site distributions are also affected by site preservation and/or visibility within certain terrains and the picture presented is far from complete.

Despite hillforts being the most visible sites in the landscape, open settlements and enclosures dominate the site types where flint utilisation took place. It does appear that the activities for which flint utilisation played a role corresponds to those site types generally regarded as domestic settlements. When it does appear on hillforts, it is suggested that its role was mainly within the domestic sphere although flint could have been used in some craft specialisations *i.e.* shale working or textile manufacture.

6 When does the continued use of flint into the Iron Age end if at all?

After presenting data on the continued utilisation of flint into the Iron Age, it is important to consider how far into this period it persisted. It is accepted that flint continued to be used in an occasional, *ad hoc* manner throughout history. For example, it is known for its more specific industrial uses in the Romano-British period on the Isle of Purbeck, particularly at Kimmeridge, Dorset (Calkin 1948; Woodward 1987) in the production of shale objects, and for the production of gun flints from the Post-Medieval period to present day. The question that needs to be explored here is when does it appear to finally stop being utilised as part of the domestic tool kit?

It was expected that the 81 sites used in this study would produce some clear evidence for a gradual reduction in the use of flint through the Iron Age period. This, however, has been more difficult to assess than originally considered. Primarily, this has been because the majority of the sites span several periods through the Iron Age and into the Romano-British period. Without more detailed excavation and investigation of a majority of the sites used in the overview (fig. 5-1), the use of flint within each individual site cannot be adequately assessed by period. Further study is therefore highly recommended.

Appendix 7 attempts to bring some sense to the data, but information is too broad at present reflecting the span of multiple periods and the fact that only the earliest indication of activity can be tentatively relied upon. Therefore, although the appendix discussion is a useful starting point and illustrates some interesting issues, it is not reliable and requires that the sites are individually analysed before any specific dates can be applied to the flint use at these sites.

If, following the re-analysis of the remaining potential sites, the flints are deemed contemporary and the dates and distribution pattern of the 81 sites holds true, we must consider the fact that flint utilisation remained in use throughout the Iron Age at the same level of popularity as when it entered, restricted largely to the domestic sphere and particular activities. This in itself is an important conclusion and prompts many interesting new questions about Iron Age society and practices. With this in mind, when does flint finally see its abandonment as a usable tool? The title of this study does indeed present this query when it asks "*Iron Age flint utilisation in central and southern Britain: the last 'Stone Age?*' This research has not looked beyond the Iron Age and one might consider that with the infiltration of many new Roman technologies, economic changes, practices and social habits, that the Romano-British period saw this final stage.

It is my impression that during the Roman period in Britain flint does fall out of regular use, partly due the increase in the supply of iron, but also through the many social, technological and economic changes that Roman influence brought to the island, until it gradually became either a craft specific tool or was relegated to impromptu use. Certainly flint assemblages that have belonged to Roman or indeed post Roman sites will have suffered the same treatment as Iron Age assemblages have done in the past, insomuch as they have either not been recognised and automatically assumed to be residual, or at worst, perhaps not even collected if numbers were small and assumed to be insignificant residual material. Identifying *potential* sites for study from published sources alone will be difficult with regard to these issues. We may find, however, with further study perhaps following a similar format to this one, that flint continued at least well into the first century AD in the same manner which it appears to have done through the Iron Age. Indeed the observation of flint on Roman sites beyond the craft specific assemblages such as at Kimmeridge is not uncommon and many colleagues have passed this comment to me during this study. Sites such as the Roman villa at Keston, Kent (Philip *et al.* 1991; Philip *et al.* 1999) and the villa at Chignall, Essex (Clarke 1998) may be useful starting points from which to begin given that they both have Iron Age activity present and may provide valuable information regarding flint utilisation in the transitional phases of the Iron Age to the Roman. This is clearly something for future research to evaluate.

Summary of main results

To conclude, I have set out a number of results that I believe this study has achieved, and it is hoped they will lead to a better understanding on the debate of Iron Age flint utilisation and its role within contemporary Iron Age society.

1. Iron Age flint technology and utilisation did exist and such assemblages can be recovered and analysed in the archaeological record.
2. Iron Age flint assemblages can be identified by using the criteria and characteristics presented in the typology set out below, as long as the typology is used flexibly (as all typologies should be used), allowing for new forms to be identified (a more detailed version can be found in table 9-1):
    - → Local/immediate sources of raw material from surface collection.
    - → Evidence for recycling of material on average 10%.
    - → 85% average of assemblage is fresh suggested mainly by the sealed Iron Age contexts from which they are retrieved.
    - → Generally small assemblage numbers but vary according to excavation methodology (<100 – c.5000).
    - → Multi-platform core and broad flake technology where the following are observed:
        - Cores not heavily utilised and often broken open to produce suitable flat platforms, consequently many cores have a bashed appearance
        - High instance of core fragments in assemblage.
        - No evidence of core preparation
        - Hard hammer percussion predominates; 78% average of pronounced bulbs of percussion.
        - Flake to blade ratio has a 98% average in favour of flakes: short, broad flakes with breadth often exceeding length and majority fit into 40mm flake class.
        - <10% primary flakes, average of 57% secondary.
        - An average of 20-30 flakes to cores represented in assemblages.
        - Thick, wide striking platforms on flakes where an average of 70% are single faceted (flat).
        - Between 10-45% of striking platforms maybe cortical
        - 70-80% of flakes have irregular DSP
        - DSV of 0 is very low reflecting the number of primary flakes present, DSV between 1 and 3 is evenly spread reflecting the utilisation of the core material.
        - 40 – 50% of flakes have hinge, step or plunged terminations; 10 – 25% have dorsal hinge scarring.
    - → <10% have rings of percussion; 22% average have bulbar scars; <5% have incipient cones.

- → Debitage figures depend of retrieval methods.
- → <1% of assemblage is traditional diagnostic tool forms; however, 14 – 20% of assemblage is retouched or utilised producing functional implements.
- → Functional tool forms include both undiagnostic and diagnostic pieces where a variety of scrapers, points, cutting flakes and multi-functional (scraper-point and scraper-cutting flake most common) implements are expected along with miscellaneous retouched and utilised pieces.
- → Thicker flakes, often cortical, are generally chosen for scrapers, irregular flakes and chunks with natural points (where retouch emphasises the point) are generally chosen for points, and sharp edge flakes, often cortical, for cutting flakes

3. In conjunction with the above typology it is currently still necessary to recover flint material from sealed Iron Age contexts where other relative datable material is directly or closely associated until Iron Age flint assemblages are commonly recognised. Pottery, metals and quernstones have proved to be the most useful artefacts to date.

4. Flint utilisation is predominantly associated with domestic activities and sites.

5. Flint material appears to be repeatedly associated with bone/antler artefacts and loomweights and spindlewhorls suggesting that an association with bone and antler working and weaving. However, it is suggested a number of domestic tasks including butchery, food processing, wood working and hide working may be associated with flint implements based on the function of the flints. The organic nature of these activities makes it difficult to retrieve conclusive evidence.

6. Flint implements were used in conjunction with metal tools, showing its continued value as a functional implement. This is evidenced by the different nature of the functional use of each raw material.
   - → Flint was used for scraping, boring/perforating/graving and cutting functions.
   - → Bronze appear to be primarily utilised for decorative objects and vessels with some use for awls and knives in the Late Bronze – Early Iron Age.
   - → Iron was utilised both for decorative items and knives but predominately for heavier agricultural and carpentry tools (including nails), iron dogs and anvils until its use became more widespread. The only function for which both flint and iron appears to have been used is cutting where it is suggested that each material was utilised according to the task at hand.

7. Flint utilisation does appear to have a widespread use throughout the Iron Age and does not reflect a pattern based on the availability and spread of metals or the geological location of the main flint sources. However, despite the widespread use of

the material over central and southern Britain the distribution appears at present to reflect more the pattern of where archaeological practice has taken place.

8. Flint utilisation is recovered from *all* site types, although settlement enclosures and open settlements appear to be the most frequent. It is suggested that this is linked to the more domestic nature of these sites.

9. There appears to be no clear date at present when flint utilisation eventually became redundant. The evidence here shows that flint was used throughout the Iron Age: more precise location of flint in records may lead to better dating. It is known that flint has been recovered from a few domestic Roman, Saxon and Medieval sites, but it is proposed that flint utilisation as a common practice in domestic life phased out somewhere in the early Roman period.

The way forward

In order to move forward from this research and build on the results presented we need to tackle the *status quo* that appears to have filtered into our methodologies of flint analysis and notions of Iron Age behaviour. At present, there are three main problems within archaeological practice concerning Iron Age lithics,

- Lithic specialists are not trained to identify 'late' material.
- Curators and practitioners have no policy for dealing with the significant quantities of lithic material that are continually recovered from Iron Age contexts.
- Research into the early first millennium BC is incomplete as it ignores a possibly important resource material used by society at this time.

One of the primary advantages of this work is the potential for providing a methodological and research framework that can be developed in collaboration with regional and local bodies and academic institutions. This study has highlighted where evidence is lacking due to preservation problems or recording techniques, thus drawing attention to areas for future concern regarding archaeological methods and future briefs. In addition, this study will enable local research frameworks to provide information to further advance regional frameworks, thus aiding PPG16 interventions. It also provides a thematic context for the establishment of research criteria to be used for future archaeological institutions, by English Heritage, local authority curators and prehistorians. The following are a number of issues which I believe are integral to the expansion of our understanding of Iron Age flint studies and to a better understanding of their integrated role in Iron Age society.

First and foremost we need to tackle the traditional notion of flint replacement by metals by the end of the Bronze Age. However, to change the views of many we need to provide clear evidence to support a movement in the right direction. I believe that this study has provided enough evidence to sway a number of minds and built the foundation for further evidence to be collated. In order to accumulate further evidence to challenge views and move forward, we need to adjust some of our methodologies.

It is imperative that we integrate our studies both between forms of material culture and within our own specialisms. This study has shown that by cross-referencing a number of flint analytical techniques (Chapter 6) we can achieve a number of qualitative technological observations that may have been overlooked if studied in isolation. On a wider scale, the integration of other material culture regarding context association widens the scope for the archaeological investigation of the flint assemblages: the isolated analysis of these assemblages having aided in the 'residual' arguments put forward to explain many cases. Only by cross-referencing material culture can we begin to understand the role flint played in Iron Age society. In not doing so we are deliberately ignoring evidence that helps build a picture of what we are trying to understand.

Regarding analytical methodology, a number of techniques are considered to be essential to further develop the evidence presented here. As stated above cross-referencing a number of techniques has been advantageous but three methods in particular are suggested to be imperative. First, the analysis of dorsal scar patterns, type and value provide useful information regarding core reduction and either support data retrieved from cores or provide it when they are absent from the assemblage. By cross-referencing DSP and DST and used in conjunction with length:breadth data we can begin to separate earlier and later material from mixed date assemblages. The data provided in this study are not enough to make conclusive statements, but with a widespread use of the methodology it is believed that this will become the case. Second, by cross-referencing length:breadth data with termination and bulb of percussion types we are again able to confirm an Iron Age date for the material and begin to separate earlier and later material from mixed assemblages. Third, when assessing retouched and utilised material we need to drop our preconceived ideas regarding tool forms and 'styles' and assess the functional elements of each piece. By doing so we will enable ourselves to identify new tool forms, reducing the number of pieces categorised to miscellaneous retouch and build on the implement typology for Iron Age flint pieces.

The above recommendations for future flint analysis should not be considered to only apply to new assemblages retrieved from the archaeological record. We are currently sitting on a wealth of material in our local archives and museums. The majority of archived assemblages from Iron Age sites are either considered to be residual or presumed

Neolithic. This is not to say that all of these assemblages have been wrongly judged, but I believe that a number have. It is suggested that a re-analysis of many archived assemblages with an investigation of contextual associations would substantiate the evidence presented here and improve our understanding of its continued utilisation.

There are four areas within this study that have not been fully realised that offer considerable potential for future research, to either substantiate the evidence or directly challenge it. First, bone working and weaving activities appear to have strong associations in the case studies used here, whereas others, particularly animal butchery, are merely tentative. Future integrated approaches to material association and functional elements of both flint and metal implements should confirm or challenge these problems. In addition, use wear and residue analysis on flint implements when at all possible is recommend to further confirm or challenge these associations. Second, I feel that the occurrence of flint found directly in association with other materials is dependent primarily on retrieval methods, how much of a site is excavated and where we excavate, such as domestic structures or rubbish deposits. This is not conclusive based solely on my observations of the published records. Third, on a wider scale we need to obtain more information regarding the positive and negative occurrence of flint utilisation. It was beyond the scope of this study to investigate the number of Iron Age sites that do and do not have Iron Age flint assemblages so as to build a distribution pattern. This is strongly recommended to better understand why flint utilisation continued at some sites and not at others. Lastly, a consideration of the analysis of phasing through the Iron Age was limited to the data from published reports in the majority of cases. This restricted the ability to precisely date flint assemblages within the Iron Age; although in a number of cases the assemblages may represent several phases. The re-analysis of many of the assemblages presented in the database of sites built for this study in conjunction with precise context and phase data from archived records should alleviate this problem. A detailed study based on re-analysed sites and new assemblages over time may allow for more precise dating of the usage of flint through the Iron Age and perhaps lead to a date for the final demise of a regular flint utilisation.

To conclude, Iron Age flint assemblages are a reality. The challenge will be to more fully explore and study them in the hope of shedding new light on the period.

Local journals consulted to build a catalogue of published sites

1. Antiquaries Journal
2. Antiquity
3. Archaeologia Cambrensis
4. Archaeologia Cantiana
5. Archaeological Journal
6. Archaeology Clwyd
7. BAR series
8. Bedfordshire Archaeology
9. Berkshire Archaeology
10. Brigantian
11. Bristol & Avon Archaeology
12. Britannia
13. Bulletin Board of Celtic Studies
14. CBA Research Reports
15. Cheshire Archaeological Bulletin
16. Colchester Archaeological Group Annual Bulletin
17. Cornish Archaeology
18. Derbyshire Archaeological Journal
19. East Anglian Archaeological Report
20. Essex Archaeology & History
21. Fenland Research
22. Hertfordshire Archaeology
23. London Archaeologist
24. Morgannwg
25. Northamptonshire Archaeology
26. Norfolk Archaeology
27. Oxeniesia
28. Oxford Journal of Archaeology
29. Proceedings of the Prehistoric Society
30. Proceedings of the Cambridge Antiquaries Society
31. Proceedings of the Devon Archaeological Society
32. Proceedings of the Dorset Natural and Archaeology
33. Proceedings of the Hampshire Field Club and Archaeological Society
34. Proceedings of the Suffolk Institute of Archaeology and Natural History
35. Proceedings of the University of Bristol Spelaeological Society
36. Record Buckinghamshire
37. Somerset Archaeology and Natural History
38. Somerset Levels Papers
39. South Midlands Archaeology
40. Surrey Archaeology Collect
41. Sussex Archaeological Collect
42. Transactions of the Leicestershire Archaeological and History Society
43. Transactions of the Anglesey Antiquaries Society and Field Club
44. Transactions of the Birmingham and Warwickshire Archaeological Society
45. Transactions of the Bristol and Gloucestershire Archaeology
46. Transactions of the London and Middlesex Archaeological Society
47. Transactions of the Proceedings of the Torquay Natural History Society
48. Transactions of the Shropshire Archaeological and Natural History Society
49. Transactions of the South Staffordshire Archaeological and Historical Society
50. Transactions of the Thoroton Society of Nottinghamshire
51. Transactions of the Woolhope Natural Field Club
52. Transactions of the Worcestershire

County	Site name	Reference
Berkshire	Maindenhead Thicket 1982	Bowden, M. et al. 1982. *BAJ* 71, 21-31
Cambridgeshire	St. Ives	Pollard, J. 1996. *PPS* 62, 93-116
Cambridgeshire	Thriplow	Trump, D. 1956. *PCAS* 49, 1-12
Cambridgeshire	Plant's Farm, Maxey	Gurney, D. et al. 1993.69-101
Cornwall	Goldherring, Sancreed	Guthrie, A. 1969. *CA* 8, 5-39
Cornwall	Killibury Hillfort, Egloshayle	Miles, H. 1977. *CA* 16, 89-121
Cornwall	Trevisker, St. Eval	Apsimson, A.M. & Greenfield, E. 1972. *PPS* 38, 302-381
Derbyshire	Aston Upon Trent	May, J. 1970. *DAJ* 90, 10-18
Derbyshire	Foxcourt Farm, Aston Upon Trent	Hughes, G. 1999. *DAJ* 119, 176-188
Devon	Ashbury	Maxfield, V. 1985. *DAS* 43, 51-88
Dorset	Acton	Calkin, J.B. 1948. *PDNHAS* 70, 29-44
Dorset	East Creech	Calkin, J.B. 1948. *PDNHAS* 70, 29-45
Dorset	Eldon's Seat, Encombe	Cunliffe, B. & Philison, D. 1968. *PPS* 34, 191-237
Dorset	Heron Grove, Sturminster Marshall	Valentine, J. 1993. *PDNHAS* 115, 63-70
Dorset	Kimmeridge, 1936	Davis, H. 1936. *AJ* 93, 200-219
Dorset	Kimmeridge, 1948 **	Calkin, J.B. 1948. *PDNHAS* 70, 29-45
Dorset	Sheeplieghts	Calkin, J.B. 1948. *PDNHAS* 70, 29-46
Essex	Barrington's Court Farm, Orsett Cock	Milton, B. 1987. *EAH* 18, 16-33
Essex	Billericay, secondary school	Rudling, D. 1988. *EAH* 19, 19-47
Essex	Birchanger	Austin, L. 1994. *EAH* 25, 43-44
Essex	Danbury Camp	Morris, S. & Buckley, D. 1978. *EAH* 10, 1-28
Essex	Chapel Lane, Hadleigh	Brown, N. 1987. *EAH* 18, 88-91
Essex	North Ring, Mucking	Bond, D. 1988. *EAAR* 43, 46
Essex	Kelvedon	Clarke, C.P. 1988. *EAH* 19, 15-39
Essex	Rainbow Wood, Thurrock	Potter, T. 1974. *EAH* 6, 1-12
Essex	Saffron Walden	Austin, L. 1994. EAH 25, 262
S.Glamorgan	Whitton	Jarrett, M. & Wrathell, S. 1981
Glamorgan	Castle Ditches, Llancarfan	Hogg, A.H. 1976/77
Gwynedd	Moel y Gerddi, Harlech	Kelly, R. 1988. *PPS* 54, 101-151
Gwynedd	Erw-wen, Harlech	Kelly, R. 1988. *PPS* 54, 101-152
Hampshire	Chidham Lane, Sherbourne St. John	Boismier, B.1998. *PHFCAS* 53, 25-33
Hampshire	Lain's Farm	Bellemy, P. 1992. *PHFCAS* 47, 5-81
Hampshire	Micheldever Wood barrow site (phase 4&5)	Fasham, P. & Ross, J. 1978. *PPS* 44, 47-67
Hampshire	Micheldever Wood banjo enclosure	Fasham, P. 1987.
Hampshire	Old Down Farm	Davis, S. 1981. *PHFCAS* 37. 81-163
Hampshire	Winnal Down (detailed analysis)	Winham, R. 1985. 84-86
Hampshire	Winklebury Camp, Basingstoke	Smith, K. 1977. *PPS* 43, 31-129
Herts.	Wilbury Hill, Near Letchworth	Moss-Eccardt, J. 1964. *BAJ* 2, 34-36
Kent	Castle Hill, Capel	Money, J. 1975. *Acant.* 91, 61-85
Kent	Monkton Court Farm, Isle of Thanet	Perkins, D. et al. 1994. *ACant.* 114, 237-316
Leicestershire	Buddon Wood, Quorn	Humphrey, J. 1998 / Musty, A. 1973. *TLHAS* 48, 62 / Pearce, T. 1972. *TLHAS* 47, 67 / Standbridge, T. 1972. *TLHAS* 47, 66
Leicestershire	Wanlip, stratified material	Cooper, L. & Humphrey, J. 1998. *TLHAS* 72, 63-74
Malverns	Midsummer Hill	Stanford, S.C. 1981
Monthmouths.	Llanmelin, nr. Carwent	Nash-Williams, V. 1933. *AC* 58, 237-346
Norflok	Silfield	Robbins, P. 1996. *NA* 42(3), 266-70
Norflok	Fison Way, Thetford	Gregory, T. 1991. *EAAR* 53
Norflok	London Road, Thetford	Gardiner, J. 1993. *NA* 41(4), 456-458
Northants.	Clay Lane	Windell, D. 1990
Northants.	Brigstock	Jackson, D. 1983. *NA* 18, 7-32

County	Site name	Reference
Northants.	Grtetton	Jackson, D. & Knight, D. 1985. *NA* 20, 67-86
Nottinghamshire	Stanton-on-the-Wolds	Bird, A. & K. 1972. *TTS* 71, 4-12
Oxfordshire	Ashville trading estate, Abingdon	Parrington, M. 1978.
Oxfordshire	Barton Court Farm	Miles, D. 1986.
Oxfordshire	Stanton Harcourt	Hamlin, A. 1966. *Oxen.* 31, 1-27
Oxfordshire	Devil's Churchyard, Checkendon	Chambers, R. A. 1986. *Oxen.* 51, 25-30
Somerset	Dibble's Farm, Christon	Morris, E. 1988. *SANH* 132, 23-82
Somerset	Glastonbury Lake Village	Bullied, A.& St. George Gray, H. 1917. Vol. 2
Somerset	Meare Village East	Avery, M. 1968. *SANH* 21-38 / Coles, J. 1987. *SLP* 13 / Orme, B. et al. 1983. *SLP* 9, 49-74
Somerset	Meare Village West 1910-33	Orme, B. et al. 1981. *SLP* 7, 12-70 / Smith, A. 1981. *SLP* 7, 65-66 / St. George Gray, H. 1966, Vol. 3
Somerset	Row 0f Ashes Farm, Butcombe	Fowler, P.J. 1968. *PUBSS* 11(3), 209-236
Suffolk	Lakenheath	Gell, A.S.R. 1949. *PCAS* 42, 112-116
Surry	Alpine Ave, Tolworth	Hawkins, D. & Leaver, S. 1999. *SAC* 86, 141-149
Surry	Holmbury Camp	Winbolt, S. 1930. *SAC* 28, 156-170
Surry	Nore Hill, Chelsham	Skelton, A. 1987. *SAC* 78, 43-54
Sussex	Carne's Seat, Goodwood	Holgate, R. 1986. *SAC* 124, 35-50
Sussex	Coastal site, Chidham	Bedwin, O. 1980. *SAC* 118, 163-170
Sussex	Copse Farm, Oving	Bedwin, O. & Holgate, R. 1985. *PPS* 51, 215-245
Sussex	North Bersted	Bedwin, O. & Pitts, M. 1978. *SAC* 116, 293-346
Sussex	Ounce's Barn, Boxgrove	Bedwin, O. & Place, C. 1995. *SAC* 133, 45-102
Sussex	Saxonbury Camp	Winbolt, S. 1930a. SusAC 71, 223-236
Sussex	Seaford Head Camp	Bedwin, O. 1986. *SusAC* 124, 25-33
Warwickshire	Corely Camp	Chatwin, P.B. 1927. 52(2), 282-287
Warwickshire	Park Farm, Barford	Cracknell, S. & Hingley, R. 1993-4. *TBWAS* 98, 1-30
Welsh Marshes	Croft Ambrey	Stanford, S.C. 1974
Wiltshire	Budbury	Wainwright, G. 1970. *WANHM* 65, 108-166
Wiltshire	Figheldean 1993 &1999	Graham, A. & Newman, C. 1993. *WANHM* 86, 8-57; McKinley 1999, 7-32
Wiltshire	Liddington Castle	Hirst, S. & Rahtz, P. 1996. *AJ* 153, 1-59
Wiltshire	Pewsey Hill	Thompson, N.P. 1971. *WANHM* 61, 58-75
Wiltshire	Potterne (detailed analysis)	Lawson, A. 2000
Wiltshire	Segsbury	Godson, C. & Lock, G. http://units.ox.ac.uk/departments/archaelogy/projects/ridgeway
Upminster	Whitehall Wood	Greenwood, P. 1986. *Lon. Arch.*5(7), 171-175

E	N	PREFIX	NAME	COUNTY	PERIOD	SETTLEMENT
489000	183000	SU	Maidenhead Thickett	Berkshire	IA	earthwork
511500	280000	TL	Plants Farm, Maxey	Cambridgeshire	MIA-RB	farmstead
532900	270600	TL	St. Ives	Cambridgeshire	Neo / IA	pit alignments
545000	245000	TL	Thriplow	Cambridgeshire	BA / IA	barrow / settlement
141250	029800	SW	Goldherring, Sancreed	Cornwall	EIA-RB	small walled settlement
200800	073700	SX	Killibury Hillfort, Egloshayle	Cornwall	LBA-EIA	hillfort
188800	068700	SW	Trevisker, St. Eval	Cornwall	BA-IA	settlement
443250	329550	SK	Aston upon Trent	Derbyshire	IA	square enclosure
441700	330500	SK	Foxcourt Farm, Aston upon Trent	Derbyshire	MIA-RB	enclosure
250800	098000	SX	Ashbury	Devon	LBA-RB	activity
399000	078500	SY	Acton, Isle of Purbeck	Dorset	IA	activity
392700	082600	SY	East Creech, Isle of Purbeck	Dorset	LIA	activity
393900	077600	SY	Eldons Seat, Encombe	Dorset	EIA-RB	settlement
395750	097770	SY	Heron Grove	Dorset	EIA	settlement
391500	079500	SY	Kimmeridge, Isle of Purbeck	Dorset	E-MIA /	settlement
		SY	Sheepleights	Dorset	LBA-IA	settlement
564000	182000	TQ	Barrington's Farm, Orsett Cock, Thurrock	Essex	BA-PM	features
568000	195000	TQ	Billericay	Essex	LIA-Sax	activity
550650	221890	TL	Birchanger	Essex	E-MIA-RB	activity
577900	205200	TL	Danbury Camp	Essex	IA-RB	earthwork
581800	186900	TQ	Hadleigh, Chapel Lane	Essex	EIA	enclosure
586200	218900	TL	Kelvedon	Essex	MIA-RB	enclosure
568500	181100	TQ	North Ring, Mucking	Essex	LBA	settlement
566400	179900	TQ	Rainbow Wood, Thurrock	Essex	MIA	settlement
554000	237700	TL	Saffron Walden	Essex	EIA	settlement
305900	170100	ST	Castle Ditches, Llancarfan	Glamorgan	LIA-RB	hillfort
308100	171300	ST	Whitton	Glamorgan	IA-RB	farmstead
621000	314000	SH	Moel y Gerddi, Harlech	Gwynedd	MIA	enclosure
		SH	Erw-wen, Harlech	Gwynedd	EIA	enclosure
463725	154467	SU	Chidham lane, Sherbourne St John	Hampshire	LBA-EIA	features
426500	144500	SU	Lains Farm, Andover	Hampshire	IA	enclosure
435600	146500	SU	Old Down Farm, Andover	Hampshire	EIA-RB	enclosure
452550	136530	SU	Micheldever Wood	Hampshire	IA	re-use of barrow material
452550	136530	SU	Micheldever Wood, banjo enclosure	Hampshire	EIA-RB	enclosure
449800	130300	SU	Winall Down	Hampshire	E-LIA	enclosure
461350	152900	SU	Winklebury Camp, Basingstoke	Hampshire	E-MIA	hillfort
521200	232600	TL	Wilbury Hill, nr Letchworth	Hertfordshire	EIA	hillfort
627700	165500	TR	Monkton Court Farm	Isle of Thanet	EIA	settlement
560800	143900	TQ	Castle Hill, Capel, nr Tonbridge	Kent	E-MIA	hillfort
456300	314950	SK	Buddon Wood, Quorn	Leicestershire	LBA-EIA	activity
459000	311000	SK	Wanlip	Leicestershire	MIA	enclosure
376000	237500	SO	Midsummer Hill	Malvens Hills	MIA-RB	hillfort
346100	292500	ST	Llanmelin, nr. Carwent	Monthmouths.	EIA	hillfort
612500	299500	TF	Silfield, Wymondham	Nolfolk	MIA	settlement
587000	283000	TL	Fison Way, Thetford	Norfolk	EIA-RB	features
586200	282600	TL	London Road, Thetford	Norfolk	MIA	Pit group
475000	262000	SP	Clay Lane	Northampton	LIA-RB	activity
492500	284100	SP	Brigstock	Northants	MIA	enclosure
490800	294400	SP	Gretton	Northants	EIA	settlement
463200	330500	SK	Stanton-on-the-Wolds	Nottinghamshire	undated	hut floor

E	N	PREFIX	NAME	COUNTY	PERIOD	SETTLEMENT
450900	197300	SU	Ashville Trading estate	Oxon	BA-IA-RB	settlement
			Barton Court Farm	Oxon	LNeo/IA-	settlement
440600	204900	SP	Stanton Harcourt	Oxon	EIA	settlement
466700	183400	SU	The Devil's Churchyard, Checkenden	Oxon	IA	enclosure
338400	157570	ST	Dibble's Farm, Christon	Somerset	E-MIA	settlement
350000	139500	ST	Glastonbury Lake Village	Somerset	LIA	settlement
345500	141500	ST	Meare Village East	Somerset	LIA	settlement
345000	141500	ST	Meare Village West	Somerset	LIA	settlement
360840	162970	ST	Row of Ashes farm, Butcombe	Somerset	RB	settlement
571600	282500	TL	Lekenheath	Suffolk	IA	Pit group
519900	166500	TQ	Alpine Ave, Tolworth	Surry	LIA	settlement
510400	142900	TQ	Holmbury Camp	Surry	LIA	hillfort
538100	157500	TQ	Nore Hill, Chelsham	Surry	LBA-IA/R	enclosure
488760	109450	SU	Carne's Seat, Goodwood	Sussex	LBA-RB	enclosure
479700	103500	SU	Coastal site, Chidham	Sussex	?Neo? /	coastal site
489650	105750	SU	Copse Farm, Oving	Sussex	LIA-RB	farmstead
492740	100820	SU	North Berstead, Bognor Regis	Sussex	BA/LIA	settlement
492200	107000	SU	Ounce's Barn, Boxgrove	Sussex	EIA-RB	enclosure
557750	132950	TQ	Saxonbury Camp, nr Frant	Sussex	E-LIA	hillfort
549500	098800	TV	Seaford Head Camp	Sussex	EIA	settlement
430400	285100	SP	Corley Camp, nr Coventry	Warwickshire	IA	
429200	261600	SP	Park Farm, Barford	Warwickshire	LBA / MIA	enclosure
344500	268000	S0	Croft Ambury	Welsh Marches	LIA-RB	hillfort
382130	161130	ST	Budbury	Wiltshire	EIA	hillfort
415000	147000	SU	Figheldean	Wiltshire	LBA / LIA-RB	enclosure
420850	179700	SU	Liddington Castle	Wiltshire	LIA	hillfort
416750	157650	SU	Pewsey Hill	Wiltshire	MIA / RB	enclosure
399500	158500	ST	Potterne	Wiltshire	LBA-EIA	midden
438400	184400	SU	Segsbury	Wiltshire	EIA-RB	hillfort
556000	186000	TQ	Whithall Wood, Upminster		LBA-EIA	settlement

County	Name	midden	ditch	bank / ditch	gully	pit	post hole	layer	unstratified	cut / feature	floor	gravel terrace	colluvium / alluvium	medieval plough furrow	cairn material	paleochannel	buried surface
Berkshire	Maindenhead Thicket 1982			253													17
Cambridgeshire	St. Ives		28			53			26	12			27			7	
Cambridgeshire	Thriplow	not enough information, IA ditch and barrow berm mentioned															
Cornwall	Goldherring, Sancreed	information not provided															
Cornwall	Killibury Hillfort, Egloshayle	information not provided															
Cornwall	Trevisker, St. Eval							20									
Cambridgeshire	Plant's Farm, Maxey																
Deryshire	Aston Upon Trent		6					4									
Deryshire	Foxcourt Farm, Aston Upon Trent				3				7				9				
Devon	Ashbury								24								
Dorset	Acton	information not provided, but said to come from the base of deposit															
Dorset	East Creech	information not provided															
Dorset	Eldon's Seat, Encmbe	information not provided, but said to come from occupation levels															
Dorset	Heron Grove, Sturminster Marshall	information not provided															
Dorset	Kimmeridge, 1936	information not provided, but said to come from occupation levels															
Dorset	Kimmeridge, 1948	information not provided, but said to come from occupation levels															
Dorset	Sheeplieghts										?						
Essex	Barrington's Court Farm, Orsett Cock	information not provided															
Essex	Billericay, secondaruy school	information not provided															
Essex	Birchanger		2			116				2							
Essex	Danbury Camp					6	1	4	1								
Essex	Chapel Lane, Hadleigh	information not provided															
Essex	Kelvedon	information not provided															
Essex	Rainbow Wood, Thurrock								41			44					
Essex	Saffron Walden					32											
S. Glamorgan	Whitton	information not provided															
Glamorgan	Castle Ditches, Llancarfan	information not provided															
Gwynedd	Moel y Gerddi, Harlech					2		16	2								
Gwynedd	Erw-wen, harlech							2									
Hampshire	Chidham Lane, Sherbourn St. John					49											
Hampshire	Lain's Farm																
Hampshire	Micheldever Wood barrow site (phase (4&5)														18566		
Hampshire	Micheldever Wood banjo enclosure																
Hampshire	Old Down Farm					156											
Hampshire	Winnal Down		491														
Hampshire	Winklebury Camp, Basingstoke	information not provided															
Herts.	Wilbury Hill, Near Letchworth																
Kent	Castle Hill, Capel	information not provided															
Kent	Monkton Court Farm, Isle of Thanet								99	majority are from pits, a few from features and ditches							
Leicestershire	Buddon Wood, Quorn	information not provided, but some material came from pits															
Leicestershire	Wanlip, stratified material		99	3	13	182	117	14	10	1							
Malverns	Midsummer Hill	detailed information not provided															
Monthmouth shire	Llanmelin, nr. Carwent										1						1
Norfolk	North Ring, Mucking	detailed information not provided															
Norfolk	Silfield					162			264	185							
Norfolk	Fison Way, Thetford	detailed information not provided															
Norfolk	London Road, Thetford					264											
Northamptonshire	Clay Lane	information not provided															
Northamptonshire	Brigstock	information not provided															
Northamptonshire	Gretton					4		10									
Nottinghamshire	Stanton-on-the-Wolds							143									
Oxfordshire	Ashville trading estate	information not provided															
Oxfordshire	Barton Court Farm	information not provided															
Oxfordshire	Stanton Harcourt				2	8			10								
Oxfordshire	Devil's Churchyard, Checkendon	information not provided															

County	Name	midden	ditch	bank / ditch	gully	pit	post hole	layer	unstratified	cut / feature	floor	gravel terrace	colluvium / alluvium	medieval plough furrow	cairn material	paleochannel	buried surface
Somerset	Dibble's Farm, Christon	information not provided															
Somerset	Glastonbury Lake Village	detailed information not provided															
Somerset	Meare Village East							23	410	12	99		4				
Somerset	Meare Village West	detailed information not provided															
Somerset	Row of Ashes Farm, Butcombe	information not provided															
Suffolk	Lakenheath																
Warwickshire	Corely Camp	information not provided															
Surrey	Alpine Ave, Tolworth					2				16							
Surry	Holmbury Camp	detailed information not provided															
Surry	Nore Hill, Chelsham	information not provided															
Sussex	Carne's Seat, Goodwood		155														
Sussex	Coastal Site, Chidham							630									
Sussex	Copse farm, Oving	detailed information not provided															
Sussex	Ounce's Barn, Boxgrove		5	remaining 177 pieces from IA enclosure & RB features, unspecified in report													
Sussex	Saxonbury Camp																
Sussex	Seaford Head Camp	detailed information not provided															
Warwickshire	Park Farm, Barford		4		1				16	1				1			
Welsh Marshes	Croft Ambrey							5	4		1						
Wiltshire	Figheldean 1993 & 1999	detailed information not provided															
Wiltshire	Pewsey Hill							89									
Wiltshire	Potterne																
Upminster	Whitehall Wood		?			?											
Total			790	256	19	1036	118	960	914	229	101		40	1	18566		18

Context & layer	Flint total	Pottery body sherds	Baked clay		Shale	Stone			Worked bone		Iron	Bronze
			weaving*	sling shots		weaving*	quern	whetstones	antler	bone		
1 (2a)	5											
1 (3a)	1											
3 (2)	4	52										
3 (3)	13	547				1				1		
3 (4)	8	1083				1	1				4	1
3 (5)	7	3278	1			1						2
3 (6)	5		1							1		
3 (7)	7	726	1			1						
3 (8)	1	90									1	
3 (9)	11	412									1	
3 (11)	15											
3 (14)	2											
6 (1)	1	3										
6 (3)	3	327										
13 (2)	3	10										
15 (1)	1											
16 (2)	5	73										
16 (3)	18	789	1									
17 (2)	2											
18 (3)	1	5										
19 (1)	6											
19 (2)	11	764	1									
19 (3)	3	569										
19 (5)	1											
20 (3)	12	2329	2	1		1				2		
20 (4)	8											
20 (5)	1											
20 (F14)	1		1							1	2	
21 (1)	12											
21 (2)	5	181		1								
21 (3)	4	1476	1			3	4	3	1		1	1
21 (3a)	2				3							
21 (4)	31											
21 (4a)	5											
22 (2)	2	51										
22 (4)	6											
24 (3)	2	68										
	225	12833	9	2	3	8	5	3	1	5	9	4

The table only includes material directly associated with flints - omitted material which is unrelated

Blue indicates those contexts which are not noted in flint report but archive records on bags record flints to these contexts

Appendix 6 – The butchery experiment

The purpose of the thesis has been to establish ways in which we can identify Iron Age flint and whether we can recognise any of the activities with which it may have been utilised or associated. Some activities, namely bone working and weaving, have been shown to have strong associations with flint artefacts from the evidence presented in this study, and shale working has previously been identified as being worked by flint into the Roman period in many Dorset sites, particularly at Kimmeridge (Calkin 1948 and Davis 1936). It has been considered from the beginning of this study however, that flint, due to its versatile and extremely sharp nature, would be a possible contender for butchery tasks. It is generally assumed that by the Iron Age, iron knives were utilised in this activity, yet there is no conclusive evidence to confirm this and the context data associations in this study have not furthered the case for flint either.

Primarily, this is a problem because very few butchery marks are left on bone and of those which are, it is very difficult to establish whether they are made with metal or flint implements despite previous experiments to clarify this, such as those carried out by Walker and Long (1977). With this in mind a butchery experiment was designed to gain a better insight into Iron Age butchery methods and the marks left on the bones using both iron and flint tools. In doing so it was hoped that we could establish whether flint implements *could* be utilised to carry out butchery tasks in the manner identified from Iron Age animal bones and whether it was more or less efficient than iron knives. There were five main objectives.

The first objective was to assess the relative merits of 3 iron knives with different levels of hardness against several Iron Age type flint implements (scrapers and unmodified and retouched flakes). These implements were used to disarticulate and fillet meat from bone in a similar manner thought to have been performed at the Iron Age hillfort of Danebury, Hampshire; butchery marks on pig bone from Danebury suggest that these practices took place (Knight 2002).

The second objective was to record empirical observations from a skilled professional concerning the order of dismemberment and incidence of cutmarks from the modern carcasses against those interpreted by Knight for Iron Age butchery at Danebury.

The third objective was to investigate the morphology of cuts into the bone and compare them against the Danebury examples, in an attempt to identify which tools may have been used in the Iron Age.

The forth objective was to identify use wear on the knives and flint using macro and microscopic analysis. However, results on this objective have as yet not been fully completed by the author for the flints and by Peter Crew for the knives and as such will be published at a later date.

The fifth objective was to record factors that are important to the study of meat consumption in the past. This was achieved by observing the correlations between live, dead, dressed and bone weight of the animals used. Although this objective was secondary to the overall aim of the experiment the potential for interesting results concerning the efficiency between the two implement types was one not to be overlooked. Brief results on this are shown below, but more detailed explanations are provided in Knight's thesis (2002 Appendix 3.4.3).

The origins

The experiment was carried out mutually with colleague Stephanie Knight, who was researching butchery practices in the Iron Age with particular reference to Danebury. The idea for the experiment began during a discussion with both the author, Knight and Drs. Rob Young and Annie Grant after a double seminar session of both the author's and Knight's work.

In December 1999 Peter Crew (the archaeology officer from Snowdonia National Park Study Centre) presented a seminar on '*Prehistoric and Medieval Ironworking in North Wales – Archaeology and Experiment*'. From this seminar we learnt that over the previous 20 years Peter Crew and his team had carried out several smelting experiments using Iron Age techniques and after discussion with Crew he agreed to make (with blacksmith Hector Cole) three iron knives with different levels of hardness, knife 1 being the softest and knife 3 the hardest; each knife had a different carbon and phosphorous content. The profile of the knives were based on recovered samples from Danebury in conjunction with the advice from the local butcher on those that would be most suitable for butchery tasks. The iron knives (fig. A6-1) were hafted into handles made from sheep horns and were the first of their kind made and used in this manner.

The flint tools for use in the experiment were produced in accordance with the preliminary observations made on a small number of Iron Age assemblages in conjunction with data researched on those from the Late Bronze Age (see Chapter 2). These were created by Lynden Cooper from the University of Leicester Archaeological Services (ULAS) and the author; the aim was to produce a number of functional pieces disregarding shape or aesthetics. The result was a pile of debris from which we retrieved a number of unmodified flakes and chunks with utilisable edges, retouched flakes and a couple of scrapers (fig. A6-2 shows a number of these pieces which were chosen by the butcher); a basic description of these pieces can be found in table A6-1.

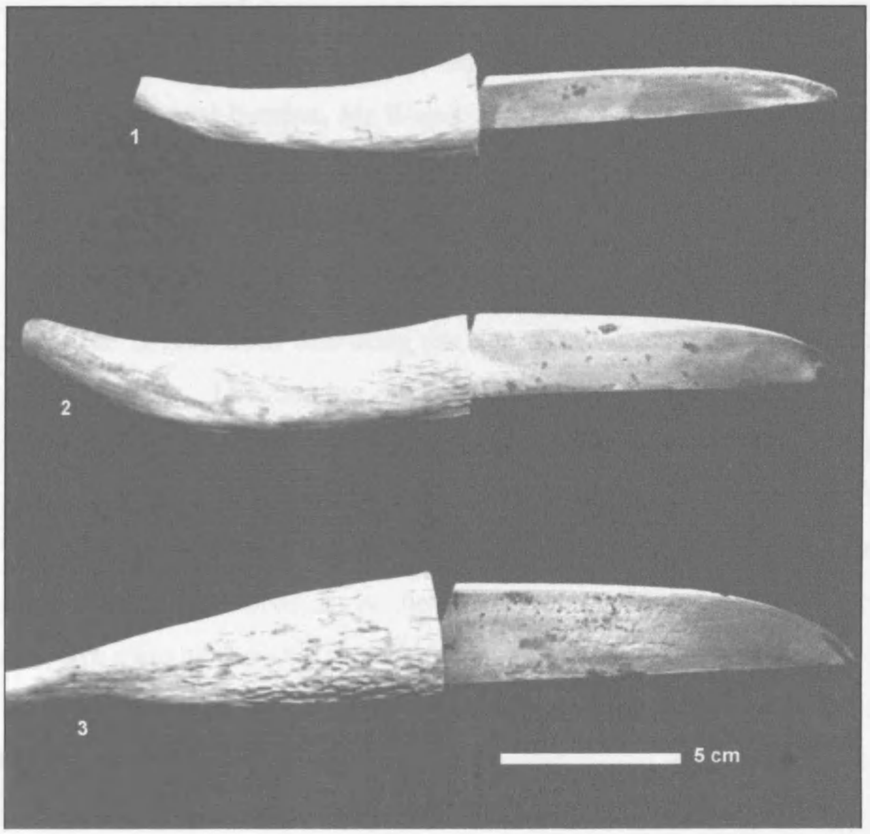

Figure A6-1: Iron knives used in butchery experiment, made by Crew and Cole. (Photographed by Knight & Humphrey)

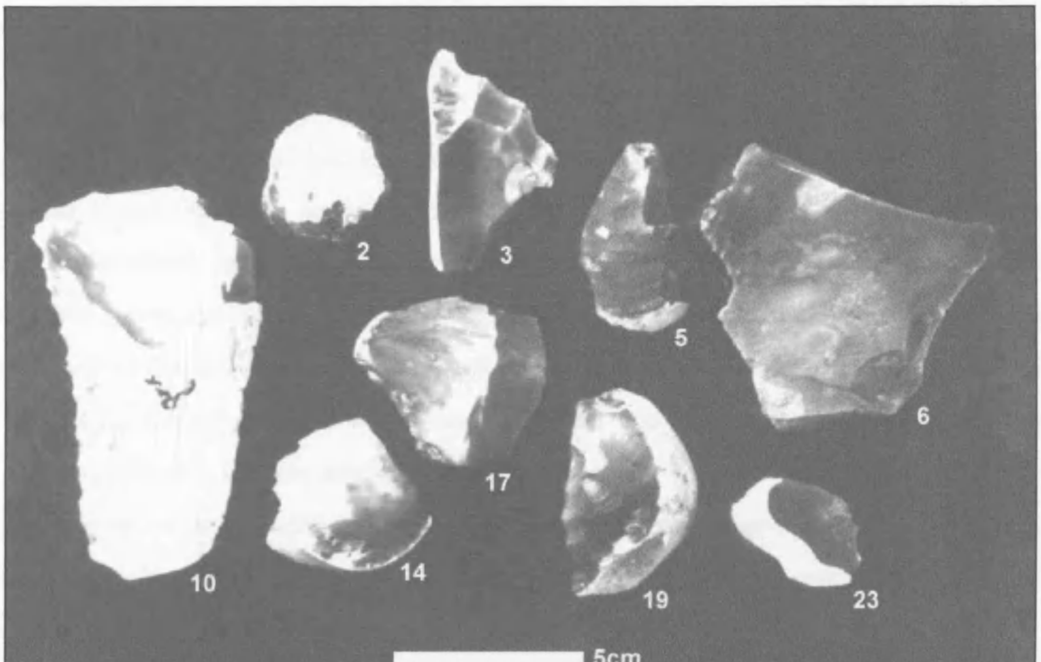

Figure A6-2: Flint tools chosen by the butcher for use in the experiment, made by Cooper and Humphrey. (Photographed by Knight & Humphrey)

Initially, a whole wild boar from a free range farm in Cornwall was to be used for the following reasons. First, this type of swine is closer to the Iron Age pig species in bone morphology and musculature. Second, a pig was chosen as this was the species that Knight was studying at the time, and it was expected that boar bone would produce comparable butchery marks. Third, each half could be separately dissected with the flint and iron implements by a traditional butcher, Mr Wood. After consultations with Knight regarding Iron Age butchery techniques, Mr. Wood agreed to perform the experiment in accordance with the hypothesised butchery practice of the period.

After postponing the experiment in September 2000 due to widespread fuel disputes in the UK preventing the farmer from delivering the boar, the experiment was rescheduled for November of that year. The butcher however developed glandular fever and it was rescheduled for the end of March 2001. Crisis struck again however, in February of 2001, when an outbreak of foot and mouth spread rapidly across the UK. Four days before we were due to carry out the experiment the Cornish farm was condemned and it was impossible to obtain a whole boar. As no further delays were possible Mr. Wood came up with an alternative plan; he was able to provide two heads and two hocks (upper radius and ulna with the trotters missing, in accordance with the foot and mouth crisis) from modern pigs. Under the circumstances, this smaller scale experiment was deemed acceptable despite differences in the bone and muscular density. It was expected that more butchery marks would occur due to the softer bone of young modern breeds, but that the comparison of butchery marks between the two material types and the potential use of flint as an alternative butchery implement to iron was still valid.

Methodology

The butchers brief was to skin, disarticulate and fillet the bones, and to split the skull and mandible longitudinally in accordance with the hypothesised Iron Age butchery practices based on evidence from Knight's research (2002). The butcher was presented with the three iron knives and all of the usable flint implements produced. He was asked to freely choose any of the full range of implements provided and use them in any manner in which he saw fit for the tasks ahead. When using the flints and iron knives on each separate half of the experiment, he was not influenced in any way by our prior knowledge of the implement types and qualities. The butcher's considered judgements were of particular interest as we hoped to gain some insight into similar decisions that may have been made in the Iron Age concerning the production and use of such pieces.

During the experiment the meat removed from the bone was weighed, to assess whether the iron knives or flint tools removed fillets more successfully. On completion, the bones were cleaned in order to reveal any butchery marks. The cleaning process required that first the bones were boiled for about an hour so that any soft tissue could be picked off by hand. This was followed by the soaking of the bones in a solution of pepsin at 35°C for five days to break down any remaining tissue adhered to the bone. This was not completely successful in the first attempt and so the soaking procedure was repeated, followed by a second boiling and scrubbing. Once all of the tissue was removed, the bones were bleached by Tony Gouldwell (University of Leicester), dried and assessed for results by Knight; macroscopic examination was carried out on each bone followed by a microscopic examination at x30 magnification. All butchery marks made during the removal of the hocks and skulls from each carcass prior to the experiment were ignored.

Comparison of results in utilising flint and iron implements

Table A6-1 gives basic descriptions for the flint pieces chosen from the assortment of usable pieces during the experiment by the butcher and illustrated in figure A6-2. All three of the iron knives were tried.

Table A6-1: Description of flint pieces chosen by the butcher to perform the butchery tasks.

Flint	Description
2	Scraper
3	Longer secondary unmodified flake
5	Sharp secondary chunk
6	Thick secondary flake with retouched crushed edge
10	Knife due to its bifacial retouch on one edge
14	Secondary unmodified flake
17	Secondary unmodified flake
19	Secondary unmodified flake
19	Secondary unmodified flake
23	Secondary unmodified flake

Tables A6-2 and A6-3 describe the sequence of disarticulation and filleting performed on each hock and head for both the flints and iron knives. The comments given by the butcher regarding the performance of each tool and any further comment regarding why and how the butcher chose each piece for particular tasks is also listed.

Filleting out the meat from the hocks (upper radius and ulna)

The flint tools chosen for filleting meat (fig. A6-3) and skinning of the first hock appeared to perform the task easier than the two iron knives chosen and used on the second hock. Skinning using the flint was at times difficult, but the butcher thought that his unfamiliarity with the tool type was the reason, rather than the tool itself, whereas the handles on the iron knives allowed easier guiding of the tool with which he was familiar. Therefore, despite the iron knives being easier to handle, and even after sharpening knife 1, the flint implements cut through the skin and flesh more successfully to remove the meat from the bone.

Table A6-2: Butchers comments in using the flint tools and iron knives for filleting the hocks.

Flint tools	Hock	Filleting	Performance / comment
10	√	meat from bone	Did not cut through the skin easily
19	√	meat from bone & skin removal	Removed meat from the bone successfully leaving very little meat behind. Easy to use, needing little pressure. Did not appear to loose sharp edge in process. Skin removal not successful as could not cut through membrane (fig. A6-3)
2	√	skin removal	Ok, but not much better than 19.
17	√	skin removal	Excellent, probably would have been good at filleting too
Iron knives	**Hock**	**Filleting**	**Performance / comment**
1	√	meat removal	Not as efficient as the flint as reluctant to go through the skin. Sharpened with traditional whetstone but no improvement. Comfortable to hold due to the handle.
2	√	meat removal	Much better edge, but not as sharp as the flint. Was able to remove skin also. Handle was advantage due to more leverage.

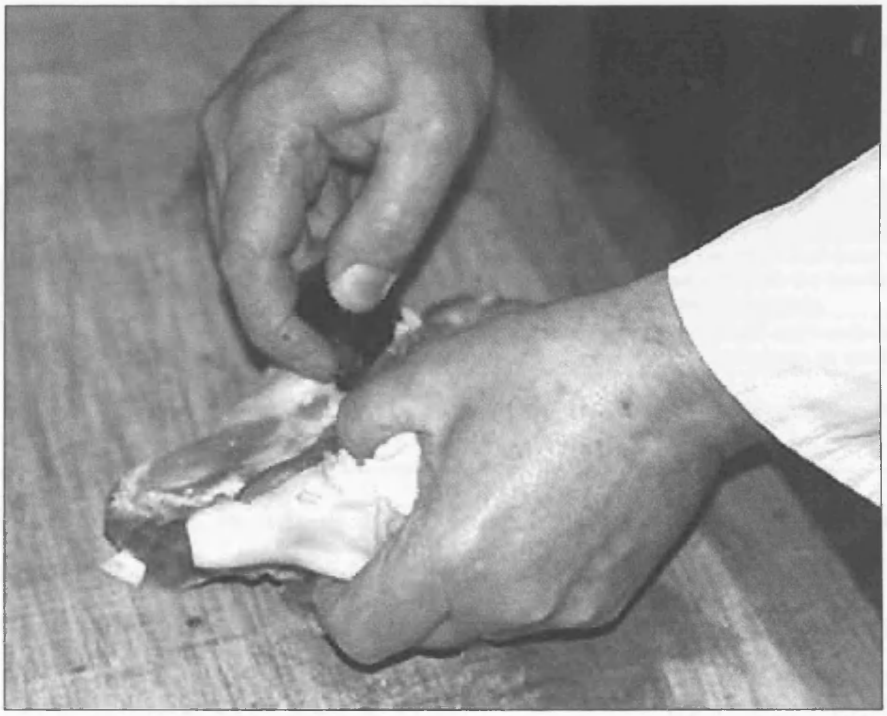

Figure A6-3: Flint tool utilised in removing meat from the upper radius and ulna (hock) (Photographed by Knight, 2001).

Filleting meat from the skull and mandible

Knight's research on pig butchery at Danbury showed that pig skulls were sometimes longitudinally split in the late Iron Age (Knight 2001; 2002; 2003), therefore the skull was split in half prior to the disarticulation of the mandible from the cranium. Once this was achieved as much meat as possible was removed from the skull halves and mandibles, along with the tongue. Table A6-3 describes the sequence of events and the tools used to perform the tasks.

Table A6-3: Butchers comments in using the flint tools and iron knives for disarticulating and filleting the meat from the skulls and mandibles.

Flint tools	Head	Filleting	Disarticulating	Performance / comment
6	√		split head in two	Used with hammerstone as a wedge to cut down through centre of the snout. A good tool as it split the skull easily without hitting the brain (fig. A6-4).
17	√	tongue removal		Removed the tongue easily.
	√		1st half - disarticulate mandible	Used with a sawing action to cut through meat and bone.
19	√	meat removal from mandible		No comment as performed the task successfully (fig. A6-6).
17	√	remove cheek meat		Too large and smaller tool required.
23	√	remove cheek meat		Very good tool, particularly for tight areas such as around the eye socket.
17/23	√	remove any remaining meat on skull		17 lost *very* sharp edge and so used with 23 to remove remaining meat successfully.
3	√	remove remaining meat inside skull cavities		Used to reach inside skull but too sharp to hold, resort back to 17.
14	√		2nd half - split lower jaw & remove mandible from skull	Difficult to hold. Therefore, 17 & 19 used to perform most of the dismembering and filleting on second half of skull, as on first half.
3/5	√	difficult areas and cavities		Sharpness of tool 3 noted previously when trying to use on first half of skull and so adjusted position in hand for comfort. Completed difficult areas of second skull half with both tools.
Iron knives	**Head**	**Filleting**	**Disarticulating**	**Performance / comment**
3	√		split skull in two	Used with hammerstone to cut through centre of skull down through the snout. Only difference between flint and knife was the handle allowed the knife to be guided more accurately.
	√		disarticulate mandibles	Very efficient and quick, but the rigidity of knife and handle was familiar and with practice the flint may have been as quick.
2	√	meat removal from mandibles & skull halves, skin removal		Removed all meat and skin successfully although it began to loose its sharp edge.

When splitting the skull, the strong point of using a professional butcher was proven. When creating the experiment, one difficulty we could foresee was how any of the flint implements provided would be able to split the skull. The decision to use no. 6, a thick secondary flake with a crushed edge, as a chopper/wedge along with the hammerstone took the butcher less than a minute, but had not been previously considered by us (figs. A6-4 & A6-5). Although using the flint 'chopper' in this manner resulted in many flint chips as a result of the hammerstone percussion, the tool was still useable after completion, and split the skull successfully without damaging the brain. Once the wedge had reached the lower end of the snout, it was removed and the butcher prized the two halves apart with his hands. Although the split was not exactly central down the snout, probably caused by off-centre sawing during abattoir preparation, it did not affect further filleting of the head. Iron knife No. 3 was used in the same manner as the flint by hitting it with the hammerstone yet the only difference between the two tool types in performing the task successfully was that the handle allowed easier guidance down the centre of the snout.

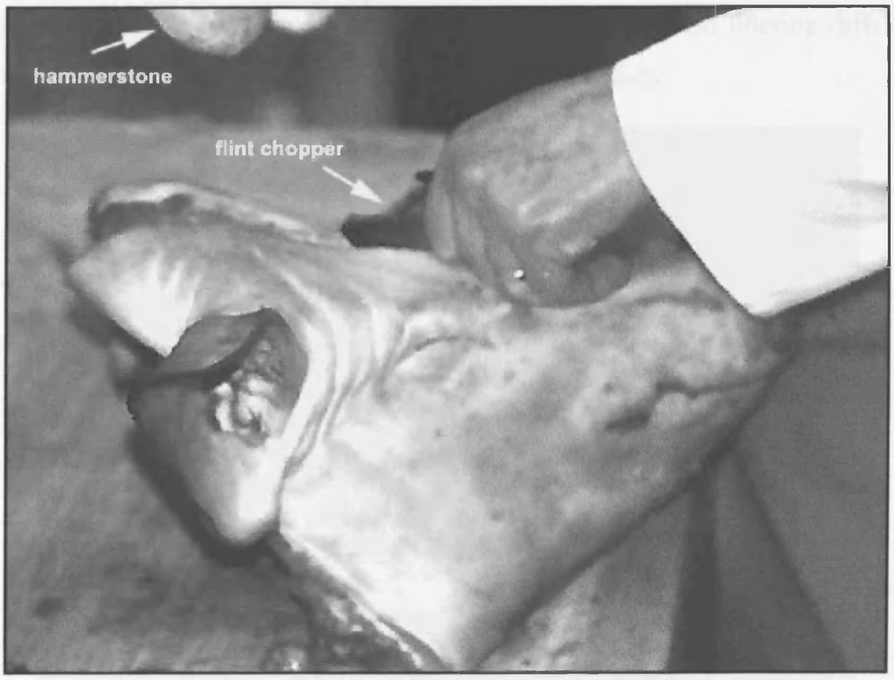

Figure A6-4: Flint No. 6 utilised as a chopper along with a hammer stone to split the skull longitudinally (Photographed by Knight, 2001).

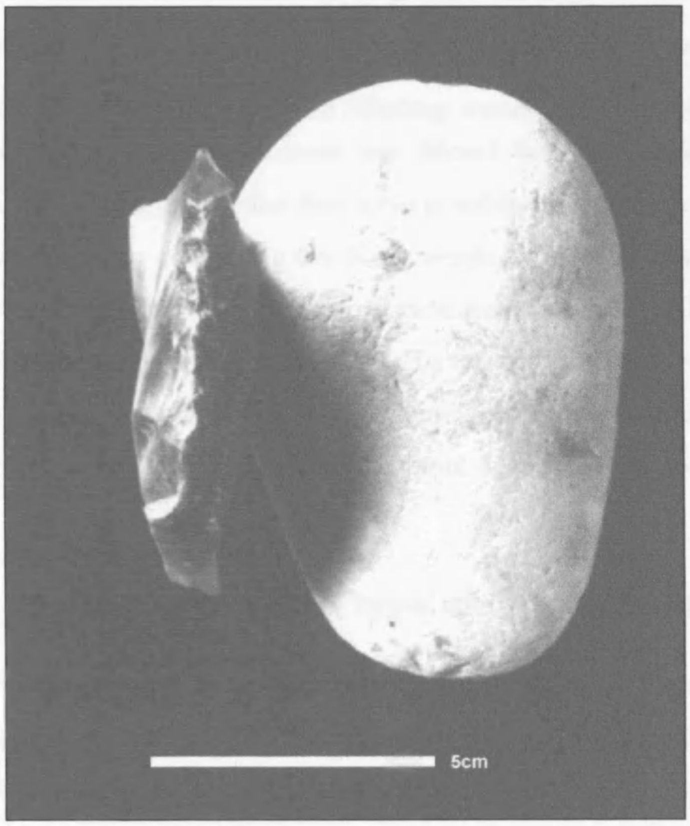

Figure A6-5: Flint tool No. 6 'chopper' and hammerstone utilised to split the pig skull as seen in figure A6-4. (Photographed by Knight & Humphrey).

The tongue was removed easily with both flint and iron implements and the iron knives also disarticulated and filleted the skull and mandibles with relative ease. The same is true for the flint implements although the butcher assessed several pieces until he decided on a number of different flints that were suitable for disarticulating and filleting different areas and that were comfortable to hold in each case (see table A6-3).

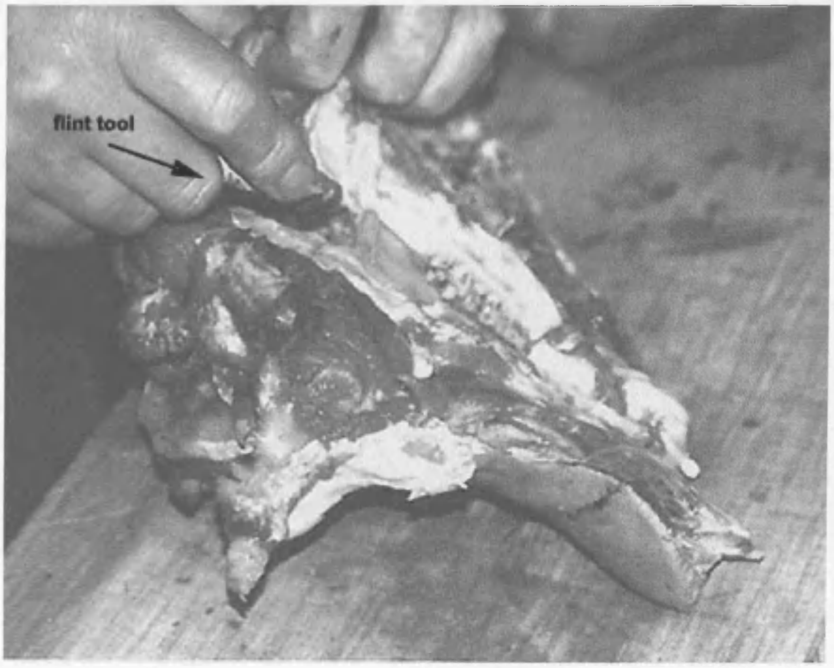

Figure A6-6: Flint utilised in filleting meat from the pig mandible (photographed by Knight, 2001).

How successful were the tool types in filleting meat weight from the bone?

First impressions suggested that more meat was filleted from the mandibles and skulls using the iron knives but that the smaller flint tools possibly allowed more difficult areas to be accessed. However, when comparing dry bone weight to meat weight it was clear that there was very little difference in the amount of meat removed. In fact the build and two month age difference between the pigs was more of a factor in the initial weights observed. The result was that both tool types removed very similar amounts of meat from the bone, proving that both were equally as successful (for more detail on meat weights see Knight 2002).

Comparison of the position and type of butchery marks produced

Figure A6-7 shows the position of butchery marks by tool type on the two pig skulls and mandibles. There were no flint butchery marks on the upper radius and ulna (hock). When comparing the butchery marks made during the experiment to those produced at Danebury, the position of flint tool marks compare very well with those made during disarticulation and filleting of the mandible in the experiment. However, those made from the splitting of the skull and mandible are not quite the same as those represented in the Danebury evidence and Knight suggests that perhaps more cuts were made in order to remove the lower mandible at Danebury rather than using force to break the bone (Knight

2002, 325). In addition to this observation, the cuts made with both the flint chopper and the iron knife, made when splitting the skull longitudinally, at first look quite similar (figs. A6-8; A6-9). Yet with closer inspection the flint chopper caused the bone to break off in uneven discs, resulting in scooped out fractures, whereas the iron knife produced a more ridged uniform set of cut marks. Knight observed that the iron knife tool marks were more similar to those in the Danebury material than those made by the flint tools (Knight 2002, 327).

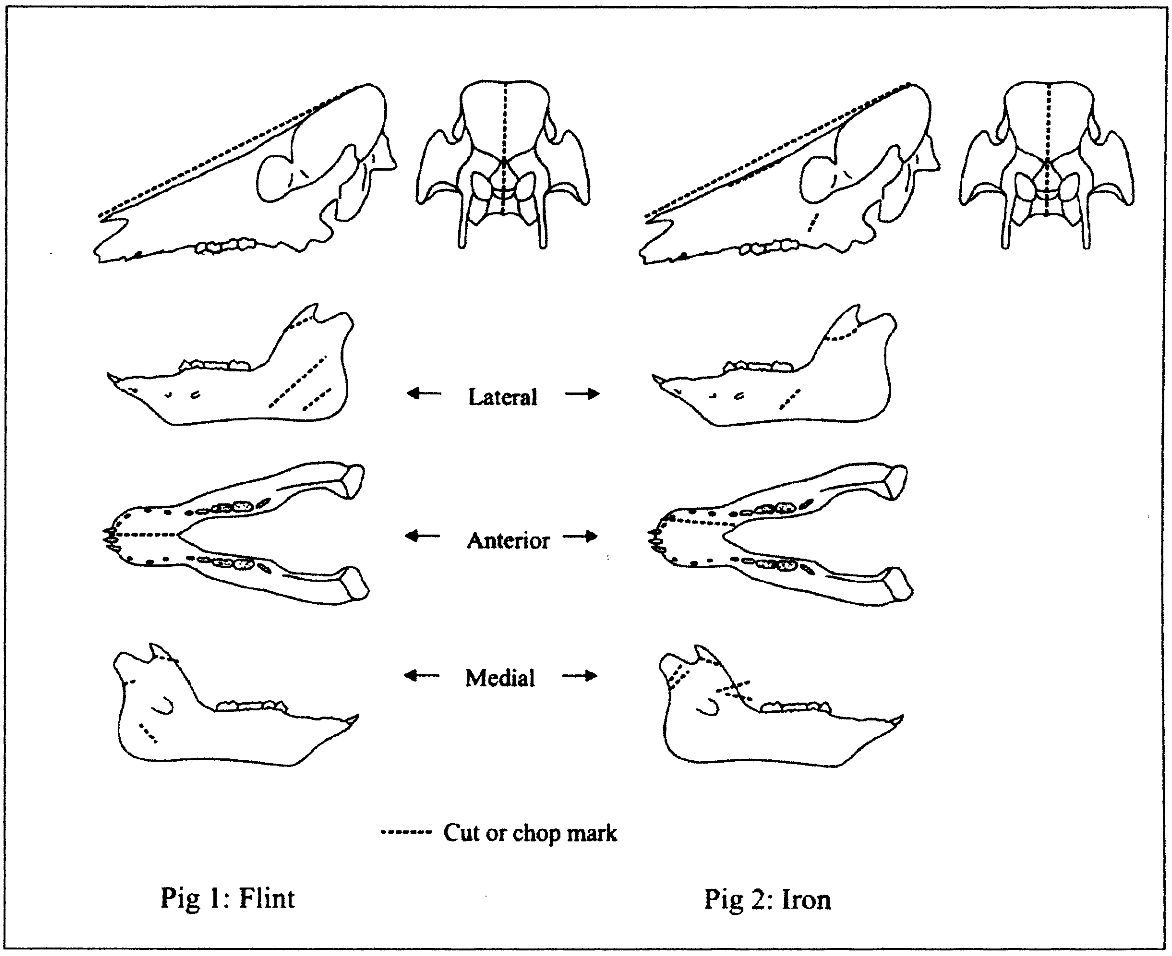

Figure A6-7: Dashed lines illustrate the position of butchery marks resulting from the flint and iron implements on the two pig skulls/mandibles (Knight 2003, 33: fig. A3.5).

The iron knives produced more butchery marks than the flint implements, including additional marks under the obit and along the frontal bone. The mark under the orbit was comparable to filleting marks from Danebury (Knight 2002, 325). It was considered that the iron knives may have produced more butchery marks because of the increased pressure allowed from the handles attached.

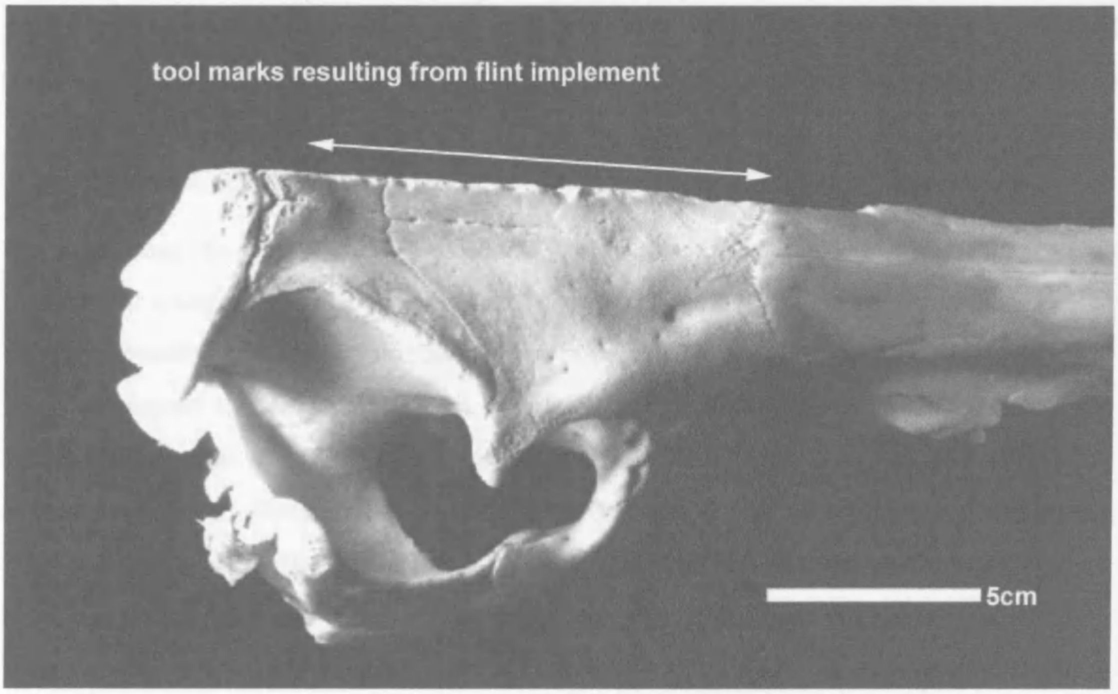

Figure A6-8: Cutmarks and splintering as a result of splitting the skull using the flint implement No. 6 (figs. A6-4 & 5). (Photographed by Knight).

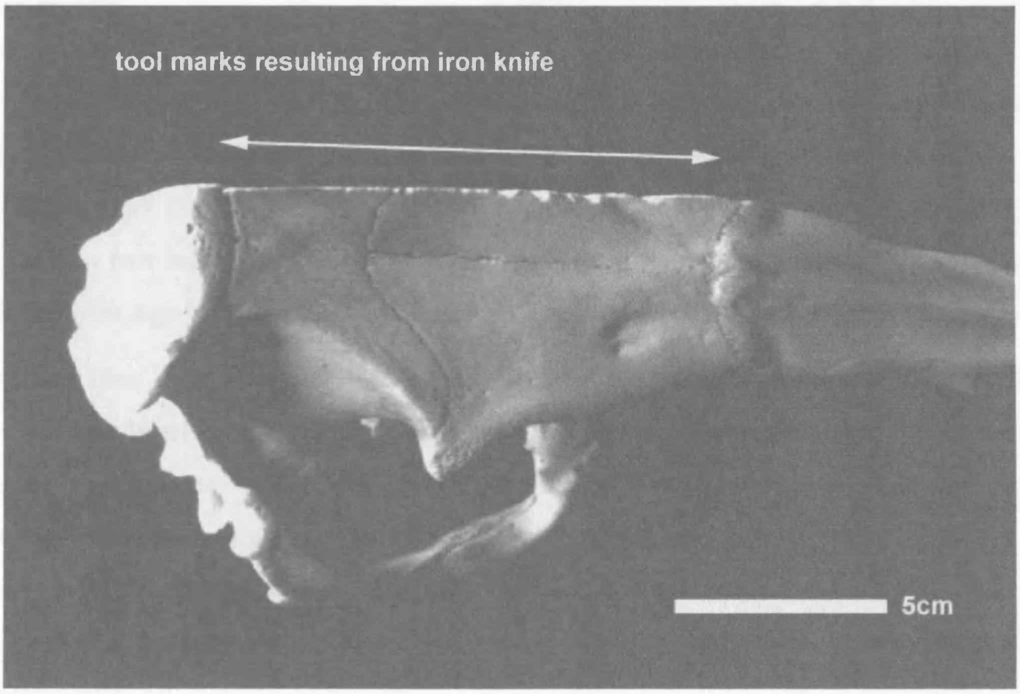

Figure A6-9: Cutmarks as a result of splitting the skull using iron knife No. 3 (fig. A6-1). (Photographed by Knight).

The examination of the profile of the butchery marks however does produce some interesting results which require further clarification. Disarticulation and filleting cuts made by the flint tools were deep and v-shaped and the iron knife marks produced both v-shaped and blunted v-shaped marks, which may have been the result of slightly blunted iron knives which we *may* have not sharpened to the degree of those used in the Iron Age.

Interestingly, Knight observed that a deep blunted v-shaped cut produced by a sawing motion with an iron knife during filleting might in some cases be confused with chop marks; but she did not have time to systematically compare records of 'chop' marks at Danebury to the actual bone.

By comparing the results with Walker and Long's (1977, 609 cited in Knight 2002, 327) experiment using flint and metal tool marks on bone, each tool type produces very similar cut mark profiles and as such the bluntness of the iron knives used here does not appear to have influenced the shape tool mark at all. It is still difficult to provide however, any definite answers to which tool types were used in butchery in the Iron Age from this small scale experiment. Perhaps we will never be certain if any one tool type dominated, particularly so when the iron knife cutmarks from the experiment best resemble those attributed to splitting and scraping cuts from Danebury, and flint cuts best resemble those from disarticulation and filleting. This is an interesting result in itself however, showing *perhaps* that both tool types were utilised as required.

Summary

Based on the butchery marks from Danebury, pig skulls in the Iron Age were probably not split using flints, however the iron knife marks do not compare particularly well with those from Danebury either. One possible reason is that the skulls split in the experiment did not follow the skull suture, but the modern saw made while splitting the main body of the carcass into two halves. It is easier to follow and break the suture line and this is probably what the Iron Age butchers did, resulting in the difference in butchery marks.

Both the flint and iron tools performed disarticulation and filleting tasks very well, although the butcher felt that although the iron knifes were easier to handle (perhaps because he was more familiar with them) the flint cut through membrane and flesh much better and he was surprised by the efficiency of the flint implements. However, the shape of cut marks on the mandibles from Danebury equated best with those made by the flint implements, but the sharpness of the iron knives *may* be a factor in the morphology of the v-shaped cuts.

What was apparent throughout the experiment was that the flint implements could perform the same butchery tasks as well as, and in some cases better than, the iron knives. If we consider that flint tools may have been used alongside metals in butchery practice during this period, we need to move beyond the idea that an increase in social complexity equated to a complexity in butchery practice and, as such, metal tools were automatically chosen to perform Iron Age butchery practices.

Knight's evidence shows that Iron Age 'butchers' repeatedly produced specific cuts of meat, with a number of critical decision-making steps incorporated into this process (Knight 2003). All of the flint pieces chosen and utilised by the butcher for the experiment showed evidence of poor craftsmanship in their production, specifically hinge terminations, rings of percussion, oddly shaped flakes etc. It was therefore interesting to note that these flaws do not make a tool inadequate for use. These are as useful as better made flint objects and iron knives for the tasks investigated. Function appears to definitely outweigh aesthetics for flint implements in the Iron Age period. Analysts therefore need to move beyond the notion that poorly made flint implements and flakes are no more than waste material or ad hoc tools for simple tasks, and as a result they should not be marginalized as such in the analysis of lithic assemblages.

Furthermore, it was observed how important the comfort of a tool, as opposed to aesthetics, must be in order to perform a task efficiently; a point stressed in my current and earlier research (Humphrey 1998). The function of a flint implement is often determined in analysis by the retouch, but retouch can be made to blunt an edge for the comfort of the user also. Furthermore, cortex left on a tool can often be mistaken for a decline or lack of technology in flint tool production. Yet it may be purposefully left there to protect the area where it is held in the hand. Why remove it if you do not have to? From the increased amount of cortical butts present in the assemblages examined this dictum may have had some validity in the Iron Age. What is interesting here is that with the exception of the scraper, which does not really have any sharp edges, all of the flint pieces the butcher chose were secondary, allowing for some element of comfort in his hand, a functional choice at least as important as the cutting qualities.

Appendix 7 – distribution of Iron Age flint utilisation by location and period

Table A7-1 presents the 81 sites broken down by period as far as has been possible in the current analysis. Hyphenated dates that are presented in the top half of the table (*i.e.* E-MIA) indicate a span of occupation/activity between periods. Those in the lower section (*i.e.* BA / MIA / RB) indicate the periods that are represented by datable artefacts and features at a given site, with no continuous activity in between each period. The original aim was to show flint assemblage sizes against these dates, in order assess whether the amount of flint use through the Iron Age decreased or remained stable. After careful consideration however, it was decided that this would not present a true picture, reflecting instead the different degrees of excavation that had taken place over all of the sites. One cannot create a true picture on assemblage size over time if only a handful of sites have been excavated fully, *i.e.* Winnal Down, against a majority where perhaps only 2% has been explored. As a result, this table has been created based on the presence of a potential Iron Age flint assemblage alone.

The results were in fact rather surprising as there appears to be no noticeable swing in any direction between the Early, Middle or Late Iron Age, and those sites which have been identified as belonging to a single phase of the Iron Age are not that variable; EIA – 10, MIA – 8, LIA – 9. When looking at the sites which span some, or all, of the Iron Age, there is only a slight increase in the number of sites belonging to the E-MIA. The single LBA site is not representative of this period as there are many sites in the LBA that have contemporary flint assemblages, however, it was beyond the scope of the current study to study these in detail, the well published LBA site of North Ring, Mucking was a very late example used for a comparison of flint type in this study.

In considering this analysis two points must be borne in mind. First, only seven of the 81 assemblages put forward in this study have been analysed in detail and despite the published descriptions of the flint assemblages indicating a potential date contemporary with other Iron Age material, they should be re-analysed before any firm conclusions are made. Second, if so many sites appear to produce Iron Age flint artefacts, why has this fact not become accepted and discussed in depth before now? We have seen how archaeologists have relegated flint to the status of a 'lower class' artefact on later prehistoric sites (*e.g.* at Meare Village East where Bullied and Gray paid workers differing amounts to find 'prized' artefacts despite the fact that they had no objection to the notion of contemporary flint use (Coles 1987, 13)). This selective recording and keeping of artefacts is not unique and it must be considered how the general notions we hold as to what we expect to recover from certain periods clouds our judgements on the retrieval and handling of artefacts such as flints.

Table A7-1: The 81 flint assemblages used in this research presented by their site type against their suggested site dates produced by contemporary material cultures sourced from their published reports.

	hillfort	settlement	enclosure	farmstead	small walled settlement	barrow / settlement	reuse of barrow material	midden	coastal site	pit alignments / group	earthwork	activity	features	Total
LBA		1												1
BA-IA		2												2
BA-RB		1												1
BA-PM													1	1
LBA-EIA	1	2						1				1	1	6
LBA-RB			1									1		2
EIA	2	6	2											10
E-MIA	2	1												3
E-LIA	1		1											2
EIA-RB	1	1	3		1							1	1	8
MIA-RB	1		2	1										4
MIA	1	3	3							1				8
LIA	3	4	1									1		9
LIA-RB	2			1								1		4
LIA-Sax												1		1
IA			2				1			1	1	1		7
IA-RB				1							1			2
RB		1												1
Total	**14**	**22**	**15**	**3**	**1**	**0**	**1**	**1**	**0**	**2**	**2**	**7**	**3**	**71**
?Neo / IA									1					1
Neo / IA										1				1
LNeo / IA-RB / Sax		1												1
BA / LIA		1												1
BA / IA						1								1
LBA / MIA			1											1
LBA / LIA-RB			1											1
LBA-IA / RB /PM			1											1
E-MIA / RB		1												1
MIA / RB			1											1
Total	**0**	**3**	**4**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**10**
Overall Total	**14**	**25**	**20**	**3**	**1**	**1**	**1**	**1**	**1**	**3**	**2**	**6**	**3**	**81**

Location vs. period

Figures A7-1 to A7-4 attempt to break the general distribution pattern down by period in order to observe whether flint was in widespread use throughout the whole of the Iron Age or whether any shift in patterns of usage are apparent. Due to many sites spanning several periods this is difficult to achieve and so the maps are broken down by the period from which the sites are dated *e.g.* EIA onwards. For instance, the latter map would include all sites which are either dated to the EIA only, or those which have an earliest date in the EIA but continue in to later periods. It would not include sites which have a definite start date in the MIA or LIA. There are two deviations from this system that have been implemented to allow easier viewing of the figures. The two maps for the MIA and LIA onwards have been amalgamated to aid the discussion put forward for them, as has the

LBA-EIA only sites (treated as an important transitional period) and the LBA-EIA onwards.

LBA and EIA

We begin with the LBA onwards map (fig. A7-1), which does not include sites which are LBA-EIA only as these are dealt with separately. As previously stated this map does not represent the LBA as a whole but highlights those sites which have an earliest date in the LBA and continue beyond the EIA. The six sites indicated on this map are all located in the south of Britain predominately the south east. They consist of two enclosures, two settlements, one 'features' and one activity site.

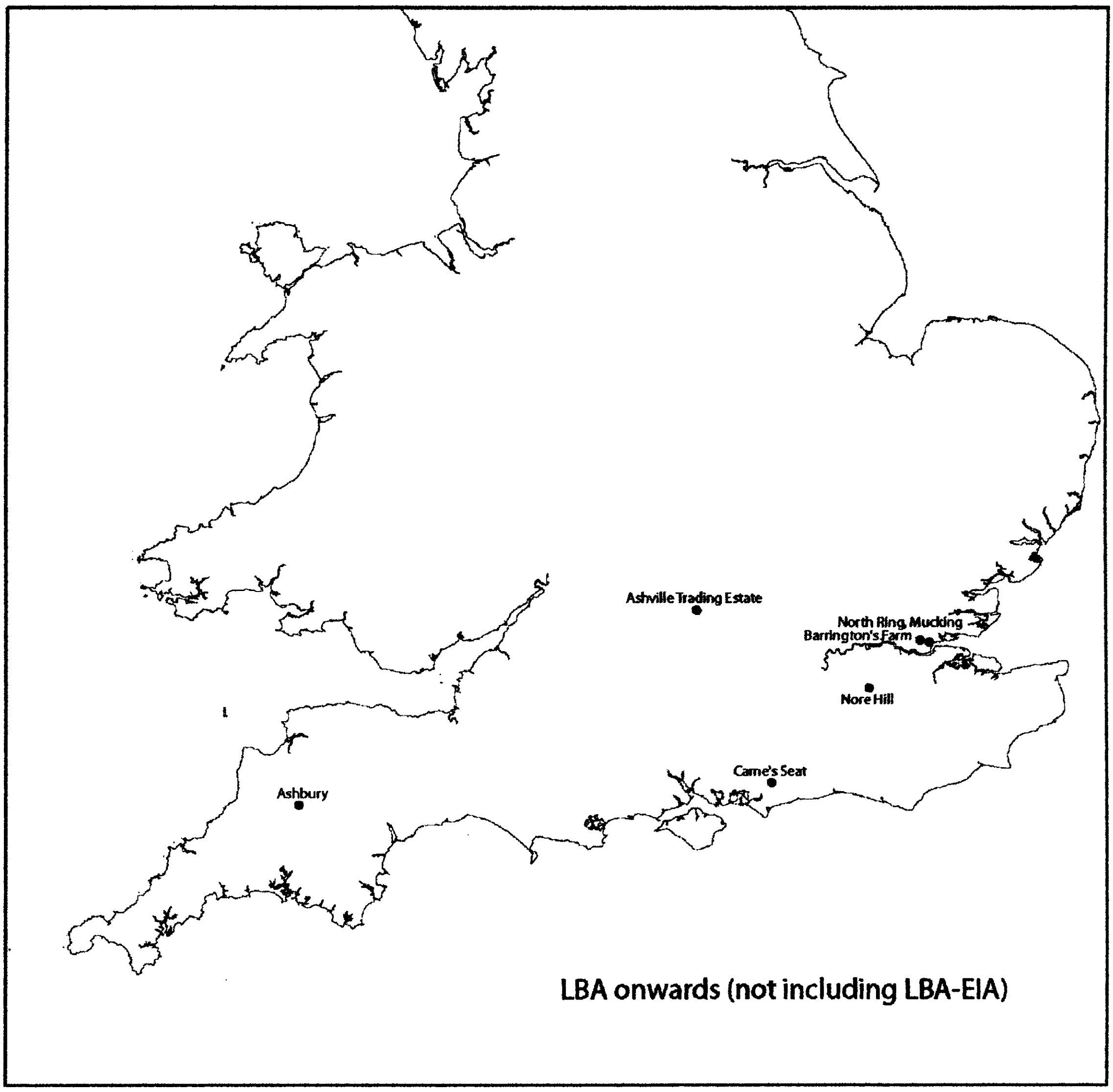

Figure A7-1: Distribution of flint utilisation at sites that begin their date from the Late Bronze Age and into the Iron Age.

Figure A7-2 shows all of the sites with a LBA-EIA origin date which continue through to a later period. There are, of course, a number of sites on this map which reflect partly the difficulties in dating this period accurately, particularly with reference to C^{14}. Sites that have been dated solely to the LBA-EIA using relative techniques have been marked in red. The overall distribution for these sites does show a trend towards the south east with respect to flint use, with the activity site of Buddon Wood (a quarry location), the settlement of Gretton and the enclosure of Erw-wen standing alone in the north of the research area. As discussed earlier, with the three latter sites, the two Cornwall sites – a hillfort and a small walled settlement – are likely to be a product of archaeological bias either due to visibility of their remains or chance discovery.

Figure A7-2: Distribution of flint utilisation at sites that either are dated to the Late Bronze Age–Early Iron Age alone or begin their date from the Early Iron Age.

If we look at the distribution for the LBA-EIA sites alone (in red) we see a similar southernly distribution but one that appears to form an open band across the country from the Severn estuary to the Thames estuary. The majority of the sites in the east are either enclosures or settlements and this may reflect the amount of development in this area, whereas in the west the hillforts at Llanmelin and Budbury along with Killbury in Cornwall and Willbury Hill in Hertfordshire reflect not development in these areas but the high archaeological visibility of these sites. The same may also be suggested for the midden site at Potterne.

The two settlement sites of Heron Grove and Seaford Head Camp show that flint was in use in the far south in the EIA and it is suggested that the gap between the red sites is not a true reflection. Many of the flint assemblages (or parts of) from the other sites on this map would potentially date to the EIA phases, resulting in a distribution that was widespread across the south of Britain. Likewise the evidence recovered from Buddon Wood, Gretton, Erw-wen and potentially Fison Way in Thetford suggest that flint was in use this far north in the EIA, we simply have not discovered and excavated many sites relating to this period in these areas. This has already been discussed as a factor for the Midlands area.

MIA

The distribution becomes very interesting when viewing the MIA (in red) in figure A7-3. Although we have to acknowledge that if a number of the southernly sites from figure A7-2 were reanalysed, some of them may show a MIA or later date, those sites that have been securely dated to the MIA show a preference for the central and eastern areas of the country with no sites in the far south. Again the Moel-y-gerddi enclosure and Midsummer hillfort may have attracted archaeological attention through their visibility and suggest the probability of MIA flint use on a wider scale than portrayed, however the appearance of a shift in distribution is an interesting one. It is also important to consider that most of the site types in the Midlands area are enclosures, which are easier to identify through archaeological survey than settlements. Enclosure based settlements and land division boundaries begin to appear in the LBA in the south of Britain and do not really 'take off' in the central and north of the country until MIA. This must be an important factor in our distribution for both the Early and Middle Iron Age and it is very likely that EIA and MIA open settlements in central Britain have gone un-noticed. However, this alone does not explain why we have a general predominance of sites in central and eastern Britain for the MIA.

As suggested above, some of the flint assemblages in figure A7-2 may not relate to EIA phases and others may relate to multiple phases. Winnal Down falls into the latter category and really should appear on both the Early and Middle Iron Age maps and it is probable that this may apply to several sites, particularly Old Down Farm, Micheldever banjo enclosure, Dibble Farm, Winklebury Camp and Ounce's Barn. Until detailed analysis has taken place for other sites, as with Winnal Down, further clarification cannot be achieved.

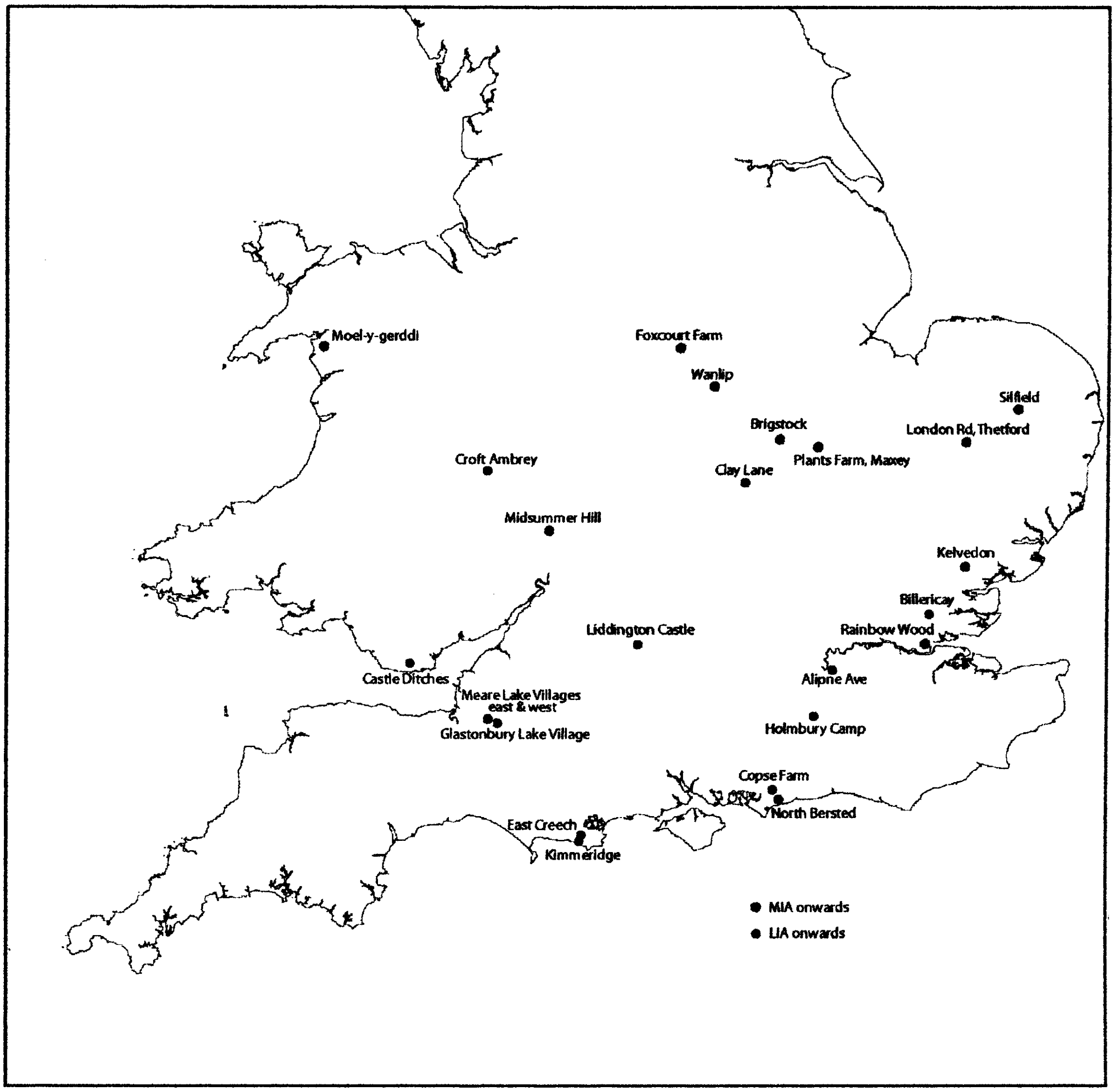

Figure A7-3: Distribution of flint utilisation at sites that begin their date either from the Middle Iron Age or the Late Iron Age.

LIA

The LIA sites also presented on figure A7-3 appear to show another general shift in distribution back to south Britain. Four of these sites are hillforts which are widely dispersed, as are the settlement sites if we include Copse Farm farmstead. However, the three Lake Villages in the west do dominate the settlement data due the extensive archaeological attention they have received over the last 120 years. As a balance to this the Clay Lane site in Northampton shows signs of activity due to the disruption of urban development, its presence again suggesting a more widespread utilisation. The 'MIA onwards' sites of Foxcourt Farm, Plants Maxey and London Road, Thetford may also prove to have flint utilisation in their LIA phases which would once again imply a broader distribution than that given in figure A7-3. Despite these considerations for the distribution of LIA flint utilisation, there still appears to be a gap between the north and south of the two distributions, which at present is hard to explain beyond an appeal to the vagaries of archaeological practice and visibility.

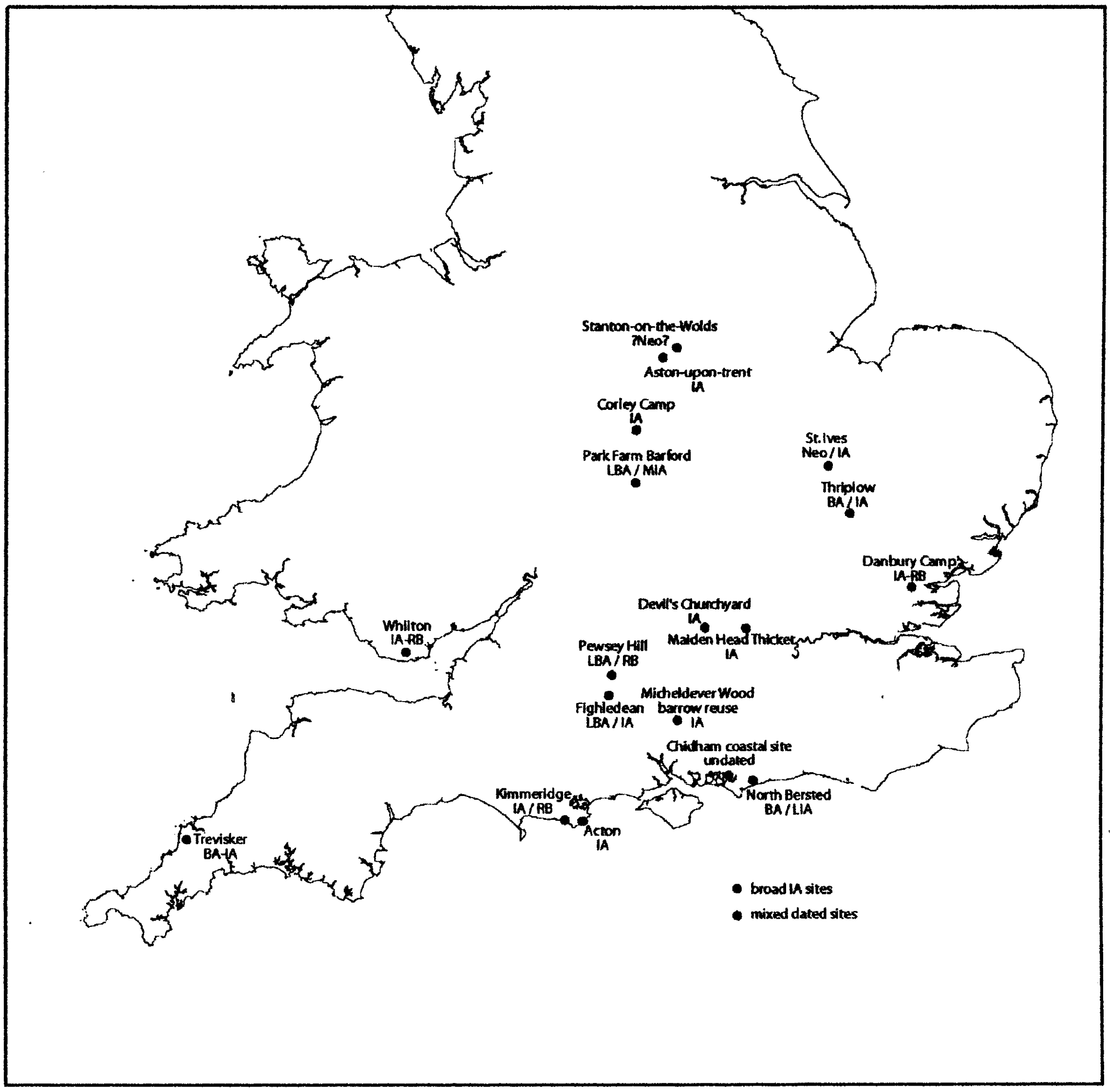

Figure A7-4: Distribution of flint utilisation at the remainder of sites where they date either to multiple periods which are linked chronologically or have a much broader date applied to them.

Two sites from the mixed phase map (fig. A7-4) have been also been added to the LIA distribution; North Bersted and Kimmeridge. North Bersted has been analysed in detail in the current study and it has been shown that the flint assemblage was a mixture of Mesolithic, Bronze Age and Late Iron Age material of which the latter two industries related to corresponding evidence. This should allow the site to be represented on the LIA distribution map. Kimmeridge is also a well documented site with excavation evidence for flint utilisation in the production of shale artefacts throughout the Iron Age but predominately the LIA-RB period (Calkin 1948; Davis 1936; Woodward 1987).

In conclusion, the probability of a number of 'shifts' in the utilisation of flint occurring throughout the Iron Age holds much promise for further research. Before this is possible however, it is required that further analysis of many of the sites is carried out. The distributions illustrated here however, may challenge any notion of a shift in flint use between the Early, Middle and Late Iron Age phases, instead supporting a more widespread use throughout the period.

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